Solar Energy
Clean Energy Career Pathways Catalog

Over 300 job descriptions for technical and specialty jobs in clean energy

Created for job-seekers, hiring managers, the existing workforce, and the public, ACP’s Clean Energy Career Pathways Catalog presents over 300 job descriptions for technical and specialty jobs within the clean energy industry.

This catalog shows the upward mobility and opportunities that exist within the industry, alongside highlighting the skills and requirements necessary to work in these positions. The aim is to provide a better understanding of how existing transferrable skills could be applied to clean energy jobs or what a career progression within the workforce could look like.

This massive effort is meant to provide workers in other energy industries, veterans, and workers in underrepresented communities a better idea of the jobs available in clean energy, as well as support the industry with recruiting and retention.

Solar Energy Career Pathways Catalog

This sector-specific catalog presents job descriptions in the Solar Energy sector. For jobs within all sectors, download the full PDF.

If you have questions about the catalog, please email workforcedev@cleanpower.org.
Clean Energy Occupations can be looked at across Clean Energy Sectors, Industry Segments, Industry Sub Segments, and Occupational Groups & Job Families. The catalog is organized by the hierarchy and groups represented here:
Explanation of Career Maps

Each catalog includes an interactive Career Map that illustrates potential pathways for career growth within the Sector and within five specific Industry Segments.

On the Career Map, each occupation is represented by a clickable dot. Each sector’s Career Map contains three Career Levels:
- Entry Level
- Mid-Level
- Advanced

Dots placed in vertical lines or nearby spaces up through the career levels represent the career progression in a particular field or Industry segment.

**Note:** The vertical paths are not the only potential career options from any given occupation, since those who acquire further education and experience may also make cross-industry segment and sector moves. The more typical career moves from each occupation are outlined on each Occupation Description page.

Click on a career level in an industry segment and you will be taken to that section.
Solar Energy Career Map

Click on a career level in an industry segment and you will be taken to that section.
## Solar Energy Career List

### Project Development

**A1 ** **ENTRY-LEVEL** [PAGE 7-8]
- Business Development Specialist
- Site Acquisition Specialist, Land Acquisition Specialist, Land Agent, Land Acquisition Associate

**A2 ** **MID-LEVEL ** [PAGE 9-19]
- Business Development Manager
- Civil Engineer, Structural Engineer
- Mechanical Engineer, Design Engineer, Product Engineer, Equipment Engineer
- Project Developer, Pre-Construction Manager
- PV System Designer, Solar Systems Designer, Solar Design Engineer
- Site Acquisition Manager, Land Acquisition Manager
- Strategic Procurement Manager

**A3 ** **ADVANCED ** [PAGE 16-18]
- Electrical Systems Engineer, Power Systems Engineer, Electrical Interconnection Engineer, Electrical Design Engineer
- Interconnection Engineer
- Planner—Renewable Energy

### Operations & Maintenance

**B1 ** **ENTRY-LEVEL ** [PAGE 19-27]
- Cable Splicer & Terminator
- Control Center Operator or Controller or Remote Access Operator
- Groundsman
- Instrumentation & Electrical Technician—Entry
- Meteorologist—Entry
- Operations Specialist I
- Safety Manager I
- Solar Technician I, Solar Field Technician I, Field Service Tech I, Technician Trainee, Associate Technician
- Solar Technician II, Solar Field Technician II, Field Service Tech II

**B2 ** **MID-LEVEL ** [PAGE 28-36]
- Assistant Facility Manager
- Instrumentation & Electrical Technician—Intermediate
- Maintenance Supervisor, Technician Supervisor
- Meteorologist—Intermediate
- Operations Specialist II
- Reliability Engineer
- Safety Manager II
- Solar Technician III, Senior Solar Field Technician, Field Service Tech III
- Solar Technician Lead, Solar Technician IV, Field Service Tech IV

**B3 ** **ADVANCED ** [PAGE 37-49]
- Asset Manager
- Director, Meteorology
- Director, Operations & Maintenance, Director O&M
- Director, Quality & Operations Support
- Engineering Manager
- Environmental Engineer, Regulatory Compliance Manager
- Instrumentation & Electrical Technician—Senior
- Maintenance Manager
- Meteorologist—Senior
- Operations Manager, O&M Manager, Site Manager, Facility Manager—Solar
- Reliability Engineering Manager
- Safety Manager III
- Senior Financial Analyst & Planner

### Manufacturing

**C1 ** **ENTRY-LEVEL ** [PAGE 50-52]
- Advanced Manufacturing Technician, Production Technician, Manufacturing Maintenance Technician
- Assembler / Fabricator
- CNC Operator

