

Cantidad
\$ 5,100,000.00
Cuenta
01-4042-54714-66
01-2321-23235

THIRD AMENDMENT CONTRACT 2011-P00034C
RENEWABLE POWER PURCHASE AND OPERATING AGREEMENT
BETWEEN
HORIZON ENERGY LLC AND
PUERTO RICO ELECTRIC POWER AUTHORITY

APPEAR

AS FIRST PARTY: Puerto Rico Electric Power Authority, hereinafter referred to as PREPA, a public corporation and government instrumentality of the Commonwealth of Puerto Rico, created by Act 83 of May 2, 1941, as amended, represented in this act by its Executive Director, engineer Juan Francisco Alicea Flores, of legal age, married, and resident of Caguas, Puerto Rico.

AS SECOND PARTY: HORIZON ENERGY LLC, hereinafter referred to as "HORIZON" with its principal office at 268 Ponce de León, The Hato Rey Center, Suite 1121, San Juan, Puerto Rico 00918, represented by its Vice President of Operations, mister Leslie L. Hufstetler Oquendo, of legal age, single, and resident of Humacao, who is duly authorized to execute this Amendment on behalf of HORIZON as certified by Resolution adopted by its Manager dated May 16, 2014.

WITNESSETH

In consideration of the mutual covenants hereinafter stated, the parties agree themselves, their personal representatives, and successors as follows:

STATE

WHEREAS: The appearing parties executed on October 15, 2010 a Power Purchase and Operating Agreement (PPOA), as amended, for the development of a 10 MW photovoltaic solar energy system in Salinas, Puerto Rico (the Facility);

WHEREAS: The appearing parties executed on November 21, 2011 a First Amendment to the PPOA, and on February 23, 2012 a Second Amendment to the PPOA, the PPOA as amended is hereinafter referred to as the PPOA; and

WHEREAS, the Parties hereby agree to amend certain provisions of the PPOA.

NOW THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties, intending to be legally bound, agree as follows:

1. Article 1, DEFINITIONS, is amended to include the term "Contracted Capacity" and defines it as follows: means the maximum AC capacity to be exported by HORIZON at the Interconnection Point, which shall be equal to the lesser of (i) the Generating Capacity and (ii) the 10 MW AC. The term "Dependable Capacity" in Section 7.1 shall be replaced by "Contracted Capacity".
2. Article 1, DEFINITIONS, Section 1.20 is amended to replace the term "Dependable Capacity" with "Generating Capacity" and maintain the definition as established in said section. References to the term "Dependable Capacity" in Sections 12.2, 14.4 and Article 18(b) shall be substituted by "Generating Capacity".
3. Article 5, TERM, Sections 5.1 and 5.2 in the PPOA, are hereby amended by deleting, in each Section, the phrase "Twenty (20)" and replacing it with the phrase "Twenty-Five (25)", and amending the language of the first sentence of Section 5.2, to read as follows: "The Term of this Agreement may be extended by mutual agreement of the Parties for up to one period of five (5) Years, following the expiration of the initial Twenty Five Agreement Years Term."
4. Article 7, DISPATCHING, is deleted in its entirety and replaced by:

"ARTICLE 7. DISPATCHING

7.1 PREPA agrees that the Facility will be designated as a "must run" unit (to the full extent of the Contracted Capacity) and will not be disconnected except to the extent necessary due to a Force Majeure or an Emergency that cannot be avoided or mitigated without the shutdown or disconnection of the Facility.

7.2 Notwithstanding Section 7.1, PREPA may require that HORIZON reduce the amount of Net Electrical Output by curtailment due to

operating problems that affect safety margins or reliability levels in PREPA's electrical system; provided, however, any reduction in the level of Net Electrical Output required by PREPA hereunder shall be based upon and implemented in a manner consistent with Prudent Utility Practices and within the Design Limits. PREPA shall not be entitled to reduce Net Electrical Output under this Agreement due to (a) economic factors, (b) any inconvenience or other condition not expressly included in the preceding sentence, (c) any condition of any nature including those specified in the preceding sentence if PREPA is not promptly and prudently seeking a remedy or cure in accordance with Prudent Electrical Practices, or (d) any other circumstance that can be mitigated by PREPA through economic means.

- 7.3 Notwithstanding Sections 7.1 and 7.2 above, PREPA may reduce the Net Electrical Output by curtailment, when the following conditions are present: (a) the Facility fails to comply with the requirements of APPENDIX G, MINIMUM TECHNICAL REQUIREMENTS FOR INTERCONNECTION PHOTOVOLTAIC (PV) FACILITIES, in which case such disconnection or curtailment shall be on and subject to the protocols established in the Agreed Operating Procedures, (b) HORIZON fails to perform annual tests for compliance with the MINIMUM TECHNICAL REQUIREMENTS FOR INTERCONNECTION PHOTOVOLTAIC (PV) FACILITIES as required in Section 12.2, and such failure is not cured within 30 days after written notice from PREPA, and (c) HORIZON fails to keep the Facility PSS/E mathematical models current with the future versions of the PSS/E program thirty (30) Days after a PSS/E version upgrade is notified in writing by PREPA to HORIZON, provided however that: (i) the notice includes all the necessary technical information to update the models, and (ii) the upgrade of these models is feasible in that time period. For the avoidance of doubt, reduction in Net Electrical Output by curtailment or disconnection due to (a) above, and disconnection of Net Electrical Output due to (b) and (c) above, may be of an extended or permanent nature. Any disconnection, or reduction in Net Electrical Output by curtailment, shall end immediately after

EL
JLB


HORIZON cures such non-compliance, within the time period established in Section 17.1 of the PPOA. The parties will determine in good faith not later than July 19, 2014 the annual tests to be performed by HORIZON to comply with item (b) above.

7.4 Following the Commercial Operation Date, HORIZON will provide to PREPA a nonbinding estimate of short term, next Day and next week production, based on the previous Day production, estimated strength of the solar radiation the next Day and week and based on the meteorological forecast for the region and site. The Parties shall include in the Agreed Operating Procedures the procedures and protocols necessary for providing said estimates.

7.5 PREPA acknowledges no intent to reduce Net Electrical Output by curtailment or disconnection under this Agreement outside of those described in this Article 7 and Article 8."

3. Article 8, CONTROL AND OPERATION OF THE FACILITY, is deleted in its entirety and replaced by:

"ARTICLE 8. CONTROL AND OPERATION OF THE FACILITY




8.1 HORIZON shall, at least sixty (60) Days prior to the Commercial Operation Date, submit a written schedule of Scheduled Outages ("Scheduled Outage Program") for the remaining portion of the first Year of the Facility's operations and, if the Commercial Operation Date occurs after September 1, for the following Year, setting forth the proposed Scheduled Outage periods. Thereafter, HORIZON shall submit to PREPA, in writing, by September 1 of each Year, its proposed Scheduled Outage Program for the next Year.

8.2 HORIZON shall use reasonable efforts to notify PREPA of any Non-Scheduled Outages at least twenty four (24) hours in advance and coordinate all Non-Scheduled Outages with PREPA.

8.3 If an Emergency is declared by PREPA, PREPA's dispatching centers may disconnect the Facility from PREPA's system, or reduce the Net Electrical Output by curtailment, to the extent permitted by

Article 7 and the Agreed Operating Procedures. If a curtailment pursuant to Article 7 is declared by PREPA, PREPA's dispatching centers may curtail the Facility's output to the extent permitted by Article 7 and the Agreed Operating Procedures. The Facility will remain disconnected from PREPA's system, or curtailed, following an Emergency until HORIZON has received permission to reconnect from PREPA's dispatching center in accordance with the Agreed Operating Procedures. Any disconnection or reduction in the Facility's output required by PREPA under this Agreement shall be of no greater scope and of no longer duration than is required by the Emergency or operating condition pursuant to Article 7 and the Agreed Operating Procedures, consistent with Prudent Utility Practices. Upon an Emergency or curtailment pursuant to Article 7 that results in any disconnection or reduction in the Facility's output, PREPA shall, as soon as practicable after the occurrence of the Emergency or operating condition, provide written notice to HORIZON describing the particulars of the occurrence and its estimated duration and shall diligently use all reasonable efforts, consistent with Prudent Utility Practices, to remedy the Emergency or operating condition. In any situation where PREPA causes a reduction of Net Electrical output or a disconnection of the Facility, PREPA shall treat the Facility no less favorably than other facilities connected to PREPA's grid.

