



***Appendix F  
Attachment A***

***O&M Scope of Work***

***for***

***2021 Request for Proposals***

***for***

***Renewable Resources***

***For Entergy Arkansas, LLC***

Entergy Arkansas, LLC

August 3, 2021

**Appendix F – Operations & Maintenance Scope of Work  
Attachment A**

**A. GENERAL**

This Attachment A sets forth services that are included in the scope of Services to be performed by O&M Contractor and its Subcontractors, excluding T&M Services and Excluded Services. The included Services shall be subject to the standards of performance and other applicable provisions of the Agreement.

**B. PROJECT MAINTENANCE**

- 1. Scheduled Maintenance.** O&M Contractor shall perform Scheduled Maintenance and shall remedy any issues identified during inspection, and testing for the Covered Equipment in accordance with the Annual Operating Plan, the O&M Manuals, Prudent Industry Practices, Energy Storage Industry Standards, the Project Hardware Warranties, the BOT Warranty, Applicable Law, Permits, the Project Agreements and the other requirements of this Agreement and shall supply or provide all equipment, materials, labor, tools and Consumables required for the proper performance of such Scheduled Maintenance, inspections and testing.
- 2. Unscheduled Maintenance.** Without limiting Seller’s obligations under the BOT Warranty, O&M Contractor shall provide all labor, tools and equipment required to perform unscheduled maintenance for the Covered Equipment, as requested by the Owner, required to repair, correct and otherwise remedy any defect, deficiency or failure in the Covered Equipment (including any such conditions identified as a result of inspections performed under Section C below) in accordance with the O&M Manuals, Prudent Industry Practices, Energy Storage Industry Standards, the Project Hardware Warranties, the BOT Warranty, Applicable Law, Permits, the Project Agreements and the other requirements of the Agreement; provided that any replacement parts or other materials required to repair or replace such defect, deficiency or failure in the Covered Equipment shall to the extent not covered by any Project Hardware Warranty or BOT Warranty be provided on a time and materials basis. Without limiting the foregoing, the O&M Contractor shall (i) provide all labor, specialist Subcontractor support, badging access for the specialist Subcontractor support, equipment and tooling as necessary to complete the unscheduled maintenance activities on the Covered Equipment; (ii) arrange for any specialty equipment or tools, technical support and/or third party electrical or other Subcontractors needed to properly perform such unscheduled maintenance; and (iii) administrate the procurement, supply and installation of any Spare Parts, Consumables or other items required for such unscheduled maintenance; provided that the foregoing shall not limit O&M Contractor’s right to utilize Owner’s Spare Parts inventory in accordance with the requirements of Section 4.4(a) of the Agreement.
- 3.** All Scheduled Maintenance and unscheduled maintenance shall be performed in a safe and prudent manner in accordance with lock-out/tag-out procedures, the Site security and safety procedures set forth in Exhibit J, Prudent Industry Practices, Energy Storage Industry Standards, Applicable Law and the Permits.

