



# O&M PROPOSAL

George Lang IV  
Andrew@powerfactorco.com

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## Part 1: Bidder Contact Information

<b>Bidder Contact Information</b>
Corporate Name: <b>Power Factor, LLC</b>
Corporate Address: 8240 Beachwood road, Dundalk MD 21222
Parent's Corporate Name: Power Factor LLC
Parent's Corporate Address: 8240 Beachwood road, Dundalk MD 21222
<b>Legally Authorized Representative</b>
Name: George Lang
Title: Managing Director
Phone: (443) 827 7543
Fax:
E-mail: george@powerfactorco.com
Signature:
<b>Primary Contact:</b>
Name: Andrew Streit
Title: Director of Business Development
Phone: (803) 665-6688
Fax:
E-mail: andrew@powerfactorco.com
Signature:

## Part 2: Executive Summary

Power Factor is honored to submit our qualifications for solar photovoltaic operations and maintenance services to Amesbury Line Solar LLC. Our company is ideally situated to deliver professionalism, excellence, efficiency and durability to Amesbury Line Solar in its efforts to successfully deploy solar projects on its properties. Due to a decade of involvement in developing customized renewable energy projects for public and private clients, Power Factor has an intimate understanding of the energy market in the southeastern United States. Our previous work with public entities has demonstrated that an elevated level of execution and delivery are the minimum standard for every government contract. We are prepared to meet and exceed those standards.

- Power Factor brings with it an experienced team of solar professionals that have successfully completed a large portfolio of projects ranging from rooftop solar arrays to solar parking canopies to utility scale solar farms.
- Power Factor has successfully deployed solar systems for a number of public entities, including various military and municipal installations.
- Power Factor has worked hand-in-hand with utilities, electric cooperatives, regulators, and private and public-sector entities to find economic, clean energy solutions that satisfy the aesthetic and sustainability goals of the client.
- Power Factor has amassed the professional capacity to manage projects on time and on budget even in the midst of challenging circumstances.
- Power Factor's reputation and history of successful solar project management should provide Amesbury Line Solar with the confidence it needs when selecting an experienced, knowledgeable operations and maintenance firm for this project.

Sustainability is not a catch phrase. It is the foundation of successful organizations. Power Factor recognizes that inventing and deploying the nation's utility grid was the single most important investment of the 20th century. Improving efficiency and eliminating waste will be primary drivers for the public and private sectors during the years to come. Given Power Factor's expertise and passion for the advancement of solar as a mainstream component of our country's energy portfolio, we are well prepared to lead in the realization and execution of these maintenance agreements. We are confident that our services will bring with them maximum value to Amesbury Line Solar and will result in a durable sustainability commitment. Power Factor is genuinely excited about our potential role in this process. We are proposing to provide all the preventative and corrective maintenance options requested, as well as providing training of any interested on-site personnel.



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## Preventive Maintenance Requirements and Costs

List of services:

### Standard

Preventative Maintenance Work Scope	
<b>Array Balance System</b>	<b>Yes/No</b>
Array visual inspection-wire management, connector tightness, and insulation inspection	Yes
Array ground/racking debris removal and vegetation inspection	Yes
Verify fence condition and grounding	Yes
Inspect system and site drainage	Yes
<b>Module Visual Inspection</b>	<b>Yes/No</b>
Inspect 100% of glass side for cleanliness and obvious defects	Yes
Inspect 100% of back-sheet a J-Boxes	Yes
Inspect 100% of module clamps for looseness	Yes
<b>String Inverters (Central Inverters vary by Size/Band)</b>	<b>Yes/No</b>
Inspect for corrosion, labelling and basic condition of housing	Yes
Verify functionality of display and operation of PV system	Yes
Inspect base of inverter and conduit entry points	Yes
Clean inverter interior and inspect for moisture intrusion	Yes
Check string fuse functionality	Yes
Check ground straps and ensure all grounds are intact and tight to the enclosure	Yes
Clean heat sink and filters (replace filters if necessary)	Yes
Torque AC and DC conductors connections to manufacturers specs	Yes
IR scan all string terminations	Yes
<b>AC/DC Disconnections &amp; Panel Boards</b>	<b>Yes/No</b>
Cycle all movable parts in AC/DC disconnect & Panel Boards	Yes
Torque all conductor connections to manufacturers specs	Yes
IR scan all string terminations	Yes
<b>DAS &amp; MET Stations</b>	<b>Yes/No</b>
Inspect cabinet for labelling, corrosion, moisture intrusion and basic conditions of housing	Yes
Ensure all conductors and wires are routed in a neat and clean manner	Yes
Torque data terminations to manufacturers specs	Yes
Clean reference cell and/or pyranometer (Replace desiccant)	Yes
Verify functionality of all DAS Components	Yes
<b>Other Services (Please list below)</b>	<b>Yes/No</b>