- 
- 8.4 PREPA shall have no liability to HORIZON in connection with any disconnection or reduction in the Facility's output required by PREPA under Section 7.1, Section 7.2 or Section 8.3 unless (a) the Facility is otherwise capable of generating and delivering electrical output, (b) HORIZON has provided PREPA with written notice of such capability, and (c) the duration of any such disconnection or curtailment (or combination thereof) has exceeded the applicable waiting periods set forth in the next three sentences after delivery of HORIZON's notice to PREPA. With respect to a disconnection or curtailment that is not attributable to severe weather conditions, the waiting period shall be the earliest to occur of (i) forty-eight (48) consecutive hours, (ii) forty-eight (48) hours in the aggregate during

any thirty (30) Days period and (iii) one hundred forty-four (144) hours in the aggregate during any Year. With respect to a disconnection or curtailment that is attributable to severe weather conditions, including a hurricane or tropical storm, the waiting period shall be the earlier to occur of (i) a maximum of seven (7) consecutive Days and (ii) two hundred sixty-four (264) hours in the aggregate during any Year. To the extent a disconnection or curtailment (or combination thereof) exceeds any of the time periods described in the preceding sentences (as applicable), then, notwithstanding anything in this Agreement to the contrary, PREPA shall pay HORIZON for each hour of the curtailed energy after the waiting period in accordance with Appendix D, DETERMINATION OF NET ELECTRICAL OUTPUT NOT RECEIVED. PREPA's liability pursuant to this Section 8.4 for any single disconnection or curtailment shall be offset by any insurance proceeds actually received by HORIZON from any business interruption insurance policy that HORIZON may obtain.

8.5 Each Party shall cooperate with the other in establishing Emergency plans, including recovery from a local or widespread electrical blackout; voltage reduction in order to effect load curtailment; and other plans which may arise. HORIZON shall make technical information and data available to PREPA concerning start-up times and black-start capabilities.

8.6 If the Facility has a Scheduled Outage or a Non-Scheduled Outage, and such Scheduled Outage or Non-Scheduled Outage occurs or would occur coincident with an Emergency, PREPA may request that HORIZON shall make reasonable efforts, consistent with Prudent Utility Practices and with PREPA's approval, to reschedule the Scheduled Outage or Non-Scheduled Outage or if the Scheduled Outage or Non-Schedule Outage has begun, to expedite the completion thereof.

8.7 HORIZON shall provide as a minimum at its expense, and PREPA shall install at HORIZON's expense, the following communication facilities linking the Facility with PREPA's dispatching centers:

- (a) One Remote Terminal Unit ("RTU"), including setup installation and configuration; which shall be specified by PREPA.
- (b) Two independent telecommunication circuits. One voice grade to link the SCADA system to the facility RTU using DNP protocol through a designated PREPA communication node. A second fiber optic circuit to link PREPA's network to the Facility in order to access protection equipment, revenue meters and the DSM, through the ruggedcom security device as specified by PREPA.
- (c) A voice telephone extension for the purpose of communicating with Monacillos TC and Ponce TC.
- (d) A telephone line and equipment to transmit and receive facsimile messages to confirm the oral communication between PREPA and HORIZON.
- (e) A Dynamic System Monitor (DSM) equipment in accordance with APPENDIX E - TECHNICAL SPECIFICATIONS FOR THE DYNAMIC SYSTEM MONITOR, for recording the power disturbance caused by electro-mechanic swings and to measure the system response to the swing disturbance. HORIZON shall be responsible of providing, installing, wiring and commissioning the DSM equipment.

Items provided by HORIZON in accordance with this Section 8.7 shall be subject to the approval of PREPA, which approval shall not be unreasonably withheld or delayed.

8.8 Each Party shall keep complete and accurate records and other data required for the proper administration of this Agreement.

- (a) All such records shall be maintained for a minimum of five (5)

cc
90th

years after the preparation of such records or data and for any additional length of time required by regulatory agencies with jurisdiction over the Parties; provided, however, that neither Party shall dispose of or destroy any such records without thirty (30) Days prior notice to the other Party. Within ten (10) Days after receipt of the notice of intention to destroy or dispose, the other Party shall have the right to require the notifying Party in writing to retain and deliver to it such records at its sole cost and expense. Any records so notified shall be delivered to the Party requesting their return in no more than ten (10) Days.

- (b) HORIZON shall maintain an accurate and up-to-date operating log at the Facility with records of (i) real and reactive power for each hour, (ii) changes in operating status and Scheduled Outages, and (iii) any unusual conditions found during inspections.
- (c) Either Party shall have the right from time to time, upon fourteen (14) Days written notice to the other Party and during regular business hours, to examine the records and data of the other Party relating to the proper administration of this Agreement any time during the period the records are required to be maintained.

8.9 At PREPA's request, HORIZON shall provide certifications of tests and inspections of the electric and protection equipment, which may impact PREPA's electrical system. PREPA shall have the right to visit and visually monitor the Facility during operation and testing, including any acceptance testing of the Facility."

4. Section 11.2 in the PPOA is hereby amended by deleting that Section in its entirety and replacing it with the following:

"11.2 For each Billing Period, PREPA shall pay Horizon an Energy Payment and a Green Credits Payment for the Net Electrical Output measured in accordance with Section 10.3. HORIZON shall include both the Energy Payment and the Green Credits Payment in the monthly invoice submitted to PREPA pursuant to Section 11.3 calculated as follows.

(a) Energy Payment - Beginning with the Pre-Operation Period and continuing throughout the Term of this Agreement:

$EP = EPP \times NEO$ (subject to annual escalation as set forth below)

Where:

EP is the Energy Payment

EPP is the Energy Purchase Price, which for the first Agreement Year shall be equal to \$0.1430 per kwh of NEO.

NEO is the Net Electrical Output expressed in kilowatt hours.

The Energy Purchase Price for Agreement Years 2 to 20 shall be escalated annually on each anniversary of the Commercial Operation Date in an amount equal to two percent (2%) per Agreement Year. For Agreement Years 21 to 25 the Energy Purchase Price shall be equal to the Energy Purchase Price applicable during Agreement Year 20, not subject to escalation.

(b) Green Credits Payment - Beginning with the Pre-Operation Period and continuing throughout the Term of this Agreement:

$GCP = GCPP \times NEO$

Where:

GCP is the Green Credits Payment

GCPP is the Green Credit Purchase Price, which shall be equal to \$0.0350 per kWh of NEO for the Term. For the avoidance of doubt the Green Credit Purchase Price shall not be subject to escalation for the Term.

NEO is the Net Electrical Output expressed in kilowatt hours."



5. Section 11.3 in the PPOA is hereby amended by deleting that Section in its entirety and replacing it with the following:

11.3 On or before the fifteenth (15th) Day following the end of each Billing Period (or if later, within five (5) Days after HORIZON receives the meter reading data pursuant to Section 10.4), HORIZON shall provide PREPA with a written invoice for the Net Electrical Output delivered to PREPA, and such invoice shall be paid by PREPA within forty-seven (47) Days after the end of the Billing Period. Interest shall accrue on the payments due to HORIZON commencing on the Day after the date on which PREPA is required to make any such payment pursuant to the preceding sentence. Notwithstanding the payment requirements set forth in this Section, any amounts owed to a Party by the other Party pursuant to this Agreement that are not paid when due to the Party to whom they are owed, may, at the discretion of such obligee Party be offset against the amounts due to the other Party from such obligee Party; provided that such amounts are undisputed or have been determined to be owed to the obligee Party by a final award pursuant to Section 22.12; and provided, further, that the obligee Party shall provide the other Party with five (5) Business Days' advance written notice describing in reasonable detail the amounts to be set off before effecting any such set off. Payments to a Party shall be made by wire transfer to an account with a bank to be specified by such Party in writing, which specification shall be notified to the other Party at least thirty (30) Days prior to the Initial Synchronization Date, or with such other banks as may thereafter be specified by a Party in writing at least ten (10) Days prior to the date in which payment is due. Either Party may by written notice to the other, change the address to which such payments to the notifying Party are to be sent."