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**C. INSPECTIONS**

- 1. Module.** O&M Contractor shall inspect modules for: cracks, discoloration, broken glass, holes, bubbling, delamination, environmental seal deterioration, frame damage, excessive soiling, cord-plate separation/arching, position movement, loose or disconnected wires, proper panel affixation in the tracker or racking system, condition of electrical, grounding and mechanical connections (which should be clean, secure, undamaged, and free of corrosion), animal damage/nesting and vegetation overgrowth causing shading. Modules that are suspected of underperformance shall be inspected using infrared thermography and the results shall be included in the next monthly report.
- 2. Tracker.** O&M Contractor shall inspect trackers for proper position (at time of day compared to other trackers), loose/worn joints/couplings/bushings, signs of cracked/damaged drive components, obstructions to normal travel/ movement, proper operation and mounting of any sensors and masts, including calibration of solar inclinometers. O&M Contractor shall perform general maintenance, alignment, lubrication, minor repairs in accordance with the original equipment manufacturer's requirements. O&M Contractor shall remove any bird's nests in accordance with environmental policies.
- 3. Racking System:** O&M Contractor shall inspect all structural components for signs of corrosion, grounding continuity between frames and racking structure, stability of the racking system (soil/erosion issues), or any other damage that could threaten or weaken the racking foundation system. O&M Contractor will remove any bird's nests in accordance with environmental policies.
- 4. String and Harness.** O&M Contractor shall visually inspect all string level wiring and wire management for: strained wires, disconnected/separated connectors, crimped wire radii, unsecured wire harnesses/clips, animal damage/nesting, and grounding. O&M Contractor shall verify that AC and DC disconnects are free of damage, corrosion or arc evidence and open and close freely. O&M Contractor shall test each string for proper open circuit voltage and proper operating current during normal inverter operations. O&M Contractor shall inspect all conduit to ensure it is structurally supported and secure and that the points where any array wiring enters conduit are secure, properly sealed to prevent the entry of precipitation and moisture, and free of abrasion, breaks or gaps on or in wire insulation. O&M Contractor shall maintain and repair string and harness.
- 5. DC Combiner Box.** O&M Contractor shall perform a physical inspection of enclosure latches, proper disconnect operation and environmental seals. Visual inspection of all wire terminations for torque mark alignment, exposed wires, signs of arching, and pull tests of clamped wire ends. If underperformance is suspected, O&M Contractor shall use infrared thermography or clamp-on ampere testing for current flow across all fuses for advanced diagnosis and include the results in the next monthly report.
- 6. PV Plant Inverter.** Visual inspection of exterior cabinet, ventilation systems and insulated surfaces for: obstruction to ventilation (in/out flow) corrosion and environmental seals,

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including cleaning any dirt or dust accumulation. Perform infrared scans or torque tests of the inverters. Physical inspection of IGBTs and internal control boards (for discoloration), internal filters (including cleaning/replacing filters and air inlets), capacitors (for bulging, leaking or discoloration), surge suppressors, and wire terminations for: torque mark alignment, exposed wires, pull tests, signs of overheating, and any other checks recommended by the manufacturer, and all terminals, cables, fuses and breakers. Inspect and conduct functionality tests of cooling fans. Remove dust, sand, loose metal parts (e.g., screws, cable sections), and debris from inverter cabinets, including vacuum cleaning as necessary. Check operation of status lights, coolant levels (and top off if necessary) and air filters (and replace if necessary). Ensure cabinets are properly sealed, including inspection of the condition and functionality of hinges and latches. Inspecting air entrance grills for obstructions/proper functioning of grills, meshes and air filters, and in the case of filter obstructions, cleaning with a vacuum or air compressor or replacing as necessary. Inspection of air exit grills (with overpressure sheets) for blockages and tilt impediments. Check operation of fans and presence of noise or vibration. Check the operation of all safety devices, including E-Stop circuit and GFDI. Check nuts, bolts, screws and connectors for tightness and heating discoloration. Performing any additional analysis or diagnostic activity recommended by the original equipment manufacturer. O&M Contractor shall use infrared thermography to inspect inverters during operation when irradiance is above 400 W/m<sup>2</sup>. O&M Contractor shall remedy any issues identified during the inspections.

7. **BESS Inverter.** Visual inspection of exterior cabinet, ventilation systems and insulated surfaces for: obstruction to ventilation (in/out flow) corrosion and environmental seals, including cleaning any dirt or dust accumulation. Perform infrared scans or torque tests of the inverters. Physical inspection of IGBTs and internal control boards (for discoloration), internal filters (including cleaning/replacing filters and air inlets), capacitors (for bulging, leaking or discoloration), surge suppressors, and wire terminations for: torque mark alignment, exposed wires, pull tests, signs of overheating, and any other checks recommended by the manufacturer, and all terminals, cables, fuses and breakers. Inspect and conduct functionality tests of cooling fans. Remove dust, sand, loose metal parts (e.g., screws, cable sections), and debris from inverter cabinets, including vacuum cleaning as necessary. Check operation of status lights, coolant levels (and top off if necessary) and air filters (and replace if necessary). Ensure cabinets are properly sealed, including inspection of the condition and functionality of hinges and latches. Inspecting air entrance grills for obstructions/proper functioning of grills, meshes and air filters, and in the case of filter obstructions, cleaning with a vacuum or air compressor or replacing as necessary. Inspection of air exit grills (with overpressure sheets) for blockages and tilt impediments. Check operation of fans and presence of noise or vibration. Check the operation of all safety devices, including E-Stop circuit and GFDI. Check nuts, bolts, screws and connectors for tightness and heating discoloration. Performing any additional analysis or diagnostic activity recommended by the original equipment manufacturer. O&M Contractor shall remedy any issues identified during the inspections.
  
