



REQUEST FOR QUOTATION (RFQ)

SPECIFICATION/ SCOPE OF WORK

Solar Plant – Wolmerton

- **SCOPE OF WORKS**

Rehabilitation of Wolmerton Solar plant entailing Supply, Install, Test and commissioning of Solar components including maintenance.

Assessment

- A preliminary site assessment to check the status of the plant. A report with all findings (if any), and cost of reparation works (if necessary) will be issued two weeks after receiving the notice to proceed.

Main activities during this assessment will be:

- Infra-red scanning to identify potential hot spots on the solar PV array, Isolate PV Panels damaged and restringing.
- Infra-red scanning to identify potential hot spots on the AC and DC connections.
- Assess H&S requirements for future ongoing maintenance tasks (Permanent Safety lines, cat ladders...)
- Assess IT network status and potential improvements.
- Set up Solar-Log portal and hosting services to allow remote monitoring for one year.
- Check torque of all critical clamps and screws and make right any trunking that may have come loose
- Check all inverter readings for four weeks and compare results with expected production.
- Faulty inverters removal and manufacturer's warranties claims lodged
- Replace any fuses that have blown

General

- Clean all panels.
- Cut back any bush that could be creating shading.
- provide general spares part list and material for client safe keeping.
- Install a monitoring screen in PRASA main office and link it to the plant management system.

- After the above task performed, contractor will be able to offer PRASA the possibility of conducting all routine works necessary works to keep the PV plant in good condition and performance which will include:
 - Twice a week remote data analysis. Warnings & findings reports issued to maintenance team.
 - Follow-up on corrective actions performed by maintenance teams

Performance report services:

- Full performance report to be sent every third month with;
- Performance analysis, energy expectations, comparisons and deviations
- Plant availability ratio analysis and preventive maintenance recommendations to maintenance team if required.

Annual report

- Maintenance activities as per program, preventive and corrective actions record and follow up, (see below)
- Site (Quarterly)
- Cleanliness (accumulation of debris around and or under array): Clean site as required.
- Inverters (Quarterly)
- Check fan and cooling elements: Clean them, if necessary, with compressed air
- Infrared Scanning - DC and AC Connections. Repair hot spots if necessary.
- PV modules (Quarterly)
- Verify cleanliness (dust or fungus) Clean if necessary.
- PV modules (Yearly)

Check for visual defects including.

- Fractures
 - Browning
 - moisture penetration
 - frame corrosion
- Wiring installation (5 years)
- Verify mechanical integrity of conduits: Any damaged conduit should be replaced.
- Verify insulation integrity of cables installed without conduit: Any damaged cable should be replaced.
- Wiring Installation (Yearly)
- **Check junction boxes for:**

- tightness of connections
 - water accumulation/build-up
 - integrity of lid seals
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- integrity of cable entrance and/or conduit sealing
 - integrity of clamping devices
 - Any defective seals, clamps blocking and surge arrestors should be replaced

Verify

- Surge arresters for degradation
- Check connections.
- tightness of connections

Corrosion

- Any defective connection should be tight or replaced.
- ▫ Infrared Scanning - DC and AC Connections: Repair hot spots if necessary
- ▫ Electrical characteristics Measure open circuit voltages
- ▫ Protective devices: Verify integrity of fuses
- ▫ Verify operation of MCCB
- ▫ Verify operation of solar array isolation device
- ▫ Verify tightness and integrity of bolts and other fastening devices

Mounting structures (5 years)

- Inspect for corrosion: Submit Corrosion report.
- Safety line (yearly)
- Cable tension: Swag in the safety line not permitted.
- Cable Strands: Fractured cable to be replaced.
- Travelers: Travelers must be able to run freely
- Fittings: Inspect for loose/missing fixtures and fittings
- Fixings to roof surface: Confirm fixings to roof structure.
- Visible damage/Vandalism: Inspect for visible damage.
- Eye Bolts: Inspect structural damage surrounding eyebolt and replace if applicable.
- Frame it as follows: Mechanical.
- Torque all necessary clamps and screws and make right any trunking that may have come loose.
- Install cat ladders to rooftops for access for ongoing maintenance.
- Install permanent safety line anchors for ongoing maintenance.
- Install anti bird mesh

- Electrical
- Infrared inspections for modules
- Infrared inspection for inverters
- Infrared inspection AC and DC combiners
- Check all inverter readings –list of possible readings for the inverters.
- Faulty inverters need to be removed or repaired as well as warranty claims lodged.
- Replace any fuses that have blown.
- Plant management system – repairs done, re-program algorithms and logic, data downloaded, and 12-month report consolidated, portal fee's paid and any arrears settled.

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