6. Section 16.1 in the PPOA is hereby amended by deleting that Section in its entirety and replacing it with the following:

"16.1 Termination of this Agreement shall occur only upon: (a) expiration of the Term of this Agreement as provided in Article 5; (b) mutual written consent of the Parties; (c) the election of PREPA following a Development Abandonment or Permanent Closing; (d) the election of the non-defaulting Party following the occurrence of a Breach under Article 17; (e) the election of either Party following delay by HORIZON in achieving the Commercial Operation Date by February 19, 2015, as



extended by Force Majeure event, Pending Permits, a Legal Challenge, or any delay caused by any act or omission of PREPA, but in no event longer than twelve (12) additional Months; or (f) the circumstances provided in Section 16.2.

7. Section 18(d) in the PPOA is hereby amended by deleting that Section in its entirety and replacing it with the following:

"(d) If there is a balance in the tracking account at the end of the twenty-third (23rd) Agreement Year (Balance), HORIZON agrees that PREPA may retain up to fifty percent (50%) of the amounts due in each Billing Period thereafter which shall reduce the tracking account balance by an amount equal to such Balance provided such amount is undisputed or determined to be owed pursuant to a final award pursuant to Section 22.12. This monthly retention shall be eliminated when the tracking account balance equals zero; provided that if any portion of the Balance has not been repaid at the end of the twenty-fifth (25th) Agreement Year plus any extension as per Article 5, PREPA shall have the option to extend the Term for up to an additional two (2) Agreement Years as necessary to repay the Balance plus Interest by applying such monthly retention as set forth above. If the Agreement is so extended, the Energy Payment for the twenty-sixth (26th) Agreement Year and thereafter shall be agreed by the Parties at such time. If there is a deficit in the tracking account at the end of the twenty-fifth (25th) Agreement Year, an amount sufficient to compensate HORIZON for such deficit shall be paid by PREPA to HORIZON within forty-seven (47) days provided such amount is undisputed or determined to be owed pursuant to a final award pursuant to Section 22.12. In the event this Agreement is terminated according to Article 17 herein, and there is a balance in the tracking account (Termination Balance), such Termination Balance plus Interest shall be paid to PREPA within thirty (30) days provided such amounts are undisputed or determined to be owed pursuant to a final award pursuant to Section 22.12. Notwithstanding, during the Term of this Agreement and before any termination of this Agreement takes place, Seller shall have the option to prepay all or any portion of the Balance

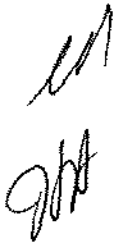


or the anticipated Termination Balance, if applicable, at any time or from time to time."

- 
- 
8. Substitution of APPENDIX B, INTERCONNECTION: effective as of the date hereof, APPENDIX B of the PPOA is hereby substituted and replaced in its entirety by APPENDIX B attached hereto.
 9. Substitution of APPENDIX C, EXAMPLE OF PRICE INDEX CALCULATION: effective as of the date hereof, APPENDIX C of the PPOA is hereby substituted and replaced in its entirety by APPENDIX C, AMENDED-ENERGY PURCHASE PRICE, attached hereto.
 10. Section 12.3 of the PPOA and APPENDIX D, MACHINE PARAMETERS MEASUREMENTS AND FIELD TEST REQUIREMENTS, of the PPOA are deleted in their entirety because their content does not apply to a Solar Photovoltaic Project, and replaced with a new APPENDIX D, DETERMINATION OF NET ELECTRICAL OUTPUT NOT RECEIVED.
 11. Substitution of APPENDIX E, TECHNICAL SPECIFICATIONS FOR THE DYNAMIC SYSTEM MONITOR: effective as of the date hereof, APPENDIX E of the PPOA is hereby substituted and replaced in its entirety by APPENDIX E attached hereto.
 12. Substitution of APPENDIX G, MINIMUM TECHNICAL REQUIREMENTS FOR INTERCONNECTION OF PHOTOVOLTAIC (PV) FACILITIES: effective as of the date hereof, APPENDIX G of the PPOA is hereby substituted and replaced in its entirety by APPENDIX G, MINIMUM TECHNICAL REQUIREMENTS FOR INTERCONNECTION OF PHOTOVOLTAIC (PV) FACILITIES, attached hereto. Any references in the PPOA to the APPENDIX G, is amended and replaced with APPENDIX G, MINIMUM TECHNICAL REQUIREMENTS FOR INTERCONNECTION OF PHOTOVOLTAIC (PV)
 13. Representations and Warranties of each Party.
 - (a) PREPA hereby represents and warrants to HORIZON: (i) the execution and delivery by PREPA of this Amendment, and the Amendment itself, have been duly authorized by PREPA's Governing Board and any other applicable PREPA governing body in accordance with applicable law,

and (A) do not and will not require any additional internal or external consent or approval, (B) do not and will not violate any provision of Act No. 83 of May 2, 1941, as amended, or its regulations, or any material indenture, contract or agreement to which it is a party or by which its properties may be bound; and (ii) this Amendment is a legal, valid, and binding obligation of PREPA, enforceable against PREPA in accordance with its terms, except as may be limited by applicable bankruptcy, insolvency or similar laws affecting the enforcement of rights generally.

(b) HORIZON hereby represents and warrants to PREPA: (i) the execution, delivery, and performance by HORIZON of this Amendment have been duly authorized, and do not and will not (A) require any additional internal consent or approval of HORIZON, or (B) violate any provision of HORIZON's certificate of formation or operating agreement, or any material indenture, contract or agreement to which it is a party or by which it or its properties may be bound, or any law, ordinance, rule, regulation, order, writ, judgment, injunction, decree, determination or award presently in effect; and (ii) this Amendment is a legal, valid and binding obligation of HORIZON, enforceable against HORIZON in accordance with its terms, except as may be limited by applicable bankruptcy, insolvency or similar laws affecting the enforcement of rights generally.

- 
14. Ratification. Except as expressly amended hereby, the PPOA and all documents, instruments and agreements related thereto are and shall continue to be in full force and effect and are hereby ratified and confirmed in all respects.
15. No Implied Waiver. This Amendment shall be limited precisely as written and shall not be deemed to be a consent granted pursuant to, or a waiver or modification of, any other term or condition of the PPOA, whether or not known to the Parties, or to prejudice any other right or rights which the PPOA may now have or have in the future.
16. Counterparts. This Amendment may be executed in multiple original or facsimile counterparts, each of which shall be deemed an original and shall

be binding upon the Party who executed the same, but all of such counterparts shall constitute the same Amendment.

17. Governing Law. This Amendment shall be governed by, construed and enforced in accordance with the laws of the Commonwealth of Puerto Rico and, to the extent applicable, the laws of the United States of America. The Parties herein agree that all Disputes arising hereunder shall be resolved pursuant to Section 22.12 of the PPOA.
18. HORIZON and PREPA expressly agree that no amendment or change order which could be made to the PPOA and this Third Amendment, during its term, shall be understood as an amendment, unless both parties agree to the contrary, specifically and in writing. The previous provision shall be equally applicable in such other cases where PREPA gives HORIZON a time extension for the compliance of any of its obligations under the PPOA as amended or where PREPA dispenses the claim or demand of any of its credits or rights under the PPOA as amended.
19. Capitalized Terms. Unless otherwise stated, capitalized terms used in this Third Amendment which are not defined in this Amendment have the meaning given in the PPOA.

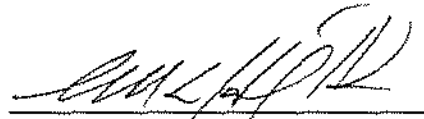
IN WITNESS WHEREOF, the Parties hereto have agreed to execute this Third Amendment in San Juan, Puerto Rico, on this 19th day of May, 2014.