8. **PV Plant Medium Voltage Transformer.** O&M Contractor shall visually inspect the exterior cabinet for obstruction to heat-sink fins, corrosion, leaking, and ensure the oil

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gauges are functioning properly (level, temperature, pressure) and clean the gauges, and visually inspect the foundation condition, valves, stoppers and oil pipelines. O&M Contractor shall apply painting where necessary, tighten all vibration parts, check radiator valves operation, and clean the transformer mask. O&M Contractor shall fill the transformer with mineral oil if the level is under the normal level for a 25° C temperature or less. O&M Contractor shall conduct the following functional tests of oil samples: DGA Dissolved Gas Analysis (ANSI C57-104) and Water Content (ASTM D-1533).

- 9. BESS Medium Voltage Transformer.** O&M Contractor shall visually inspect the exterior cabinet for obstruction to heat-sink fins, corrosion, leaking, and ensure the oil gauges are functioning properly (level, temperature, pressure) and clean the gauges, and visually inspect the foundation condition, valves, stoppers and oil pipelines. O&M Contractor shall apply painting where necessary, tighten all vibration parts, check radiator valves operation, and clean the transformer mask. O&M Contractor shall fill the transformer with mineral oil if the level is under the normal level for a 25° C temperature or less. O&M Contractor shall perform the following functional tests of oil samples: DGA Dissolved Gas Analysis (ANSI C57-104) and Water Content (ASTM D-1533).
- 10. Battery Interface Compartment.** O&M Contractor shall visually inspect the integrity of the battery interface compartment, all electrical connections and wiring, the cabinet, ventilation system, insulated surfaces, and all terminals and cables, including for any corrosion, and clean/dust as necessary. O&M Contractor shall check fan operation for presence of noise or vibration, and shall check nuts, bolts, screws, and connectors for tightness and heat discoloration, to verify that torque markings have not changed. O&M Contractor shall retorque DC high power connections, and thermal scan power connections. O&M Contractor shall perform contact inspections of breakers and check DC output voltage. O&M Contractor shall test all connections on the AC Grid System E – Stop Circuit, and manually check functionality of all red Emergency Stop switches.
- 11. BESS HVAC.** O&M Contractors shall inspect and clean the BESS HVAC, including for dust connections with the unit, unit air leaks, and bearing lubrications. O&M Contractor shall clean, blow out condensate drain from, and check refrigerant levels and leak line insulation of the HVAC coil, and clean the HVAC coil pan. O&M Contractor shall inspect and clean the HVAC heater and control, recalibrate the HVAC control, and check pressure and oil levels and measure voltage and current in the HVAC compressor.
- 12. Disconnect Switch.** O&M Contractor shall visually inspect enclosure latches, all wire terminations for torque mark alignment, exposed wires, signs of arching, and environmental seals. O&M Contractor shall verify proper disconnect operation, perform pull tests of clamped wire ends, and use either infrared thermography or clamp-on ampere test for diagnosis. Any malfunction will trigger a work order to remediate.
- 13. BESS - Short Circuits.** O&M Contractor shall maintain relays, circuit breakers and all other devices necessary to remove any fault contribution of the BESS to any short circuit occurring on the applicable distribution system, including a disconnecting device or switch, with load-interrupting capability located between the BESS and such distribution system.