**C2 ** **MID-LEVEL ** [PAGE 53-54]
- Industrial Engineer / Manufacturing Engineer
- Inspector & Quality Control

**C3 ** **ADVANCED ** [PAGE 55-56]
- Fleet Manager, O&M Manager
- Industrial Engineering Manager, Manufacturing Engineering Manager

### Construction/Installation

**D1 ** **ENTRY-LEVEL ** [PAGE 57-65]
- Commissioning Technician
- Concrete Worker
- Crane Operator
- Equipment Operator—Light
- Laborer, General Laborer
- Site Surveyor
- Solar Assembler / Basic (Entry) Installer
- Truck Driver
- Warehouse Assistant, Warehouse Support

**D2 ** **MID-LEVEL ** [PAGE 66-73]
- Buyer, Procurement Specialist, Procurement Associate
- Construction Manager
- Equipment Operator—Heavy, Equipment Operator
- Equipment Operator—Medium
- Journeyman Electrician
- PV Site Inspector, QA Inspector, Inspector & Quality Control Coordinator, Site Assessor
- Solar Installer, Photovoltaic (PV) Installer
- Solar PV Crew Chief, Solar Foreman

**D3 ** **ADVANCED ** [PAGE 74-77]
- Commissioning Manager
- Construction Manager II
- Construction Manager III
- Project Manager

### Research & Training

**E1 ** **ENTRY-LEVEL ** [PAGE 78-80]
- N/A

**E2 ** **MID-LEVEL ** [PAGE 81-82]
- Analyst / Researcher
- Research Engineer, Research and Development Engineer
- Technical Trainer, Technical Instructor

**E3 ** **ADVANCED ** [PAGE 81-82]
- Materials Scientist, Research & Development Engineer
- Training & Development Manager
Business Development Specialist

DESCRIPTION
Respond to contact from customers and assess needs and potential for sale (qualify leads). Educate customers about features and benefits of products and services. Develop understanding of client business and their goals and needs. Track leads and results and maintain contacts & opportunities database. Develop an understanding of the client’s goals, needs and concerns and clearly communicate this to Director of Business Development. Assist in establishing marketing goals to ensure market share and profitability of products and/or services. Develop surveys and other marketing tools.

KNOWLEDGE/SKILLS
Strong communication, presentation & negotiation skills, computer skills. Multi-tasking. Reading, analyzing and interpreting common scientific and technical journals, financial reports and legal documents. Calculating figures and amounts.

Requirements

Education/Training
Bachelor’s degree in marketing, construction management or business field required.

Experience
1-3 years in direct marketing/sales of construction-related services preferred.

Credentialing Required/Optional
PV Technical Sales certification (NABCEP) desirable.

Position Reports To
Business Development Manager

Career Path Moves From This Role
Business Development Manager
Site Acquisition Specialist
Land Acquisition Specialist, Land Agent, Land Acquisition Associate

DESCRIPTION
Assist in obtaining land for solar energy projects. Administer land after it has been purchased or leased. Work with various engineers, scientists, attorneys, developers, permitting specialists, landowners, local governments and community organizations to ensure solar project is constructed and operational. Design and implement land acquisition strategies and plans for development of new sites. Assist developers/owners in projects by providing land options. Conduct research on county building codes and landowner information. Coordinate meetings, develop relationships, and negotiate purchase or lease contracts with owners.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
Bachelor’s degree required; Graduate degree preferred. Business, real estate law, engineering or related.

Experience
Real estate or land acquisition experience required.

Credentialing Required/Optional
Real estate license preferable. Notary license desirable.

POSITION REPORTS TO
Purchasing Manager

CAREER PATH MOVES FROM THIS ROLE
Purchasing Manager, Asset Manager
Business Development Manager

DESCRIPTION
Develop new business contacts to manage and maintain existing customer relations, contacts and sales. Identify, develop and lead sales opportunities through industry research, calls to clients, media, etc. Work closely with senior leaders in developing business leads and with business development director to establish company budget and sales goals. Develop understanding of client business and their goals and needs. Establish and execute marketing strategies. Track leads and results and maintain contacts & opportunities database.

KNOWLEDGE/SKILLS
Strong communication, presentation & negotiation skills, computer skills. Multi-tasking. Reading, analyzing and interpreting common scientific and technical journals, financial reports and legal documents. Calculating figures and amounts.

REQUIREMENTS

Education/Training
Bachelor’s degree in marketing, construction management or business field required.

Experience
3 years in direct marketing/sales of construction-related services preferred.

Credentialing Required/Optional
PV Technical Sales certification (NABCEP) desirable.