**Corrective Maintenance Requirements and Costs**

Corrective Maintenance (CM) Services are generally triggered by a monitoring alert reporting an issue at the site. Certain alerts can be corrected remotely, while more severe alerts can require an emergency response due to safety concerns, or (far more typically) permit the on-site service call to be scheduled.

Please indicate which services your company provides and the respective costs associated with typical corrective maintenance service visit in the O&M bid below. The preferred cost structure can be in terms of Hourly, Half Day, or Full Day Rate.

**Standard**

Corrective Maintenance Work Scope	
Common Corrective Maintenance Task	Yes/No
Inverter troubleshooting and warranty management	Yes
String and Connector repairs	Yes
Panel Replacements	Yes
Panel manufacturer defect identification and tracking	Yes
Monitoring troubleshooting and repair	Yes
Fuse replacements	Yes
Breaker tightening and replacement	Yes
Transformer Oil Sampling	Yes
Ground fault identification	Yes
System wide IV Curve testing	Yes
Aerial or customized IR thermal imaging	Yes
Power Quality Analysis	Yes
Additional Services May Include	Yes/No
Auditing/correcting sites installed by others	Yes
Commissioning of sites installed by others	Yes
Medium Voltage and Fiber Optic Services	Yes
Other Services (Please list below)	Yes/No

Cost Structure for Above Indicated Services (Fill in all that apply)	
Hourly Rate	\$75/hr
Half Day Rate	\$250
Full Day Rate	\$500

**Typical Rate Sheet for Additional Services**



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Service Levels and Rates		
Service	Description	Rate
Medium Voltage Electrician	Electrical fault repair, upgrades and modifications, field engineering, transformer testing, underground fault location, site management	\$100/hr
Master Electrician	Electrical fault repair, upgrades and modifications, field engineering, transformer testing, underground fault location, site management	\$75/hr
Level 3 Datacom Electrician	Advanced Datacom troubleshooting, fiber repair, level 1 and 2 capable	\$50/hr
Level 2 Technician	Inverter and Datacom second level troubleshooting, panel testing, fuse and cable replacement. Captures IV Curves, IR Images and Power Quality measurements. OEM repairs	\$36/hr
Level 1 Technician	Inverter and Datacom resets. Primary troubleshooting, records site data and fault codes. Replaces solar panels, was panels, and completes basic electrical and mechanical repairs	\$25/hr
Professional Services	Performance engineering, integration services, system designs, commissioning review, project management and services oversight	\$47/hr
Travel Charges	For teams of 2: Labor + Mileage	
Per Diem	For teams of 2: Overnight Accommodations	\$250
Overtime	Workdays exceeding 8 hours	
Emergency Response	Deploy within 4 hours of notification	
Specialized Site Services		
Service	Description	Rate
Transformer Service	Sample of transformer fluid for DGA, refill nitrogen, includes all labor, laboratory and material costs	
Technical Services	Underground Fault Location (UFL), Infra-Red Imaging Diagnostics (IR Imaging), Module and String level I-V Characterization (IV Curves), DC/AC Power Quality Analysis (PQA)	
Other Services (Please list below)		
Service	Description	Rate

## Onsite training for Amesbury Line Solar

Power Factor is happy to offer Amesbury Line Solar training services.

Training Services and Rates		
Training	Description	Rate
1-Day Training	Training to be held for Points of Contacts at a location provided by AMESBURY LINE SOLAR	\$25/hr
Customize in-class training	Half Day training(s) on specific topics of need for AMESBURY LINE SOLAR	\$50/hr
Field Shadowing	On-site, hands-on training	\$25/hr
Not Applicable	Our company does not provide specific training	

## Credibility

### References:

- Maryland Management  
Christopher Dimario  
Rental Property Owner/Manager  
[Cdimario@Marylandmgmt.com](mailto:Cdimario@Marylandmgmt.com)
- URI (Unlimited Restoration Inc)  
Rodney O'Neal  
Co-Owner  
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- Onyx renewable Partners  
Greg Cousoulas  
Sr VP of Construction  
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