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14. **BESS.** O&M Contractor shall visually inspect the BESS, including the BMS, cables, and module mounts for mechanical integrity and to confirm that such equipment is in line with the manufacturer’s maintenance schedule.
15. **Site Data Acquisition and Monitoring System.** O&M Contractor’s remote operating center (ROC) shall have full compatibility, and be able to interface directly and continuously, with the Project’s data acquisition solution(s) installed by or for Seller under the BOT Agreement. O&M Contractor shall check all sensors, electronics and other monitoring and data acquisition and control equipment for functionality, performance, signal strength and connections and ensure that data and information is mapped correctly. O&M Contractor will inspect all security systems to confirm such systems are functioning properly.
16. **Enclosure.** Exterior visual inspection of any free-standing or walk-in enclosures on the site (storage or communication sheds & inverter shelters) for signs of secure and intact doors and windows, signs of forced entry/vandalism, animal nesting or damage, weather appropriate roof integrity, erosion that may compromise foundation/supports, obstruction to any ventilation (in/out flow). O&M Contractor shall remedy any issues identified during the inspections.
17. **AC Feeder.** Physical inspection of all wire terminations for torque mark alignment, exposed wires and pull tests of clamped wire ends before and after seasonal temperature swings. All AC Feeders that are identified to be underperforming will be tested with a megohmmeter for grounds and shorts. O&M Contractor shall remedy any issues identified during the inspections.
18. **Module Temperature Sensor.** O&M Contractor shall perform a visual inspection of the module surface temperature mounting to ensure it is seated firmly against the contact surface of the module, and in the case where tape or adhesive is used, that the component is free of defects that allow the sensor to be exposed to the environment. O&M Contractor shall also inspect the sensor wiring and wire management including proper wire termination at the data collection point. O&M Contractor shall remedy any issues identified during the inspections.
19. **Meteorological Station.** Visual inspection of the sensor cluster and mounting to ensure secure mounting, free of debris or sensor obstruction. Verify calibration logs and that data collected is reasonable and consistent with like sensors around the Project. Annually (at least) re-calibrate and re-certify weather station units per original equipment manufacturer’s instructions/requirements and Prudent Industry Practices. Keep pyranometers clean, level and free of debris (including the glass domes, which must be kept free of dirt, dust, debris, including bird droppings) and remove accumulated dirt, dust, debris (including bird droppings), and the like as necessary. Confirm the anemometers are properly operating and functioning. O&M Contractor shall remedy any issues identified during the inspections.

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- 20. Driveways, Interior Roads and Right-of-Way.** O&M Contractor shall visually inspect driveway, interior dirt roads, and rights-of-way for obstructions (including heavy snow), degradation of the route (due to erosion or heavy traffic), and defects such as pot holes that would prevent traffic flow for maintenance equipment, vehicles, or persons. Minor repairs shall be remediated by the O&M Contractor. For significant erosion control issues, notification will be made to the Owner and a plan for remediation will be developed (which remedy may be performed as **Unscheduled Maintenance** or **T&M Services**).
- 21. Perimeter.** Visual inspection of perimeter fence for the purpose of identifying secure posts, gates, signs of breach (under, over or through), vegetation growth that: covers warning/information signs, or obstructs visual inspection (inside or outside) of the perimeter. In-plain-sight inspection of the Project, from the perimeter, will be performed to identify any large vegetation that may be shading the modules.
- 22. Inspection Frequency.** Inspections will occur per the original equipment manufacturer’s warranty requirements. Any circumstances that prevent the inspections from completing in a timely manner shall be noted in the next monthly report. O&M Contractor shall perform the inspections in Section C consistent with the following expectations:<sup>1</sup>

Project Item	Frequency
Modules	2% weekly, all annually
Tracker	2% weekly, all annually
String and Harness	2% weekly, all annually
DC Combiner Box	8% monthly, all annually
Inverter	all quarterly, 4 times annually
Medium Voltage Transformer	all quarterly, 4 times annually
Disconnect Switch	8% monthly, all annually
Site Data Acquisition and Monitoring System	all weekly, 50 times annually
Enclosures	all quarterly, 4 times annually
AC Feeder	all annually
Module Temperature Sensor	all weekly, 50 times annually
Meteorological Station	all weekly, 50 times annually
Driveway / Roads	All monthly, 12 times annually
Perimeter	All monthly, 12 times annually
Transformers	All annually
Battery interface compartment	Annually
BESS HVAC	Annually
Battery	Annually

At least annually, O&M Contractor shall utilize drones to perform an aerial thermographic inspection of the Project to identify faults in junction boxes, inverter connections, inverter components, issues with modules or panels and other defects or deficiencies in the Project.