Puerto Rico Electric Power Authority

Horizon Energy LLC



Juan F. Alicea Flores
Executive Director
Social Security 660-43-3747



Leslie L. Hufstetler Oquendo
Vice President of Operations
Social Security 453-69-9121

APPENDIX B

INTERCONNECTION

Seller shall provide the following information to PREPA within ninety (90) days following the Effective Date. Data submitted in a preliminary or estimated form shall be updated within thirty (30) days after final equipment arrangements and specifications are established.

1. Electrical one-line diagram of the Facility.
2. Explanation of proposed equipment protection and control scheme (may be shown functionally on the one-line diagram).
3. Site plan showing plant layout, property lines, access roads and switchyard boundaries.
4. Preliminary equipment layout and arrangement for switchyard and PV Facility step-up transformers (GSU).
5. Reactive Power Capacity curve of PV Facility.
6. Station auxiliary load.
7. Station auxiliary transformer data – impedance, connection winding, load loss and no load tap changer.
8. PV Facility step-up transformer impedance, load loss, no load taps changer, connection and winding.
9. PV Facility Short Circuit Ratio.
10. PV Facility kilowatt rating.
11. PV Facility kilovar rating.
12. Equivalent PV Facility modeling for Short Circuit Studies.
13. Seller's requirements for power supplied by PREPA during construction and start-up.
14. Project schedule (I-J or bar chart format) including but not limited to the following milestones:
 - QF status obtained
 - Engineering 30% complete
 - One-line diagram approved
 - Financial Closing Date

ell
gfk

- Major licenses/permits
- Major material procurement
- Start Construction
- Engineering 70% complete
- Utility technical submittals complete
- Operating procedures finalized
- Field Test Protocols Finalized
- Start test and start-up
- On-site Field Tests Completed
- Complete Compliance with Minimum Technical Requirements
- Initial synchronizing date
- Commercial operation

15. PSSE Mathematical Model (Parameters and Data Requirements)

The Contractor shall submit to PREPA a PSS/E mathematical model and data related to the proposed PV Facility. When referred to the PV Facility model, this shall include but is not limited to PV converter, transformers, collector systems, plant controllers, control systems and any other equipment necessary to properly model the PV Facility for both steady-state and dynamic simulation modules. It is required that the Contractor submits both an aggregate and detailed model of the PV Facility. The aggregate and detailed model of the PV Facility shall not be submitted in preliminary form.

The Contractor shall be required to submit user manuals for both the PV converter and PV Facility models. The mathematical models shall be fully compatible with the latest and future versions of PSS/E. It is preferred that the models are PSS/E standard models. In the case that the Contractor submits user written models, the Contractor shall be required to keep these models, as well as its corresponding user manual, current with the future versions of the PSS/E program until such time that PSS/E has implemented a standard model. On-site field tests to demonstrate compliance with PREPA's Minimum Technical Requirements for Interconnection of Photovoltaic Facilities (MTRs) shall be performed by the contractor. The data and PSS/E model shall also be validated, updated and officially certified according to PREPA requirements when final field adjustments and parameters measurements are completed during the on-site field tests to be performed to the facility by the contractor. The on-site field tests shall be witnessed and coordinated with PREPA's personnel.

The Contractor shall be responsible to submit PSSE mathematical models of any kind of compensation devices (ie. SVC, STATCOMs, DSTATCOMs, BESS, etc.) used on the PV Facility. It is preferred that the models are standard models provided with PSS/E. In the case that the Contractor submits user written models, the PV Facility Contractor shall be required to keep these

models current with the future versions of the PSS/E program until such time that PSS/E has implemented a standard model. In its final form, the mathematical model shall be able to simulate each of the required control and operational modes available for the compensation device and shall be compatible with the latest and future versions of PSSE. Final adjustments and parameters settings related with the control system commissioning process shall be incorporated to the PSSE mathematical model and tested accordingly by the PV Facility Contractor and PREPA system study groups.

PV Facility Owners that provide user written model(s) shall provide compiled code of the model and are responsible to maintain the user written model compatible with current and new releases of PSS/E until such time a standard model is provided. PREPA must be permitted by the PV Facility Owner to make available PV models if required to external consultants with an NDA in place.

16. Additional data necessary for dynamic modeling - At a minimum, any necessary control system model (inverter, compensator and excitation limiter models), including the time constants, gains, limits, description, block diagrams and configuration.

17. Transient Mathematical Model

The contractor shall provide a detailed transient mathematical model of the PV Facility with a compliance report that shows the level of compliance of the facility's design with PREPA's Minimum Technical Requirements for Interconnection of Photovoltaic Facilities (MTRs). The contractor shall submit the compliance report for evaluation by PREPA before the on-site field tests. PREPA and the contractor must agree on the compliance report results before the on-site field tests for verifying compliance of the Facility with the MTRs are performed.



HORIZON SOLAR PROJECT, LLC ELECTRICAL INTERCONNECTION SALINAS, PR

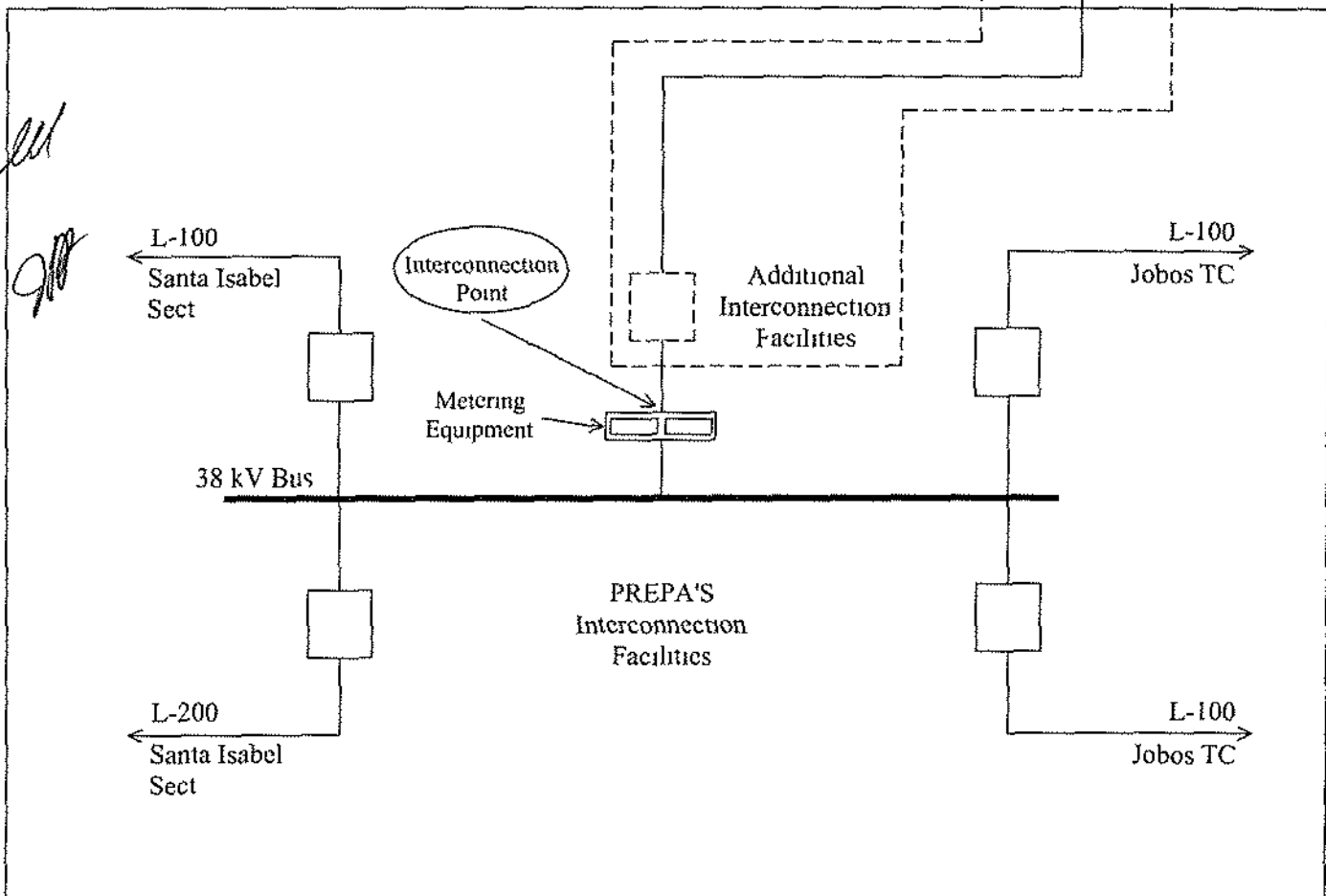
**Horizon Solar
Project, LLC**
10 MW

New 38 kV Transmission Line

Acquisition of new right of way, maintenance and construction of new transmission line are responsibility of Horizon Solar Project, LLC. This new 38 kV circuit shall be built completely out of PREPA'S actual right of way and shall not interfere with the proposed route of PREPA'S future subtransmission lines and feeders.