POSITION REPORTS TO
Business Development Director

CAREER PATH MOVES FROM THIS ROLE
Business Development Director
Civil Engineer
Structural Engineer

DESCRIPTION
Provide civil engineering expertise. Evaluate structural loads and limits for solar structures and buildings. Complete structural analysis on solar projects—commercial and utility scale. Provide expertise to project managers and others regarding structural loads and limits. Inspect and lead others through inspections and troubleshooting including authorities, code officers, and contractors. Complete drawings, calculations and rationale for approvals and permitting.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
BS degree in engineering; some reliability engineering credits helpful.

Experience
5+ years’ Experience in commercial construction and structural assessment of buildings.

Credentialing Required/Optional
PE (Professional Engineer) License may be required.

POSITION REPORTS TO
Head of Engineering, Engineering Manager

CAREER PATH MOVES FROM THIS ROLE
Engineering Manager, Project Manager
Mechanical Engineer
Design Engineer, Product Engineer, Equipment Engineer

DESCRIPTION
Design, develop, analyze and test solar equipment and products including panels and racking systems etc. Design mechanical and electromechanical systems and components for solar projects. Develop technical engineering drawings and models. Verify and check project layouts and drawings. Outline materials needed based on engineering and quality standards. Create new and improve upon existing solar designs to improve efficiency and reliability, and to reduce costs.

KNOWLEDGE/SKILLS
Project management, design for manufacturability (DFM) principles, mechanical and electromechanical assemblies & mechanisms, solar energy, solar racking design and analysis, 3D cad modeling and drawing creation using SolidWorks software, product design, quality control.

REQUIREMENTS

Education/Training
BS in Engineering or higher degree from an accredited university.

Experience
3-4 years’ experience with design of mechanical or electromechanical solar assemblies and mechanisms. Ideally racking systems, 3D cad modeling and variety of software.

Credentialing Required/Optional
May require engineering license.

POSITION REPORTS TO
Engineering Manager or Director

CAREER PATH MOVES FROM THIS ROLE
Engineering Manager or Director, Materials Scientist
**Project Developer**

Pre-Construction Manager

**DESCRIPTION**
Manage and oversee all of the Pre-Construction aspects of utility-scale renewable energy. Complete cost and budgetary estimates for the engineering, procurement and construction of the renewable generation facilities. Manage the preliminary engineering for projects. Responsible for managing and developing Request for Proposal's (RFP's) that will be issued to potential Contractors for the competitive bidding process.

**KNOWLEDGE/SKILLS**
Basic engineering concepts associated with renewable energy facilities (geotechnical, civil, structural, electrical). Engineering and cost estimating of medium voltage and high voltage, including, but not limited to collections systems, substations and transmission lines. MS Office software, and Microsoft Project or Primavera.

**REQUIREMENTS**

**Education/Training**
Minimum Bachelor of Science degree with preference in engineering and/or construction management.

**Experience**
2-5 years progressive responsible experience in the renewable power industry with significant wind and/or solar energy experience. Direct experience with project and engineering management for wind and/or solar is preferred. Field and estimating experience are a plus.

**POSITION REPORTS TO**
Director of Solar Projects, Project Manager

**CAREER PATH MOVES FROM THIS ROLE**
Construction Manager, Director of Engineering, Director of Solar Projects
PV System Designer
Solar Systems Designer, Solar Design Engineer

DESCRIPTION
Analyze site for commercial or utility scale solar projects. Design solar / photovoltaic (PV) systems. Recommend engineering or manufacturing changes based on project objectives and in response to project issues. Develop project specifications and procedures for safe installation of systems and successful solar power system start-up and operation. Using computer design software, develop diagrams for solar systems. Develop methodologies and specifications that allow for optimum efficiency and system performance. Provide technical direction and support to construction / installation teams during installation, start-up, testing, system commissioning, and performance monitoring.

KNOWLEDGE/SKILLS

REQUIREMENTS

Education/Training
Minimum bachelor's degree in engineering or science field required. Master's degree preferred.

Experience
5+ years' experience in the solar industry.

Credentialing Required/Optional
PV Design Specialist or PV Installation Professional certification (NABCEP) may be desired. Also “Renewable Energy Professional” from Association of Energy Engineers (aeecenter.org).

POSITION REPORTS TO
Solar Systems Director, Engineering Director, Project Developer

CAREER PATH MOVES FROM THIS ROLE
Project Developer, Other Engineering role or supervisory role
Site Acquisition Manager
Land Acquisition Manager

DESCRIPTION
This is the more senior level of Site Acquisition Specialist. Secure optimal sites for solar energy projects. Identify, structure, negotiate and execute real estate transactions with a wide range of property owners and third parties for the development of solar energy assets. Conduct landowner outreach and establish relationships with a list of targeted landowners. Negotiate terms on all facets of site acquisition, including letters of intent, options, leases, purchase agreements, and easements. Draft real estate documents. Work with outside consultants land agents, counsel, and specialists. Manage & coordinate multiple projects. Educate landowners on solar energy business. Manage land/site acquisition specialists.