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<sup>1</sup> **NTD:** To be updated to align with OEM requirements.

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**D. PROJECT OPERATIONS**

1. **General.** O&M Contractor shall remotely monitor the performance of the Project on a 24 hour/7 days a week basis through a combination of a staffed operations center and automated alerts through software algorithms and fault detection.
2. **Continuous System Monitoring and Notification of Outages.** O&M Contractor shall monitor the SCADA System on a 24 hour/7 days a week basis, provide alarm management and response, outage management and coordination, energy and availability forecasting, and shall operate Project control systems, each in accordance with the provisions below.
3. **Respond to Alerts, Alarms, and Faults.** O&M Contractor shall promptly respond to all alarms or System indicators to maintain optimal System performance. O&M Contractor may utilize remote reset capability of the plant, so long as such procedures align with the site safety policies, Prudent Industry Practices, Applicable Law (including any applicable MISO Rules and the MISO Tariff) and the Permits.
4. **Provision of Performance Information to Owner.** O&M Contractor shall provide Owner a website/portal to allow for Owner to access system Project performance information, including, at a minimum, the following:
  - a. 24/7 data monitoring;
  - b. Project level performance and diagnostics;
  - c. inverter performance and diagnostics;
  - d. inverter input level diagnostics;
  - e. calculated soiling losses (if soiling instrumentation is present);
  - f. calculated metrics on Availability;
  - g. Project performance history;
  - h. downloadable data sets;
5. **Owner Notifications.** O&M Contractor shall notify Owner's Representative by email when any of the following events are observed:
  - a. a material reduction of the PV Plant's reactive power capability;
  - b. loss of PV Plant capacity of greater than 5% MW<sub>AC</sub> off line;
  - c. a loss of telemetry to the affected Transmission Operator, Energy Buyer, or Balancing Authority.
6. **Outage Management and Coordination.** O&M Contractor shall respond to requests from Owner, Governmental Authorities, or the Transmission Owner to:

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- a. curtail active power, or set a temporary limit to power output;
  - b. increase active power production (when applicable and possible);
  - c. change the inverter power factors to inject or absorb VARs at the point of interconnection for supporting voltage regulation.
7. **Data Storage.** O&M Contractor shall provide data storage for operations data relating to the Project, as well as an operations log and related services. O&M Contractor shall monitor and record the following data points at a frequency of 15-minute intervals or less:
- a. Inverter Data
    - i. Faults
    - ii. Individual inverter module DC input voltages
    - iii. Individual inverter module DC input currents
    - iv. Output current through lines A, B, C
    - v. Output voltage of lines A, B, C
    - vi. Power factor
    - vii. kWh produced (daily)
  - b. Meteorological Station Data
    - i. Irradiance
    - ii. Wind velocity and direction
    - iii. Ambient temperature
    - iv. Rainfall levels
    - v. Atmospheric pressure
  - c. Soiling Station Module Data
    - i. Calculated irradiance from the “clean” module
    - ii. Power Output
    - iii. Current and Voltage Curve Data
    - iv. Module temperatures
8. **Environmental Activities.** O&M Contractor shall be responsible for the following environmental activities:
- a. Conduct inspections and/or remote monitoring as necessary to implement the requirements of the Spill Prevention, Control, and Countermeasure (SPCC) plan for the site.

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- b. Properly manage and store any universal or hazardous waste generated at the site, including any damaged or spent solar panels, in accordance with all applicable environmental regulatory requirements.
- c. Conduct periodic inspections of any waste storage areas in accordance with applicable environmental regulatory requirements.
- d. If applicable, conduct periodic inspections as necessary to implement the requirements of any operational stormwater permits.
- e. Maintain records of waste accumulation and shipment from the site.
- f. Maintain records of any environmental inspections conducted at the site.
- g. If applicable, due to the presence of hazardous chemicals at the site above a reportable quantity, maintain an inventory of the quantity and storage location of any such chemicals and prepare and submit an annual Tier II report for the site.

