**Axis Operations & Maintenance – Consolidated Business Plan**

1. General Strategy
   1. Target Customer
      1. Premium on Safety
      2. Value Responsiveness/Quality over Low Price
      3. Favorable Terms & Conditions
      4. Assets out of Reasonable Commuting Distance (RCD) from Base Operation
      5. Reoccurring Revenue Potential Year over Year- Long term contracts
      6. Potential for Expanded Service Offerings (New Construction, New market expansion)
   2. Target Project Scope Size
      1. $ Value- <=$500,000
      2. MW Total- <=50 MWdc- 50MW+ usually requires a full time onsite presence
   3. Target Geographic Locations
      1. Southeast
2. Organizational Structure
   1. Team Members- Indirect Office Personnel
      1. Axis General Management & Business Development: Josh
      2. Estimating & Back Office Reporting: Lourdes
      3. Admin Support (Payroll & AR/AP): 1910 Admin Staff
      4. Director/Manager of O&M Services: Vacant- This individual has ideally 5-10 years of experience in O&M
         1. Understanding of O&M contract rate structure/estimating
         2. Client list preferred.
         3. Master Electrician & PV Professional. Ability to respond to calls and provide technical insight to asset owner.
         4. $70-$80k annual salary expectation
   2. Team Members- Direct Field Personnel
      1. Sr. Technician(s): Well-rounded technical/administrative knowledge and solar experience.
         1. Master Electrician- Unlimited electrical license preferred.
            1. Experience in Medium voltage electrical systems.
         2. NABCEP PV Installation professional preferred.
         3. Administrative- Diligent record keeping. Comfort level managing subcontractors and temp labor.
         4. Specialist in troubleshooting inverters. Factory trained and certified is a plus.
         5. $30-$35+ hourly wage expectation
      2. Jr. Technician(s): Moderate technical abilities above general labor.
         1. 2-5 years of solar experience preferred.
         2. Journeyman electrician preferred.
         3. $20-$30+ hourly wage expectation
      3. Performance Engineer(s): Expert at monitoring system Data and recognizing/troubleshooting anomalies.
         1. Network/IT experience of how SCADA system is connected through wireless or cellular modem network connections.
         2. Knowledge of Modbus, DNP3 and other protocols.
         3. Monitoring platform knowledge preferred: Locus, Draker, Skytron, Enphase, etc… Factory certified training a plus.
         4. SEL Recloser programming
         5. $30-$40+ hourly wage expectation
      4. Landscaping Technician(s): Competent to operate on zero-turn mowing equipment, trimmers, etc.
         1. Herbicide knowledge/applications/certifications a plus.
         2. Comfort level managing temp labor.
         3. $15-$25 hourly wage expectation
      5. General Laborer(s):
         1. Valid driver’s license
         2. Reliable transportation
         3. $10-$15 hourly wage expectation
3. Scope of Work- Services Offered
   * 1. Preventive Maintenance- Typical Base Contract work
        1. Vegetation Management
        2. Panel Washing
        3. Performance Monitoring
        4. Performance Testing
        5. Routine Plant Inspection
     2. Corrective Maintenance- T&M work
        1. Construction support
           1. CAB installation, Electrical Trenching, SCADA component installations (i.e. fiber, meteorology/DAS equipment)
           2. QA/QC spot checks
           3. Specialty Testing

IVCT

IR Scans (Localized and UAV)

VLF/ Tan Delta

Fiber Optic

* + - 1. Scope Miss- Post Construction
         1. Poor construction installations- Civil, electrical and structural repairs
         2. Erosion repairs
         3. Feeder splicing/replacement
         4. Grounding issues
         5. Faulty terminations
         6. Fence damage repairs
         7. Animal/pest control
      2. Storm Damage Repairs
         1. Civil repairs from flood events
         2. Mod/Rack replacements from wind/hail/snow damage
         3. Electrical anomalies resulting from lightning strikes
      3. System Upgrades
         1. Module swaps
         2. Faulty/Outdated Equipment replacement
         3. Energy Storage additions
         4. Utility/code required upgrades
      4. System Decommissioning
         1. Array demolition
         2. Equipment recycling

1. Training Requirements (Technical/Practical)
   1. Industry Certifications
      1. General Contracting License- NC min. NASCLA preferred
      2. Unlimited Electrical License- NC/SC/VA minimum to start
      3. NABCEP- North American Board of Certified Energy Practitioners
         1. Photovoltaic (PV) Installation Professional
         2. PV Technical Sales Certification
      4. Certification by the North American Energy Reliability Corporation (NERC) is necessary for transmission sites (substation interconnections).
   2. Health & Safety Training
      1. Arc- Flash
      2. LOTO
      3. Trenching
      4. OSHA 10/30
      5. First Aid & CPR
   3. Vendor Training & OJT
      1. Tools & Machinery
      2. Testing Instruments
      3. Inverter/SCADA/Transformer specific manufacturer training
2. Historical Specialty Project Financial Data (Relative scope miss/O&M opportunities from analysis of SP10/Axis - 2015-2017)
   1. Estimated
      1. Number of Opportunities-46
      2. Total Value in Dollars-$2,704,249.00
   2. Awarded
      1. Number of Opportunities-31
      2. Total Value in Dollars-$1,610,100.00
      3. Cumulative- 25.9% Gross Margin

**Business Case:**

O&M contracts range from 1-5 years and are awarded through a competitive bid process. Maintenance activities typically include Landscaping, routine inspection, module washing and performance monitoring. Troubleshooting system problems are typically subject to pre-negotiated Time and material rates and are handled apart from the base contract maintenance activities. Technical expertise and the ability to respond within 24-48hrs are critical to long term success. Assets that are down in production are losing revenue by the hour!

Preventive maintenance accounts for approximately 45% of the annual O&M costs while Corrective maintenance accounts for the remaining 55%. Monitoring costs are minimal as they are usually sold as a service package with the purchase of any particular SCADA/DAS platform. As with any asset that operates daily, maintenance costs will undoubtedly increase over time as will the need for skilled maintenance technicians that can recognize/correct issues quickly and minimize downtime.

Axis Energy is currently well positioned in the Southeast to develop Operations and Maintenance capabilities that will grow as assets built within the last 5 years begin to show wear and tear. The solar industry in the Southeast is still relatively immature, with the majority of utility scale solar assets currently operating within the first 5-10 years on average of a 25 year production lifecycle.

As EPC and equipment manufacturer warranties start to expire after 5-10 years typically the need for dedicated O&M providers will only increase.