KNOWLEDGE/SKILLS
Real estate transactions and title matters, renewable energy, land use, land (ALTA) surveys, GIS and mapping software.

REQUIREMENTS
Education/Training
BA/BS degree in energy or real estate; Master's degree a plus.

Experience
3+ years' experience of real estate acquisition and/or development experience, ideally with renewable energy experience.

Credentialing Required/Optional
Real estate credentials helpful.

POSITION REPORTS TO
Director, Solar; Director of Development, or VP, Solar

CAREER PATH MOVES FROM THIS ROLE
Solar Project Manager, Operations Director
Strategic Procurement Manager

DESCRIPTION
Lead and support the development of strategy for and the procurement of the key components that comprise projects and products, including Solar energy solutions, tracking systems and other key technologies with a focus on solar energy. Perform technology evaluation that considers potential customers, financial structures, and strategic advantages; build specifications with the engineering teams; collaborate on project development and implementation. Maintain supplier relationships; conduct assessments of suppliers, maintain pricing roadmaps. Procure key components and create contracts with suppliers. Lead competitive RFP processes and manage contracting process. Interface with legal, development, engineering and construction on scope, specifications, testing, etc. Support projects and ongoing supplier management.

KNOWLEDGE/SKILLS
Knowledge of renewable energy industry, negotiations, contracting, quantitative and qualitative analysis.

REQUIREMENTS
Education/Training
Bachelor’s degree. MBA or MS degree preferred.

Experience
At least 3 years experience in the energy field; experience in negotiations and analysis.

POSITION REPORTS TO
Director, Solar Energy

CAREER PATH MOVES FROM THIS ROLE
Director of Solar Operations or Engineering or Construction or Project Manager on other green energy systems (i.e. Solar)
Electrical Systems Engineer

Power Systems Engineer, Electrical Interconnection Engineer, Electrical Design Engineer

DESCRIPTION
Provide power system expertise, electrical theory, research and analysis for renewable energy company to connect to power grid. Prepare and study specs of electrical systems and technical drawings. Develop construction, installation and manufacturing specifications. Develop and direct/implement commercial and utility scale solar power projects. Assess effectiveness and safety of solar power systems. Work with engineers and manufacturing regarding testing and evaluating equipment.

KNOWLEDGE/SKILLS
Transmission, generation and distribution of electrical power, monitoring of operations, design, qualify control, critical thinking and troubleshooting, engineering and math. Electrical design processes and related computer software: ETAP or similar; use of PSSE/PSLF.

REQUIREMENTS

Education/Training
Bachelor’s degree in electrical or power engineering. Familiarity with IEEE electrical standards and NESC. Knowledge of power system design.

Experience
5+ years

Credentialing Required/Optional
PE (Professional Engineer) license required. Certification in specific systems may be required.

POSITION REPORTS TO
Power Systems or Energy Systems Manager or Director

CAREER PATH MOVES FROM THIS ROLE
Solar Energy Systems Designer
Interconnection Engineer

DESCRIPTION
Manage interconnection of power generation equipment (for renewable energy sources) to the electric grid. Use technical, design, evaluation and problem solving expertise. Manage various projects from site selection through power generation. Manage resource planning and design quality. Assess capabilities and complete due diligence for interconnection. Complete the following as part of projects: concept designs, site evaluations, budgets, diagrams, and equipment specifications.

KNOWLEDGE/SKILLS
Operations analysis, problem solving, medium and high voltage design, computer skills, project management, technology design, sciences and math.

REQUIREMENTS
Education/Training
BS degree preferred. Associate's degree required.

Experience
5+ years

Credentialing Required/Optional
PE (Professional Engineer) License may be required.

POSITION REPORTS TO
Power Systems or Energy Systems Manager or Director

CAREER PATH MOVES FROM THIS ROLE
Power Systems Engineer, Energy Systems Designer
Planner—Renewable Energy

DESCRIPTION
Responsible for assessment and permitting of renewable energy facilities and associated storage and transmission infrastructure. Prepare proposals and provide direction for the development of environmental impact analysis documents, related technical studies, mitigation monitoring, exemptions/exclusions, and discretionary permit applications. Manage projects. Provide leadership for staff. Review field surveys and reports, cultural resources and geotechnical surveys and reports, air quality reports, wetland delineations (where applicable). Oversee preparation of environmental permit applications with various federal, state, and local agencies for a variety of project types/sizes.