**9. Other Operations Activities.** O&M Contractor shall also be responsible for the following:

- a. Management of the water supply (including any water consumption as a result of T&M Services such as module washing or vegetation treatments); provided, however, Owner shall reimburse O&M Contractor for transportation and usage fees.
- b. Management of site ingress and egress of personnel at the gate to the Site, including logging all Site visitors (name, time in, time out, purpose, and whom is represented); provided, however, that Owner shall be responsible for additional site security that has been requested by Owner.
- c. If a soiling monitoring station is present, washing the “clean” module on a weekly basis, and taking reference photographs periodically of the two modules at the station for a periodic visual comparison;
- d. Washing the clear dome of each irradiance sensor on a weekly basis. The glass dome or window shall be cleaned per the manufacturer’s recommended procedure even if there is no visual sign of soiling or debris;
- e. Calibration and leveling of the irradiance sensors per the manufacturer’s recommendation;
- f. Supporting the insurance claims process when damage and/or malfunctioning components lead to a property insurance claim

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**E. WARRANTY MANAGEMENT AND SUPPORT**

O&M Contractor, as agent for Owner, shall be responsible for pursuing compliance of all performance obligations owed to Owner pursuant to the Project Hardware Warranties and BOT Warranty. O&M Contractor's obligations for pursuing such compliance are limited to (a) labor for removal and replacement of hardware and equipment, as well as labor for preparing any defective hardware and equipment that needs to be shipped back to an OEM (shipping costs are the responsibility of the Owner after the term of the BOT Warranty) (b) timely notification to the warranty provider of all such warranty claims pursuant to the terms of such Project Hardware Warranties and BOT Warranty; (c) providing reasonable information to such warranty provider relating to the nature of such warranty claim; (d) providing notice to Owner of such claim and requesting Owner support when necessary; provided that the foregoing shall not limit O&M Contractor's obligation to perform any unscheduled maintenance required with respect to any of the Covered Equipment; and (e) providing all documentation for warranty administration to the Owner for the Owner's records.

For the avoidance of doubt, O&M Contractor shall not be responsible for (1) the performance or failure to perform by any provider of any warranty; (2) any act or omission of any provider of any warranty; provided that the foregoing shall not limit Seller's obligations under the BOT Warranty or the Warranty under this Agreement.

**F. SPARE PARTS INVENTORY MANAGEMENT**

1. O&M Contractor shall manage the Spare Parts Inventory in accordance with Section 4.4(a) of the Agreement, including storage, organization, and inventory tracking.
2. O&M Contractor shall provide an inventory report to the Owner on a monthly basis.
3. O&M Contractor shall review and provide recommendations to Spare Parts inventory on an annual basis.

**G. PERFORMANCE ENGINEERING SERVICES**

O&M Contractor shall provide the following performance engineering services:

1. Evaluation of Project performance versus models and predictions;
2. Identification of performance issues and actions;
3. Issuing diagnosis orders to targeted sections of the Project where underperforming components are suspected; and
4. Issuing updated procedures and protocols to maximize plant performance.
5. Guaranteed Performance metrics as defined in Exhibit G-1.
6. Guaranteed BESS Availability and Guaranteed BESS RT Efficiency metrics as defined in Exhibit G-2.

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**H. REPORTING**

O&M Contractor shall be responsible for the performance reporting for the Project and shall provide such reports in the form of monthly reports (“**Monthly Reports**”) and annual reports (“**Annual Reports**”).

1. **Monthly Report.** O&M Contractor shall prepare and provide Monthly reports after performing Project maintenance, inspections and operations including the following information:
  - a. monthly performance reports;
  - b. any safety related incidents on the project site;
  - c. any physical security incidents on the project site;
  - d. any cyber security incidents;
  - e. monthly and year-to-date (“**YTD**”) insolation;
  - f. monthly and YTD safety issues;
  - g. monthly and YTD environmental issues (including any Releases of Hazardous Materials or material discoveries);
  - h. summary of work orders with status updates;
  - i. list of maintenance activities performed and a summary of resolution for any services completed including completed work orders;
  - j. Measured Performance of the PV Plant;
  - k. BESS Availability and BESS RT Efficiency;
  - l. soiling levels analysis, including module washing recommendations;
  - m. Spare Parts Inventory status;
  - n. failure and forced outage analysis reports;
  - o. as applicable, any detailed reports from the visual inspections;
  - p. summary of Project conditions and performance (including list of outstanding system conditions, recommended unscheduled maintenance and other recommended actions); and

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- q. relevant alarm logs.
- 2. **Annual Report.** O&M Contractor shall prepare and provide an Annual Report, which shall include a summary of the Monthly Reports along with annual totals for the Performance Metrics as defined in Exhibit G-1, the BESS Availability as defined in Exhibit G-2 and the BESS RT Efficiency as defined in Exhibit G-2.

