LODESTAR ENERGY

OPERATIONS AND MAINTENANCE PLAN

I. Introduction

Upon completion of the proposed Project, Petitioner will enter into a third-party Operations and Maintenance contract with an experienced third-party operations and maintenance provider ("O&M Manager"). With a fleet of electricians, production analysts and vegetation management personnel, the O&M Manager works diligently to ensure the Project maintains peak performance, reliability and safety.

Prior to energization of the PV Project, the O&M contractor will perform a quality and safety inspection. This inspection is a detailed and site wide inspection to ensure all mechanical and electrical components are installed per manufacturer specifications and per site design. The O&M Manager will also provide detailed safety and emergency response training for Norfolk municipal employees.

Upon energization, the O&M Manager is responsible for the health and safety of the plant. The site will be continuously monitored (24/7/365 monitoring) remotely via a data acquisition system ("DAS"). The DAS has the ability to send alarms identifying communication, power generation or safety related issues. The O&M Manager has a team dedicated to on call service dispatches to address immediate issues from its data acquisition center. In addition to its dedicated on-call team, the O&M Manager will perform detailed annual inspections and will perform routine vegetative management on the Site.

II. Scope of Work

A. **Daily Monitoring of Plant Operation:** For each solar Project, an O&M Manager monitors the Project continuously and receives data from the DAS of any performance or safety related issues. When an alert occurs, it is the responsibility of the O&M Manager to assess the severity of the alert and dispatch the on-call team if necessary. From there, the on-Site service technicians will assess the severity and repair/replace equipment as required. The service details of the O&M Manager are as follows:

1. *Monitoring Operations*:

- Monitoring, 24 hours a day, 7 days a week, 365 days per year
- Alarm Notification
- Remote Corrective Diagnostics
- Remote Power Plant Operation

2. *Performance Optimization Services*:
    - Performance Trend Analysis
    - Performance Engineering
    - Data Storage

B. **<u>Annual Inspection, Testing & Preventative Maintenance:</u>**

- The O&M Manager is also responsible for performing an annual site wide inspection. This inspection is targeted towards securing the safety, performance and reliability of the solar Project. A full report is outputted from the results of the inspection. This inspection includes the following:

1. *Aerial Thermal Imaging and Reporting*:
    - Full Site aerial inspection of all PV modules. UAV (drone) coupled with thermal imaging camera and Raptor Maps proprietary mapping and diagnosis software will identify module level inefficiencies and failures.
2. *PV Modules*
    - Module Inspection, Front
        - Inspect front of modules for broken glass, delamination, yellowing or browning, burnt or oxidized cells, or cracks in cells. Inspect module frames for cracks or bends. Inspect module conductors for tension and indicators of heat.

3. *Mounting System*
    - Mounting System, Support Structure
        - Visually inspect support posts and structural components for evidence of rust, corrosion, settling, or tilt. Visually inspect mounting system hardware for tightness and evidence of rust or corrosion. Inspect and test rack grounding, check for torque levels, re-torque as necessary. Measure and record earth to ground resistance between rack and ground rod with low-resistance ohmmeter.

4. *DC Combiner*
    - Inspect enclosure and devices for corrosion, heat distortion, moisture entry, insect and rodent infestation, and exterior damage. Confirm that all signage and labeling is in place. Inspect surge protection devices for indication of failure. Perform thermographic survey of all terminations and overcurrent protective devices.

5. *DC/AC Raceway*
    - Inspect all DC raceways for loose connections, missing sealant, corrosion and above-grade moisture intrusion.

6. *DC/AC Disconnect*
    - Inspect enclosure and devices for corrosion, heat distortion, moisture entry, insect and rodent infestation, and exterior damage. Confirm that all signage and labeling is in place. Perform thermographic survey of all terminations and overcurrent protective devices.

7. *Inverter*
    - Inspect enclosure, door seals, latches and door stops for signs of corrosion, heat distortion, moisture entry, insect and rodent infestation, and exterior damage in accordance with manufacturer's recommendations and requirements. Confirm that all signage and labeling is in place. Clean all ventilation plates, air ducts, screens, devices and seals in accordance with manufacturer's recommendations and requirements. Inspect Surge Protection Devices for indication of failure. If any single SPD indicates failure mode, replace all SPD modules. Perform thermographic survey of all terminations and overcurrent protective devices.

8. *Medium Voltage Transformer*
    - Inspect enclosure and devices for corrosion, heat distortion, moisture entry, insect and rodent infestation, and exterior damage. Confirm that all signage and labeling is in place. Inspect anchorage and alignment.

9. *SCADA/DAS System*
    - Inspect devices and enclosures for physical damage. Clean as needed. Check tightness of electrical connections. Inspect weather station and all sensors for proper alignment.

C. **Vegetative Maintenance:** Maintenance within the array is typically performed (3) times annually during the growing season. During this time, the site is inspected for evidence of erosion and vegetation health. Vegetative growth exterior to the array is analyzed annually for shade impacts on the array. Any vegetative or site concerns are noted within the annual report.

D. **Module Washing and Snow Removal:** Module washing and snow removal is performed on an as needed basis. Due to the tilt of the modules included within the proposed design, soiling effects due to snow build up, pollen or dust is naturally removed from the module surface. In the event the modules require cleaning, clean water with no chemicals or additives will be used.

E. **Emergency Response:**

Norfolk Resident State Trooper:
14 Shepard Road

Norfolk, CT 06058
Phone: (860)-626-1820

Norfolk Volunteer Fire Department:
20 Shepard Rd,
Norfolk Historic District, CT 06058
Phone: (860) 542-5021

Utility Contact Information:
Eversource CT
(800) 286 -2000

Owner Contact information:
LSE Pyxis LLC
40 Tower Lane, Suite 201
Avon, Ct 06001
Phone: 203-626-2330
Email: jmacel@lodestarenergy.com

If it is determined the site must be shut down, the following emergency shutdown procedure should be conducted in conjunction with representatives of police and fire department:
1) Open AC disconnect located on equipment pad
2) Turn off DC disconnects on all inverters located on equipment pad
3) Turn off all DC disconnects on DC combiners located throughout array
4) Contact the Norfolk Volunteer Fire Department and Norfolk Resident State Trooper if not already present.