KNOWLEDGE/SKILLS
NEPA practices and regulations. Environmental planning. Analysis of data/information, synthesis, and conclusion development. Writing various reports and documents. Constraint analysis. Developing mitigation measures. Reading and interpreting complex documents. Communication with varied groups, including leading meetings and presentations. Proficiency with MS Office suite (e.g., Microsoft Word, Microsoft Teams, Microsoft Project, Adobe Acrobat, Excel). Federal, state, and county permitting processes and applications. Federal and state habitat conservation planning programs.

REQUIREMENTS

Education/Training
Bachelor’s degree in environmental science or related field required. Masters degree preferred. Training/education in a technical field such as air quality, cultural resources, hazardous materials, biological resources, or environmental law a plus.

Experience
Minimum of 7 years of applicable professional experience, 5 years of demonstrated project lead experience, and 3 years in renewable or traditional energy. Experience with environmental permitting for large, utility-scale solar, wind energy or storage or transmission projects.

Credentialing Required/Optional
Industry-specific training (specialized field surveys methods, NEPA courses), certifications (e.g., PWS, CWB®, AICP, HAZWOPER), or species-specific handling permits a plus.

POSITION REPORTS TO
Director Environmental Assessment, Permitting & Compliance

CAREER PATH MOVES FROM THIS ROLE
Director Environmental Assessment, Permitting & Compliance
Cable Splicer & Terminator

**DESCRIPTION**
Perform cable splicing, terminations of cables, and electrical testing along cable line and on junction boxes and transformers. Perform new construction, maintenance or repair of energized and de-energized cable work (above & below ground). Operate safely, following all safety procedures and taking care of self and others on the work site. Switch and splice cable, terminate cable, and phase out lines.

**KNOWLEDGE/SKILLS**
Hand tools, testing (PD or VLF), general electrical safety, excavation & trenching, lockout/tagout & grounding.

**REQUIREMENTS**

**Education/Training**
Apprenticeship in electrical. High School diploma. Also, completion of cable manufacturer's cable splicing and termination training.

**Experience**
3 years cable splicing & termination.

**Credentialing Required/Optional**
Training per manufacturer's cable (qualified on that cable). Certification. May require journeyman level electrical.

**POSITION REPORTS TO**
Head or Senior Electrician or Manager

**CAREER PATH MOVES FROM THIS ROLE**
Head or Senior Electrician
Control Center Operator
Power System Operator, Electrical System Operator

DESCRIPTION
Direct, monitor and coordinate the operation of solar energy assets from an Operations Control Center. Use SCADA and other monitoring and control systems. The Control Center Operator ensures that the operations of solar farms comply with all applicable North American Electric Reliability Corporation (NERC) standards and practices. The Control Center Operator works independently with guidance only in complex situations.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
Associate’s Degree in Electrical Engineering or an equivalent combination of training and experience.

Experience
0-2 years in power system operations, power production, control center or related energy operations.

Credentialing Required/Optional
PJM or other ISO Certifications, as required, or ability to obtain within 6 months. NERC Certification preferred.

POSITION REPORTS TO
Control Center Manager

CAREER PATH MOVES FROM THIS ROLE
Senior Controller, Control Center Manager
Groundsman

**DESCRIPTION**
Responsible for vegetation maintenance and abatement at solar site. Ensure upkeep and appearance of outdoor environments, including grounds and landscaping at solar sites. Take care not to damage solar equipment while maintaining grounds.

**KNOWLEDGE/SKILLS**
Operating and maintaining various types of grounds maintenance equipment (mowers, trimmers, etc.). Knowledge of various types of vegetation. Mechanical skills.

**REQUIREMENTS**

**Education/Training**
High School diploma or GED. General mechanical aptitude.

**Experience**
1 year work experience

**POSITION REPORTS TO**
Solar Site Supervisor

**CAREER PATH MOVES FROM THIS ROLE**
Maintenance Supervisor, Light or Medium Equipment Operator (with training / apprenticeship)
Instrumentation & Electrical Technician—Entry

DESCRIPTION
Under close supervision, perform maintenance, calibrate, install, and repair instrumentation including controls and electrical equipment at a solar energy facility. Maintain drawings, logs, and other project records. Carry out approved switching orders and perform high voltage switching. Troubleshoot and repair automated control systems, maintain and repair meteorological, fiber optic and electrical equipment, as well as instrumentation and SCADA systems. Work with voltages up to 230kV. Assist with high voltage system maintenance and repair and in inspecting renewable energy equipment. Interact with customers as directed by manager and ensure customer safety. Assist in all areas of site operations. Follow all health and safety and operating procedures.