**I. PERFORMANCE METRICS**

O&M Contractor shall be responsible for calculating key performance indicators for the Project, consistent with the following definitions and calculations. The metrics, when compiled for a period of at least one (1) month, shall be published in the next Monthly Report and Annual Report, and through the O&M Contractor’s Asset Management Portal, for Owner’s continuous access. The Performance Metrics are defined in Exhibit G-1 and Exhibit G-2. Monthly Reports shall be published no later than ten (10) Business Days after the end of the month.

**Disparity of Like Instruments.** O&M Contractor shall identify when like instruments provide disparate data. An example of this would be two separate plane-of-array pyranometers giving significantly different values. In such cases, one instrument shall be used in performance calculations, and the other ignored.

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## EXHIBIT A-2

### T&M SERVICES

#### A. GENERAL

This Exhibit A-2 set forth the services constituting the “**Time and Material (T&M) Services.**” Notwithstanding the inclusion of T&M Services in this Exhibit A-2, such T&M Services shall not become part of the Services except pursuant to approval in the Annual Operating Plan, permitted pursuant to Section 4.4(d) of the Agreement or through a Services Change Order signed by both Parties. This list of T&M Services is not an exhaustive list, and there may be other services or activities required to operate or maintain the Project that are not contemplated therein.

#### B. T&M SERVICES

Subject to the immediately preceding Section A, the T&M Services shall include the following:

1. Restorative earthwork or civil repairs to roads, grading, or drainage and hydrology features
2. training of Owner or Owner’s subsequent O&M Contractor;
3. mowing, aesthetic weed abatement or landscaping, which should be provided for a fixed fee of \$[\_\_\_\_\_] each time required; or provided for a fee of \$[\_\_\_\_\_] /acre.
4. module washing or brushing, which should be provided for a fixed fee of \$[\_\_\_\_\_] each time required;
5. Spare Parts to the extent not covered by the Project Hardware Warranty, BOT Warranty or Warranty under this Agreement;
6. snow removal other than around the operation and maintenance building or site entrance;
7. installation, maintenance, upgrades and monthly service fees for the data communications service to the Site for purposes of remote monitoring;
8. SCADA or software upgrades;
9. maintenance or calibration of any equipment at the Site that is owned by the Transmission Owner, or any other third party;
10. oversight of security services that Owner may employ to protect the Project and Project equipment from theft, vandalism, or fire;
11. capacity testing and reporting for the PV Plant or capacity augmentation of the PV Plant;
12. maintenance of security equipment; and
13. maintenance of the high voltage transformer in the Project substation or other work on the high-side of such transformer.

**C. COMPENSATION FOR T&M SERVICES**

The Parties agree that T&M Services are not included in the Fixed Fees and, unless otherwise set forth in a Services Change Order executed by both Parties, Owner shall compensate O&M Contractor for its performance of T&M Services in accordance with Section 6 of the Agreement. Any T&M Services, and any other services or activities required to operate or maintain the Project, that are not required to be performed by O&M Contractor under this Agreement shall be the responsibility of the Owner.

**D. RATE SHEET**

The parties agree that O&M Contractor and O&M Contractor’s subcontractors will abide by the appropriate restrictions set forth in labor agreements related to the Project and/or Site. To the extent that Owner is compensating O&M Contractor for T&M Services based on Actual Costs, the following labor rates shall apply to labor costs:<sup>2</sup>


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<sup>2</sup> O&M Contractor to provide rate sheet.

## **EXHIBIT A-3**

### **EXCLUDED SERVICES**

The Parties acknowledge that neither the Services, nor the T&M Services, shall include the services listed in this Exhibit A-3 (the “**Excluded Services**”). For avoidance of doubt, this list of Excluded Services is not an exhaustive list, as any and all services not expressly included in Exhibits A-1 and A-2 shall be deemed excluded Services:

1. Provision of back-feed power or utilities of any type including water supply or sewage.
2. Maintenance or repair of any generation tie line or other electrical interconnection, distribution or transmission equipment located on the other side of the Project point of interconnection with the electric grid.