New 38 kV Switchyard and Land Acquisition

Required for interconnection and is responsibility of Horizon Solar Project, LLC. Horizon Solar Project, LLC shall have the total financial responsibility of the costs of the new 38 kV switchyard and corresponding land acquisition. The physical layout of the new switchyard shall take into consideration PREPA's future expansions. Horizon Solar Project shall submit to PREPA the corresponding design and drawings for evaluation and official approval.

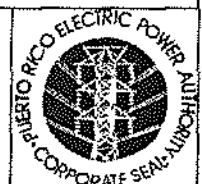


TITLE

Horizon Solar Project, LLC
Electrical Interconnection

COMPANY

PREPA
(Puerto Rico Electric Power Authority)



APPENDIX C

Amended Energy Purchase Price

HORIZON ENERGY, LLC

Year	Energy Purchase Price \$/kWh*	Green Credit Purchase Price \$/kWh**
1	0.1430	0.0350
2	0.1459	0.0350
3	0.1488	0.0350
4	0.1518	0.0350
5	0.1548	0.0350
6	0.1579	0.0350
7	0.1610	0.0350
8	0.1643	0.0350
9	0.1675	0.0350
10	0.1709	0.0350
11	0.1743	0.0350
12	0.1778	0.0350
13	0.1814	0.0350
14	0.1850	0.0350
15	0.1887	0.0350
16	0.1925	0.0350
17	0.1963	0.0350
18	0.2002	0.0350
19	0.2042	0.0350
20	0.2083	0.0350
21	0.2083	0.0350
22	0.2083	0.0350
23	0.2083	0.0350
24	0.2083	0.0350
25	0.2083	0.0350

* The Energy Purchase Price for Agreement Years 2 to 20 shall be escalated in an amount equal to two percent (2%) per Agreement Year.

** The Green Credit Purchase Price for Agreement Years 1 to 25 shall be equal to \$0.0350/kWh. The Green Credit Purchase Price shall not be subject to escalation.

APPENDIX D

DETERMINATION OF NET ELECTRICAL OUTPUT NOT RECEIVED

To calculate the Net Electrical Output not received by PREPA during any time period the following method will be used:

- A. First, the specific time period ("Event Hours") of the Day ("Event Day") that PREPA does not receive Net Electrical Output in connection with a disconnection or curtailment of the Facility will be determined.
- B. Second, the average solar irradiation as measured by the working pyranometers in the Facility as well as the average temperature will be determined for the Event Hours.
- C. Third, SELLER will provide output curves (Output Curves) for the Facility based on the power curves provided by the manufacturer and taking into account all factors that may affect the output such as, but not limited to, temperature derating, DC and AC losses, inverter losses and transformer losses. SELLER will validate the Output Curves during the first three months of operation of the Facility. Output Curves, together with the Event Hours determined under Paragraph A and average solar irradiation and temperature determined under Paragraph B, will be used to calculate the Net Electrical Output that would have been generated by the Facility during the Event Hours. APPENDIX F-1 illustrates the format of Output Curves. SELLER will provide PREPA the actual power curve furnished by the manufacturer of the photovoltaic modules installed in the Facility.
- D. Fourth, in order to ascertain the reliability of the above calculation of Net Electrical Output, the same calculations described in the above Paragraphs B and C will be made for the same time period as the Event Hours in the nearest Day prior and in the nearest Day following the Event Day for which data is available ("Comparable Hours"). The Net Electrical Output so calculated will be compared to the Actual Net Electrical Output

Handwritten initials: M and JPT

APPENDIX D - DETERMINATION OF NET ELECTRICAL OUTPUT NOT RECEIVED
PAGE 2

delivered to PREPA for the same time periods. If, the Net Electrical Output calculated from the Output Curve is plus or minus 5% (five percent) of the actual Net Electrical Output delivered to PREPA no adjustments will be made to the Net Electrical Output calculated in Paragraph C.

E. If the calculations described in the preceding Paragraph D show a variance in Net Electrical Output of more than 5% (five percent), the Net Electrical Output calculated from the Output Curve for the Event Hours will be adjusted by multiplying it by a ratio, ("Adjustment Ratio")

- The Adjustment Ratio will be calculated by taking the arithmetic average of the two ratios resulting of using the Net Electrical Output delivered to PREPA for the Comparable Hours as the numerator and the Net Electrical Output predicted by the Output Curve for the Comparable Hours as the denominator.

F. If any period during the Event Hours and thus the Comparable Hours are for a time period that is not exactly equal to the time period that the meters measure and record, the information data for that shorter time period not measured will be calculated by prorating it over the time period recorded. For example if the Event Hours is ten (10) minutes and pertinent data is recorded and kept for fifteen (15) minute intervals, the data for the shorter time period will be calculated as the product of the data for the fifteen (15) minute interval multiplied by the ratio of ten (10) divided by fifteen (15) (i.e., the actual Event Hours divided by the time interval for which records for these data are available).

APPENDIX F-1

OUTPUT CURVES

To be provided by SELLER and approved by PREPA, two weeks after
the Initial Synchronization Date.

Output Curves shall be revised annually.

ul
gmb

APPENDIX E

TECHNICAL SPECIFICATION FOR DYNAMIC SYSTEM MONITOR (DSM)

1. Introduction

The following specification defines the minimum requirements for an instrument used in the monitoring and register of dynamic disturbances on electric power systems and the supervision of generator performance according to Grid Codes.

2. Hardware

2.1 Inputs

2.1.1 The equipment shall have at least 32 analog inputs with the capacity to increase them to a minimum of 96 inputs depending in the application required analog signals. The minimum resolution for the A/D converter shall be of 16 bit. The sampling rate shall be programmable up to a minimum of 250 samples per cycle (15000 samples per second). The analog inputs shall permit at least the following types of signals:

- a. PT voltage (150 V rms minimum, Accuracy better or equal to 0.3%)
- b. CT currents (5 A rms minimum, Accuracy better or equal to 0.3%)
- c. DC voltages of at least 800 V (Accuracy better or equal to 0.3%)
- d. Small Analog Signals (Accuracy better or equal to 0.3%)
 - i. Current: 4 – 20 mA
 - ii. Voltage: 0 – 200 mV, 1V, 10 V

2.1.2 The equipment shall have at least 16 digital inputs with the capacity to increase them to a minimum of 48 inputs depending in the application required digital signals. The minimum input voltage range of the digital inputs should be 0 – 150 V. The digital inputs should be included as a user defined software triggering input.

2.1.3 The equipment shall be able to record power system frequency with a resolution of at least 0.001Hz.

2.2 The equipment shall have a built-in microprocessing unit with color monitor, keyboard and mouse from which all commands, controls and setup parameters may be entered. All setup parameters shall be store in a non-

volatile media, to prevent loss of setup data if power is interrupted. This microprocessing unit shall be of industrial grade to insure long life in a typical substation or generation plant environment.