KNOWLEDGE/SKILLS
Troubleshooting and maintaining equipment. Maintenance, calibration, installation and repair of instrumentation and controls for solar energy equipment. SCADA systems. Customer service. Ability to work with high voltages.

REQUIREMENTS

Education/Training
High school diploma or GED with completion of an apprentice program or equivalent experience. An Associate’s degree from a technical school is common.

Experience
Completion of an apprentice program or equivalent experience. One to two years of experience troubleshooting and maintaining equipment.

Credentialing Required/Optional
ISA CCST certification to Level II is common.

POSITION REPORTS TO
Solar Instrumentation and Electrical Technician Lead or Senior, Solar Instrumentation and Electrical Technician Supervisor, Solar Farm Site Manager, Manager Renewable Energy

CAREER PATH MOVES FROM THIS ROLE
Solar Instrumentation and Electrical Technician—Intermediate
Meteorologist—Entry

DESCRIPTION
Monitor and manage data from meteorological towers to prepare reports and presentations to internal and external stakeholders. Assess site suitability and perform micro-siting for development stage projects to optimize solar farm design. Assist in developing the layout for solar farms based on available meteorological data using advanced mapping software. Analyze performance of operating projects to minimize energy losses. Provide analytical support and model capabilities to both finance and development from project conception through project operations. Supervised position.

KNOWLEDGE/SKILLS
Meteorology, atmospheric science, solar energy forecasting, solar farm design, analyses, modeling.

REQUIREMENTS
Education/Training
Bachelor’s and/or Master’s degree in Meteorology, Atmospheric Science or a related science.

Experience
One to two years’ of related meteorological experience.

POSITION REPORTS TO
Meteorologist—Senior, Director, Meteorology

CAREER PATH MOVES FROM THIS ROLE
Meteorologist—Intermediate
Operations Specialist I

DESCRIPTION
Support day to day Reporting, Performance, and Monitoring (RPM) of Center Solar activities, acting as the on-shift Operations Specialist for assets in the portfolio. Involved in monitoring of plant and system processes. Operate electrical and SCADA systems. Monitor critical elements in a complex and regulated system. Implement real-time actions to ensure the stable and reliable operation. Comply with applicable NERC Reliability Standards and regional rules and tariffs. Monitor and analyze available market information to identify dispatching and trading opportunities. Analyze and evaluate energy transactions.

KNOWLEDGE/SKILLS

REQUIREMENTS

Education/Training
Bachelor’s degree or formal operations apprenticeship training or equivalent preferred.

Experience
Two years’ experience in Operations or in a Solar Technician Role is preferred. Competent technical knowledge of plant and system processes, and experience in operating electrical and SCADA systems.

Credentialing Required/Optional
Must obtain NERC RC certification within 12-months.

POSITION REPORTS TO
Operations Manager or Project Manager

CAREER PATH MOVES FROM THIS ROLE
Operations Specialist II
Safety Manager I

DESCRIPTION
Participate in planning, organizing and implementing safety programs for construction projects while ensuring compliance with federal, state and corporate environmental, health and safety regulations. Develop project specific HSE programs and procedures through interface and teamwork with Project / Operations management/supervisory personnel. Maintain Accountability Programs on all projects for safety-related issues and work with supervision to ensure uniform application of safety related discipline. Serve as a mentor to other HSE professionals. May be the lead safety manager on a small project. Coordinate and present safety training to support the company and client requirements. Participate in EHS project risk assessments. Assist with conducting accident, near miss, and damage investigations with Root Cause Analysis. With oversight, develop and monitor EHS performance, progress, preventive and corrective action plans.

KNOWLEDGE/SKILLS

REQUIREMENTS

Education/Training
High school diploma or GED.

Experience
Minimum of 1 year of construction safety management experience. Demonstrated ability to provide a high level of safety leadership to both management and technicians.

Credentialing Required/Optional
Certified Hygiene Safety Technician (CHST) preferred. CPR/First Aid certification.

POSITION REPORTS TO
EHS Senior Leadership or a Group/Senior Safety Manager

CAREER PATH MOVES FROM THIS ROLE
Senior Safety Manager, Safety Manager II
Solar Technician I

Solar Field Technician I, Field Service Tech I, Technician Trainee, Associate Technician

DESCRIPTION
Lay-out, assemble, install, or maintain utility level solar photovoltaic (PV) systems, models and panels in compliance with site assessment and schematics. When needed, measure, assemble and bolt structural framing and solar modules / panels. Assist with the on-site operations, corrective and preventive maintenance, repairs, and replacement. Comply with and follow all safety, LOTO, company, and operations policies and procedures. Work with other technicians and laborers. Use appropriate hand tools and power tools to perform a variety of functions. Use materials, equipment, and installation sequences necessary to maximize installation efficiency. Assist with activating and testing PV systems. Lift and carry building materials, tools, and supplies. Mix, pour and spread concrete, asphalt, gravel and other materials. Perform cleaning, compacting, grading, painting, sanding or stripping operations. Maintain records of system operation, performance, and maintenance. Coordinate work with other crafts and co-workers. Observe functioning of installed equipment systems to determine need for adjustments, relocation, or replacement.