## EXHIBIT A-4

### COVERED EQUIPMENT

Covered Equipment	Scheduled Maintenance	Unscheduled Maintenance	T&M Services
PV Modules	Periodic Inspection	Algorithm-triggered performance diagnosis, replace from Owner's spare inventory or warranty fulfillment	Contractor supplied module replacement; packing, shipping, and disposal (50 or more); module washing
Module Support Structure: Posts, sub-structure frames, and mounting systems	Periodic inspection	Repair or replace	
Tracker: Structural components, motors, actuators and power and control wiring	Scheduled Maintenance according to manufacturer recommendations	Algorithm-triggered performance diagnosis, Repair or replace	Upgrading control system or communications
DC Harness, Cabling: DC harnesses, wiring, grounding, fusing, and connectors comprising cable and/or wire to and from combiner boxes	Periodic inspection and testing to ensure proper operation	Algorithm-triggered performance diagnosis, Repair or replace	
Combiner Box: Enclosures, power blocks, terminal strips, DIN rails, grounding bus, back panel and fuses	Inspect or test to ensure proper operation	Algorithm-triggered performance diagnosis, Repair or replace	
Meteorological Station: Station structure, power and control wiring. Irradiance, temperature, humidity, wind, pressure and rainfall sensors	Scheduled Maintenance and recalibration in accordance with manufacturers recommendations, pyranometer cleaning	Repair or replace	
PCS Enclosure: Exhaust fans, louvers and actuators	Inspect and clean interior	Repair or replace	Civil and foundation work
PCS HVAC (if equipped): Fans, compressors, filters, thermostats, timers, power and control wiring	Scheduled Maintenance according to manufacturer recommendations	Alarm-triggered work orders, Repair or replace	
BESS HVAC: Fans, compressors, filters, thermostats, timers, power and control wiring	Scheduled Maintenance according to manufacturer recommendations	Alarm-triggered work orders, Repair or replace	
PV Plant Inverter: Inverters, cabinet, doors, and seals	Scheduled Maintenance according to manufacturer recommendations	Algorithm-triggered performance diagnosis, Repair or replace	
BESS Inverter: Inverters, cabinet, doors, and seals	Scheduled Maintenance according to manufacturer recommendations	Algorithm-triggered performance diagnosis, Repair or replace	
PV Plant Medium Voltage Transformer: Transformers, elbows, gauges, drain and test valves	Scheduled Maintenance according to manufacturer recommendations	Algorithm-triggered performance diagnosis, Repair or replace	Oil Testing and Analysis
BESS Medium Voltage Transformer: Transformers, elbows, gauges, drain and test valves	Scheduled Maintenance according to manufacturer recommendations	Algorithm-triggered performance diagnosis, Repair or replace	
Battery Interface Compartment	Scheduled Maintenance according to manufacturer recommendations	Algorithm-triggered performance diagnosis, Repair or replace	
BESS: BMS, cables, module mounts	Scheduled Maintenance according to manufacturer recommendations	Algorithm-triggered performance diagnosis, Repair or replace	
Grounding System: Ground wire, test wells, surge protection and grounding plates	Inspect or test to ensure proper operation	Repair or replace	
Fire Alarms: Wiring and devices associated with the smoke/fire alarm(s)	Scheduled Maintenance according to manufacturer recommendations	Repair or replace	

AC Cable and Wiring: AC cables from the inverters to the medium voltage transformers and to the sectionalizing cabinet. AC cables serving ancillary equipment and power panels	Inspect or test to ensure proper operation	Repair or replace	
SCADA System: Panel power and wiring, internal structural and support components, power supply, interface, logic and controller devices, monitoring devices and sensors	Inspect or test to ensure proper operation	Repair or replace	Upgrading SCADA system or software
Project Meters and telemetry	Scheduled Maintenance according to manufacturer recommendations	Repair or replace (Project items)	Repair or replace (Substation Items)