2.3 Memory and storage capacity

The equipment shall have a non-volatile solid state memory (ex. SSD, flash, etc.) with the required capacity to store at least one (1) year of continuous data based in typical recording periods and typical recording rates. Also the memory shall have a minimum storage capacity of 1,000 RMS Trigger events and 1,000 Instantaneous trigger events based in typical recording rates and recording periods. Typical recording periods and recording rates are:

- a. RMS Trigger Recording Function (Recording rate of 1 sample per cycle on all the signals)
 - i. Pre-Trigger: 60 seconds
 - ii. Post-trigger: 300 seconds
- b. Instantaneous Values Trigger Recording Function (recording rate of 250 samples per cycle on all instantaneous signals)
 - i. Pre-Trigger: 1 second
 - ii. Post-Trigger: 2 seconds
- c. Continuous Recording Function
The recording rate is 1 sample per second on all the signals. This recording function is continuous, but saved in 24 hours period.

All the recording functions mentioned above shall work simultaneously. The equipment shall maintain the date and time in an internal battery-backed clock.

2.4 Communication

The equipment shall have at least two Ethernet 10/100/1000 Mbps port (LAN interface, TCP/IP Protocol) for local and remote network communication.

2.5 Power Source

The equipment shall have a redundant power supply. Two separate inputs (one AC and one DC) 100 – 240 VAC, 60 Hz and 100 – 150 DC. Some applications could require DC supply of 48 VDC \pm 10%, verify before the equipment acquisition.

2.6 Measurement accuracy

- 2.6.1 Voltage measurement error shall be less than \pm 0.3 % of reading
- 2.6.2 Current measurement error shall be less than \pm 0.3% of reading

3. Software

- 3.1 The software platform of the equipment shall be compatible with the latest version of windows operating system.
- 3.2 The equipment remote communication shall be thru TCP/IP network connectivity (LAN). The remote communication should permit at least the set up and data retrieval of the equipment. The equipment should have the capability to perform at least the following functions remotely:

- i. Modification of the configuration
- ii. Retrieval of captured events
- iii. Remote event triggering

- 3.3 The equipment shall have the capacity of time synchronization with GPS system. A GPS receiver and GPS antenna shall be included.

3.4 Triggers

- 3.4.1 The equipment shall support user defined programmable triggers. Triggering shall be initiated based upon primary quantities (voltage, current, and frequency), calculated quantities (watts, Var, power factor, apparent power, etc.), digital signals or small analog signals.

- 3.4.2 The trigger thresholds shall be based on limits, gradients, equations and status. Examples of trigger conditions that shall be available are:

- i. Level threshold (high level, low level, in-band, out-band, etc.)
- ii. Rate of change (ex. frequency variation (df/dt))
- iii. Manual input (keyboard trigger)
- iv. Request from remote computer
- v. Event input status (digital signal status)

- 3.4.3 A re-trigger function shall be available which permits the equipment to generate a new event register if a second disturbance is detected while the recording of the first disturbance is still in process. This process should continue if more disturbances occur in the new registers.

- 3.5 The acquisition software shall include a user defined pre-trigger interval option as well as a user defined post trigger interval for the information captured in the case of triggered events. The minimum range of the pre-trigger interval should be from 0 to 60 seconds and the minimum range for the post trigger interval should be 0 to 300 seconds. In addition, the date, time, and type of trigger that initiated the event shall be included as part of the disturbance record.

3.6 The acquisition software shall have the following capabilities:

- i. Time displays (ex. Oscilloscope)
- ii. Digital Status display (ex. High/Low, 1/0)
- iii. Multiple displays and multiple signals in displays in real time and off-line
- iv. Display resizing
- v. Programmable conversion of range and units of signals
- vi. Independent range for signals

3.7 The acquired data shall be available in a format directly compatible with Siemens Power Technologies International (Siemens PTI) PSS/E plotting software.

3.8 The software shall support data export in ASCII, CSV and PSS/E formats.

3.9 The software shall support image export in JPG, BMP or WMF formats.

3.10 The software shall have the following analysis capabilities for the data and signals (primary and calculated):

- i. Fast Fourier Transform (FFT)
- ii. Peak analysis
- iii. Filter functions
- iv. Series and scalar mathematic (square root, inversion, square, sum, gain, offset, etc.)

3.11 The software shall performs the following power engineering calculations (on-line and off-line) and measurements:

- i. Three phase and single phase Power (Real, reactive, apparent)
- ii. Power Factor
- iii. Power angle
- iv. rms line and phase voltage
- v. rms current
- vi. Power system frequency
- vii. DC voltage and currents
- viii. AC voltage and currents

4. General

4.1 Environmental Conditions

- 4.1.1 Operating temperature: 0° C to 50° C
- 4.1.2 Operating humidity: 95 %, non-condensing

4.2 Equipment cabinet and corresponding accessories

The cabinet should have test switches at the front of the panel for the three phase voltages and currents. The test switches should have a minimum rating of 600 V rms and 30 A rms; semi flush mounted, back connected, equal or similar to ABB FT-1, style no. 129A514G01.

MM
gmr
The signals (analog and digital) should terminate on terminal blocks inside the cabinet, before the connection to the Dynamic System Monitor. The AC, DC, digital, exciter voltage and exciter current signals should be in different terminal blocks. The terminal blocks should have a minimum rating of 600 V rms and 30 A rms (**except the exciter voltages signals**, see below). Examples of terminal blocks are: GE CR151B2 and Marathon 1512 STD. The current signals should terminate on shorting type heavy duty terminal blocks equal or similar to Marathon, catalog number 1506SC. The terminal blocks used for the excitation voltage of the generators must have a nominal voltage capacity greater than 800 V DC. A switch or breaker for isolation purposes is also required for the excitation voltage and current signals.

4.3 Documentation

4.3.1 The equipment shall include a documentation package that contains the user, operation and maintenance manuals and the mechanical and electrical equipment drawings. The documentation should be in hard copy and in digital format.

4.3.2 The equipment documentation shall include a copy of the software.

4.4 Spare parts recommended by the equipment manufacturer shall be included in the DSM purchase order.

4.5 Warranty

The equipment warranty shall include part and service for a period not less than 60 months from the delivery day.

4.6 Equipment Training, Installation Support and Commissioning

4.6.1 An on-site equipment operation and configuration training should be included.

4.6.2 The DSM manufacturer shall perform the equipment commissioning and offer installation support.

APPENDIX G

MINIMUM TECHNICAL REQUIREMENTS FOR INTERCONNECTION OF PHOTOVOLTAIC (PV) FACILITIES

The proponent shall comply with the following minimum technical requirements:

1. VOLTAGE RIDE-THROUGH:

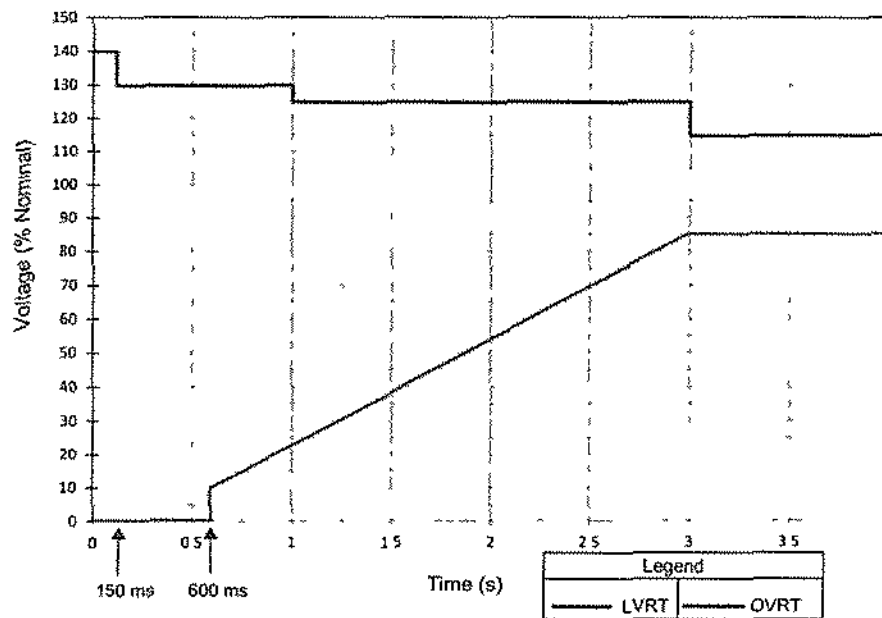


Figure 1 Voltage Ride-Through Requirements

a. PREPA's Low Voltage Ride-Through (LVRT) Requirements:

- From Figure 1, PREPA requires all generation to remain online and be able to ride-through three phase and single phase faults down to 0.0 per-unit (measured at the point of interconnection), for up to 600 ms.
- All generation remains online and operating during and after normally cleared faults on the point of interconnection.