KNOWLEDGE/SKILLS
Basic knowledge to assist with Solar Photovoltaic construction craft and the assembly, installation, or maintenance of solar photovoltaic (PV) systems. Reading plans and specifications. Basic Electricity, Mechanical, and Environmental, Health and Safety Fundamentals. Microsoft Office software, SQL Server software, facility management and reporting systems, and computerized diagnostic and troubleshooting tools. Maintenance and electronic testing equipment. Heavy equipment required for facility maintenance. Safe work practices and LOTO.

REQUIREMENTS
Education/Training
A high school diploma or GED is required. 2-year technical degree or equivalent. Journeyman certification preferred. Valid driver’s license.

Experience
Ideally minimum of 1 year solar energy industry or related experience. Field electrician experience with Instrumentation & Electrical, Instrumentation & Control will be considered in lieu of applicable solar experience. Ideally, some experience with power operations and maintenance, substations, solar operations and varying solar technology.

Credentialing Required/Optional
Journeyman level certification preferred. PV Installer Specialist certification desirable (NABCEP).

POSITION REPORTS TO
Solar Technician Lead or Senior, Solar Technician Supervisor, Solar Site Manager, Manager Renewable Energy

CAREER PATH MOVES FROM THIS ROLE
Solar Technician II (Associate), Solar Technician III (Senior)
Solar Technician II
Solar Field Technician II, Field Service Tech II

DESCRIPTION
Lay-out, assemble, install, or maintain utility level solar photovoltaic (PV) systems, models and panels in compliance with site assessment and schematics. Measure, assemble and bolt structural framing and solar modules / panels. Perform corrective, preventive, and emergency maintenance and operations. Responsible for the on-site operations; corrective, preventive, and emergency maintenance, repairs, and replacement. Comply with and follow all safety, LOTO, company, and operations policies and procedures. Train and mentor new technicians, helpers and laborers. Use appropriate hand tools and power tools to perform a variety of functions. Determine materials, equipment, and installation sequences necessary to maximize installation efficiency. Activate and test PV systems. Lift and carry building materials, tools, and supplies. Mix, pour and spread concrete, asphalt, gravel and other materials. Install power whips and harnesses. Perform cleaning, compacting, grading, painting, sanding or stripping operations. Compile or maintain records of system operation, performance, and maintenance. Coordinate work with other crafts and co-workers on the job. Observe functioning of installed equipment or systems to determine hazards and need for adjustments, relocation, or replacement.

KNOWLEDGE/SKILLS
Solar Photovoltaic construction craft and the assembly, installation, or maintenance of solar photovoltaic (PV) systems, reading plans and specifications. Basic Electricity, Mechanical, and Environmental, Health and Safety Fundamentals. Microsoft Office software, SQL Server software, facility management and reporting systems, and computerized diagnostic and troubleshooting tools. Maintenance and electronic testing equipment. Heavy equipment required for facility maintenance, including working knowledge of crane rigging requirements. Safe work practices and LOTO. Leading people and interacting with customers.

REQUIREMENTS

Education/Training
A high school diploma or GED is required. 2-year technical degree or equivalent Journeyman certification preferred. Valid driver’s license.

Experience
1-2 years’ relevant experience in solar energy or a related industry (with required education & training) or 2+ years of field electrician experience with Instrumentation & Electrical, Instrumentation & Control will be considered in lieu of applicable solar experience. Experience with power operations and maintenance, substations, solar operations, high-voltage switching, and post-operational repair and maintenance of solar field components preferred. Experience with multiple solar equipment supplier technology. Solar installer and/or construction experience helpful.

Credentialing Required/Optional
Journeyman level certification preferred. PV Installer Specialist certification or PV Installation Professional certification desirable (NABCEP).

POSITION REPORTS TO
Solar Technician Lead or Senior, Solar Technician Supervisor, Solar Site Manager, Manager Renewable Energy

CAREER PATH MOVES FROM THIS ROLE
Solar Technician III (Senior) or Lead
Assistant Facility Manager

DESCRIPTION
Support the Facility Manager in all areas of the operating site. Ensure a positive working environment by maintaining morale and employee relations. Lead the use of maintenance documentation, reporting tools and performance systems necessary for reporting and performance improvement. Provide hands-on technical support and supervision for generation equipment and power delivery systems, as well as with other facility civil work, building maintenance, and upkeep.