- iii. All generation remains online and operating during backup-cleared faults on the point of interconnection.
- iv. During the low voltage fault conditions, the PV facility shall operate on reactive current injection mode. This mode of operation shall be implemented with a reactive current droop characteristic which shall have an adjustable slope from 1 to 5%. A dead band of 15 % is required.

b. PREPA's Overvoltage Ride-Through (OVRT) Requirements:

- i. PREPA requires all generation to remain online and able to ride-through symmetrical and asymmetrical overvoltage conditions specified by the following values illustrated in Figure 1:

Overvoltage (pu)	Minimum time to remain online
1.4 – 1.3	150 ms
1.3 – 1.25	1 s
1.25 – 1.15	3 s
1.15 or lower	indefinitely

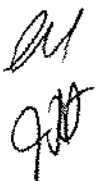
2. VOLTAGE REGULATION SYSTEM (VRS)

Constant voltage control shall be required. Photovoltaic System technologies in combination with Static Var Controls, such as Static Var Compensators (SVCs), STATCOMs and DSTATCOMs are acceptable options to comply with this requirement. A complete and detailed description of the VRS control strategy shall be submitted for evaluation.

- a) Photovoltaic Facilities (PVF) must have a continuously-variable, continuously-acting, closed loop control VRS; i.e. an equivalent to the Automatic Voltage Regulator in conventional machines.
- b) The VRS set-point shall be adjustable between 95% to 105% of rated voltage at the POI. The VRS set-point must also be adjustable by PREPA's Energy Control Center via SCADA.

- c) The VRS shall operate only in a voltage set point control mode. Controllers such as Power Factor or constant VAR are not permitted.
- d) The VRS controller regulation strategy shall be based on proportional plus integral (PI) control actions with parallel reactive droop compensation. The VRS Droop shall be adjustable from 0 to 10%.
- e) At zero percent (0%) droop, the VRS shall achieve a steady-state voltage regulation accuracy of $\pm 0.5\%$ of the controlled voltage at the POI.
- f) The VRS shall be calibrated such that a change in reactive power will achieve 95% of its final value no later than 1 second following a step change in voltage. The change in reactive power should not cause excessive voltage excursions or overshoot.
- g) The generator facility VRS must be in service at any time the PVF is electrically connected to the grid regardless of MW output from the PVF.
- h) The VRS dead band shall not exceed 0.1%.

3. REACTIVE POWER CAPABILITY AND MINIMUM POWER FACTOR REQUIREMENTS

The total power factor range shall be from 0.85 lagging to 0.85 leading at the point of interconnection (POI). The reactive power requirements provide flexibility for many types of technologies at the Renewable Energy Facility. The intent is that a PVF can ramp the reactive power from 0.85 lagging to 0.85 leading in a smooth continuous fashion at the POI.

The ± 0.90 power factor range should be dynamic and continuous at the point of interconnection (POI). This means that the PVF has to be able to respond to power system voltage fluctuations by continuously varying the reactive output of the plant within the specified limits. The previously established power factor dynamic range could be expanded if studies indicate that additional continuous, dynamic compensation is required. It is required that the PVF reactive capability meets ± 0.85 Power Factor (PF) range based on the PVF Aggregated MW Output, which is the maximum MVar capability corresponding to maximum MW Output. It is understood that positive (+) PF is where the PVF is producing MVar and negative (-) PF is where the PVF is absorbing MVar.

This requirement of MVar capability at maximum output shall be sustained throughout the complete range of operation of the PVF as established by Figure 2.

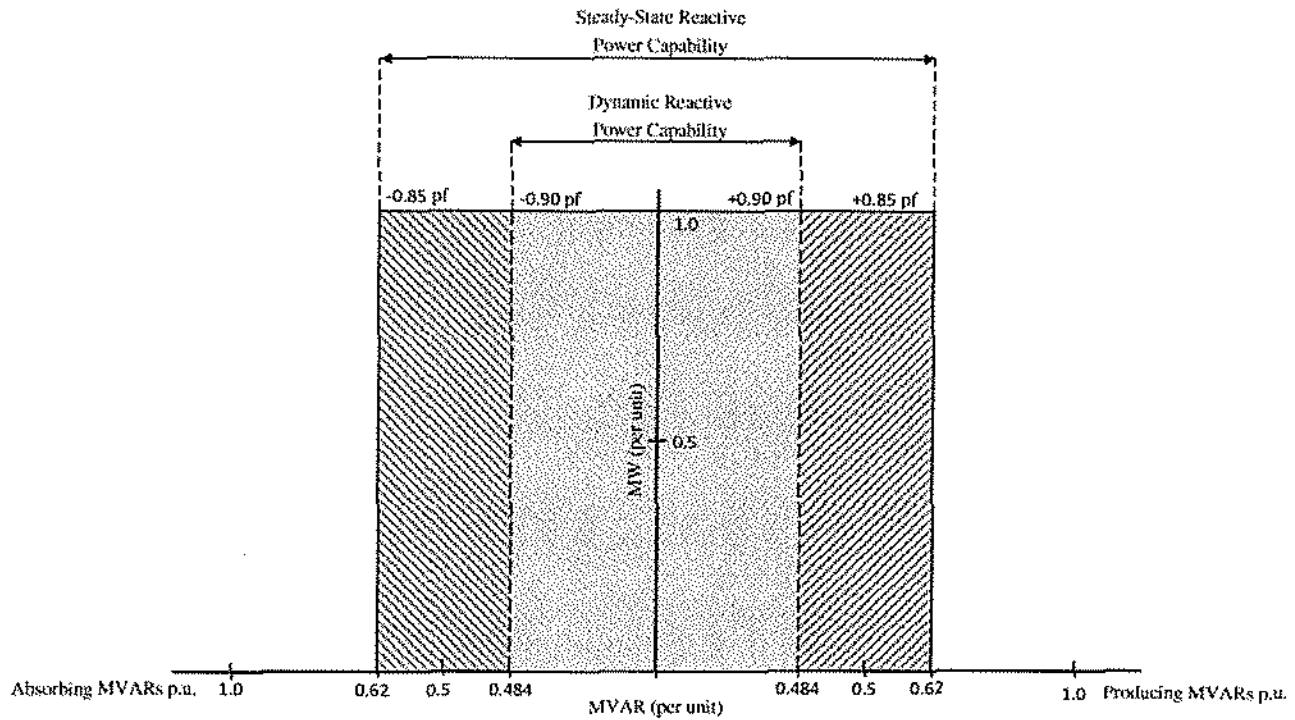


Figure 2 Reactive Power Capability Curve

4. SHORT CIRCUIT RATIO (SCR) REQUIREMENTS:

Short Circuit Ratio values (System Short Circuit MVA at POI/PV Facility MVA Capacity) under 5 shall not be permitted. The constructor shall be responsible for the installation of additional equipment, such as synchronous condensers, and controls necessary to comply with PREPA's minimum short circuit requirements.

5. FREQUENCY RIDE THROUGH (FRT):

- 57.5 - 61.5 Hz No tripping (continuous)
- 61.5 - 62.5 Hz 30 sec
- 56.5 - 57.5 Hz 10 sec
- < 56.5 or > 62.5 Hz Instantaneous trip

6. FREQUENCY RESPONSE/REGULATION:

PV facility shall provide an immediate real power primary frequency response, proportional to frequency deviations from scheduled frequency, similar to governor response. The rate of real power response to frequency deviations shall be similar to or more responsive than the droop characteristic of 5% used by conventional generators. PV facility shall have controls that provide both for down-regulation and up-regulation. PV technologies, in combination with energy storage systems such as, but not limited to BESS, flywheels and hybrid systems are acceptable options to comply with PREPA's frequency response and regulation requirements.

For small frequency deviations (for example less than 0.3 Hz), the PV facility response shall be proportional to the frequency deviation, based on the specified 5% droop characteristic. The frequency response dead band shall not exceed 0.02%. For large frequency deviations (for example in excess of 0.3 Hz), the PV facility shall provide an immediate real power primary frequency response of at least 10% of the maximum AC active power capacity (established in the contract). The time response (full 10% frequency response) shall be less than 1 second.

If energy storage systems are utilized to comply with the frequency regulation requirements, and during a disturbance the system frequency stays below 59.7 Hz, the facility frequency response shall be maintained for at least 9 minutes. After the ninth minute the real power primary frequency response shall not decrease at a ramp rate higher than 10% of the maximum AC active power capacity per minute.

The operational range of the frequency response and regulation system shall be from 10% to 100% of the maximum AC active power capacity (established in the contract). The PV facility power output at the POI shall never exceed the maximum AC active power (established in the contract).

7. RAMP RATE CONTROL:

Ramp Rate Control is required to smoothly transition from one output level to another. The PV facility shall be able to control the rate of change of power output during some circumstances, including but not limited to: (1) rate of increase of power, (2) rate of decrease of power, (3) rate of increase of power when a curtailment of power output is released; (4) rate of decrease in power when curtailment limit is engaged. A 10 % per minute rate (based on AC contracted capacity) limitation shall be enforced. This ramp rate limit applies both to the increase and decrease of power output and is independent of meteorological conditions. The ramp rate control tolerance shall be +10%.

8. POWER QUALITY REQUIREMENTS:

The developer shall address, in the design of their facilities potential sources and mitigation of power quality degradation prior to interconnection. Design considerations should include applicable standards including, but not limited to IEEE Standards 142, 519, 1100, 1159, and ANSI C84.1. Typical forms of power quality degradation include, but are not limited to voltage regulation, voltage unbalance, harmonic distortion, flicker, voltage sags/interruptions and transients.

9. SPECIAL PROTECTION SCHEMES:

PV facility shall provide adequate technology and implement special protection schemes as established by PREPA in coordination with power management requirements.

10. GENERAL INTERCONNECTION SUBSTATION CONFIGURATION:

An interconnecting generation producer must interconnect at an existing PREPA switchyard. The configuration requirements of the interconnection depend on where the physical interconnection is to occur and the performance of the system with the proposed interconnection. The interconnection must conform, at a minimum, to the original designed configuration of the switchyard. PREPA, at its sole discretion, may consider different configurations due to physical limitations at the site.

11. MODELING AND VALIDATION

The Contractor shall submit to PREPA a Siemens - PTI certified PSS/E mathematical model and data related to the proposed PV facility. When referred to the PV facility model, this shall include but is not limited to PV inverters, transformers, collector systems, plant controllers, control systems and any other equipment necessary to properly model the PV facility for both steady-state and dynamic simulation modules. It is required that the Contractor submits both an aggregate and detailed version of the PV facility model. At a later stage in the process, it is also required that the Contractor submits as-built PSS/E mathematical models of the PV Facility.

The Contractor shall be required to submit user manuals for both the PV inverter and the PV facility models including a complete and detailed description of the voltage regulation system (VRS) and frequency regulation system model implementation. The mathematical models shall be fully compatible with the latest and future versions of PSS/E. It is preferred that the models are PSS/E standard models. In the case that the Contractor submits user written models, the Contractor shall be required to keep these models current with the future versions of the PSS/E program until such time that PSS/E has implemented a standard model. The Contractor shall submit to PREPA an official report from Siemens - PTI that validates and certifies the required mathematical models, including subsequent revisions. The data and PSS/E model shall also be updated and officially certified according to PREPA requirements when final field adjustments and parameters measurements and field tests are performed to the facility by the contractor. The mathematical model (either PSS/E standard or user written model) of the PV facility shall be officially certified by Siemens - PTI before a specific and validated PSS/E mathematical model of the complete PV facility be submitted to PREPA. The Contractor shall be responsible of submitting the official reports and certifications from Siemens - PTI, otherwise the mathematical model shall not be considered valid.

The Contractor shall be responsible to submit Siemens - PTI certified PSSE mathematical models of any kind of compensation devices (ie. SVC, STATCOMs, DSTATCOMs, BESS, etc.) used on the PV facility. It is preferred that the models are standard models provided with PSS/E. In the case that the Contractor submits user written models, the PV facility Contractor shall be required to keep these models current with the future versions of the PSS/E program until such time that PSS/E has implemented a standard model. In its final form, the mathematical model shall be able to simulate each of the required control and

operational modes available for the compensation device and shall be compatible with the latest and future versions of PSSE. Final adjustments and parameters settings related with the control system commissioning process shall be incorporated to the PSSE mathematical model and tested accordingly by the PV facility Contractor and PREPA system study groups. The Contractor shall also perform on-site field tests for the identification, development, and validation of the dynamic mathematical models and parameters required by PREPA for any kind of compensation devices used at the PV facility. The mathematical models of the PV facility and its required compensation devices shall be officially certified by Siemens - PTI before a specific and validated PSS/E mathematical model of the complete PV facility be submitted to PREPA. The Contractor shall be responsible of submitting the official reports and certifications from Siemens - PTI, otherwise the mathematical models shall not be considered valid.

PV facility Owners that provide user written model(s) shall provide compiled code of the model and are responsible to maintain the user written model compatible with current and new releases of PSS/E until such time a standard model is provided. PREPA must be permitted by the PV facility Owner to make available PV Facility models if required to external consultants with an NDA in place.



12. TRANSIENT MATHEMATICAL MODEL

The Contractor shall be responsible of providing a detailed transient model of the PV facility and to show that it is capable of complying with PREPA's transient Minimum Technical Requirements.

13. DYNAMIC SYSTEM MONITORING EQUIPMENT

The developer of the PV facility shall be required to provide and install a dynamic system monitoring equipment that conforms to PREPA's specifications.

WRITTEN ACTION OF MANAGER

HORIZON ENERGY, LLC

The undersigned, being a Manager of Horizon Energy, LLC, a Delaware limited liability company (the "Company"), hereby takes the following actions as of and effective on May 16, 2014:

1. Pursuant to Paragraph 5 of the Amended and Restated Limited Liability Company Agreement (the "Amended LLC Agreement"), each of the Company's Manager, acting singly, has the full authority to manage the business and affairs of the Company and to do any and all acts necessary or convenient to or for the furtherance of the purposes for which the Company was formed.
2. The Manager desires to delegate certain powers and authority as set forth below and has determined that such delegation of powers and authority is in the best interest of the Company.
3. The Manager hereby authorizes Leslie Hufstetler, as authorized representative of the Company ("Authorized Representative"), to execute on behalf of the Company, on such terms and conditions the Company deems proper, any amendments to the *Power Purchase and Operating Agreement*, dated October 15, 2010, between Horizon Energy, Inc. (who assigned all its right, title and interest therein to Horizon Energy, LLC on July 8, 2011) and the Puerto Rico Electric Power Authority, regarding the sale of energy to the Puerto Rico Electric Power Authority from an up to 32-megawatt photovoltaic solar energy generating facility in the vicinity of Salinas, Puerto Rico owned by the Company.
4. In addition to all specific acts herein enumerated, the Manager hereby authorizes Authorized Representative to do all acts, necessary and proper to effectuate or carry out the purposes and intent of the foregoing action, including the execution of any and all documents, agreements, instruments, and/or certificates in connection therewith.
5. For the avoidance of doubt, this action does not authorize Authorized Representative to negotiate any contractual term or exercise discretion on behalf of the Company and the Company may rescind the powers conferred upon Authorized Representative at any time.
6. The Secretary of the Company is authorized, empowered and directed to file a signed copy of these written resolutions in the minute books of the Company.

IN WITNESS WHEREOF, the Manager has affixed his signature as of the date first written above.

By: Maurizio Grassi

Its: Manager