KNOWLEDGE/SKILLS
Computer skills, mechanical and electrical troubleshooting and maintenance. Leadership and supervisory skills.

REQUIREMENTS
Education/Training
BA/BS degree in electrical engineering or experience equivalent.

Experience
Supervision and technical experience in the power generation industry or related fields. Experience using computers and with mechanical and electrical troubleshooting and maintenance.

POSITION REPORTS TO
Facility Manager, Operations Manager

CAREER PATH MOVES FROM THIS ROLE
Facility Manager, Operations Manager
Instrumentation & Electrical Technician—Intermediate

DESCRIPTION
Perform maintenance, calibrate, install, and repair instrumentation including controls and electrical equipment at a solar energy facility. Maintain drawings, logs, and other project records. Carry out approved switching orders and perform high voltage switching. Troubleshoot and repair automated control systems, maintain and repair meteorological, fiber optic and electrical equipment, as well as instrumentation and SCADA systems. Work with voltages up to 230kV. Assist with high voltage system maintenance, repair and in inspecting renewable energy equipment. Interact with customers as directed by manager and ensure customer safety. Assist in all areas of site operations. Follow all health and safety and operating procedures.

KNOWLEDGE/SKILLS
Troubleshooting and maintaining equipment. Maintenance, calibration, installation and repair of instrumentation and controls for solar energy equipment. SCADA systems. Customer service. Ability to work with high voltages.

REQUIREMENTS
Education/Training
High school diploma or GED with completion of an apprentice program or equivalent experience. An Associate's degree from a technical school is common.

Experience
Completion of an apprentice program or equivalent experience. Minimum three years of experience troubleshooting and maintaining equipment.

Credentialing Required/Optional
ISA CCST certification to Level II is common.

POSITION REPORTS TO
Solar Farm Site Manager

CAREER PATH MOVES FROM THIS ROLE
Solar Instrumentation and Electrical Technician Lead or Supervisor, Engineer (with degree), Project Manager
Maintenance Supervisor

Technician Supervisor

DESCRIPTION
Supervise and perform corrective, preventive, and emergency maintenance and operations for solar PV systems and associated equipment. Support the site / facility manager in operating the site. May provide first line of supervision for technicians. Oversee safe operation and performance of mechanical, electrical and hydraulic maintenance activities. Schedule all maintenance, replacement and inspection. Ensure the troubleshooting of failures, faults, and problems; interpret fault reports, and implement corrective actions. Write reports. Read blueprints and schematics. Assist with high-voltage system maintenance and repair. Develop strategy for improved maintenance diagnostics and operation. Lead and train more junior maintenance personnel. Interact with customers. Ensure all health and safety and operating procedures are followed.

KNOWLEDGE/SKILLS
Diagnosing equipment problems. Electricity, Mechanical, Hydraulics, and Environmental, Health and Safety Fundamentals. Mechanical and electronic testing equipment. Use of power and hydraulic tools. Working around low, medium and high voltage. Reading and interpreting operating and maintenance instructions, and procedure manuals. Writing routine reports and correspondence. Developing strategy. Troubleshooting involving complex variables. Leading and training crews. Supervision of others and site management. Customer service, public relations.

REQUIREMENTS

Education/Training
Technical School Diploma preferred or equivalent combination of education and experience. High school diploma or GED required.

Experience
3 years’ experience in the operation of commercial solar plants or 5 years’ equivalent experience in instrumentation & controls, MV/ HV (medium voltage/high voltage) electrical work. Qualified to perform all routine and emergency operations at an electric generation facility and HV Switchyard. Experience working with plant systems and computerized maintenance management systems.

Credentialing Required/Optional
Journeyman electrician preferred.

POSITION REPORTS TO
Maintenance Manager or Project Manager

CAREER PATH MOVES FROM THIS ROLE
Maintenance Manager
Meteorologist—Intermediate

DESCRIPTION
Monitor and manage data from meteorological towers to prepare reports and presentations to internal and external stakeholders. Assess site suitability and perform micro-siting for development stage projects to optimize solar farm design. Assist in developing the layout for solar farms based on available meteorological data using advanced mapping software. Analyze performance of operating projects to minimize energy losses. Provide analytical support and model capabilities to both finance and development from project conception through project operations. Mentor less-experienced team members.

KNOWLEDGE/SKILLS
Meteorology, atmospheric science, solar energy forecasting, solar farm design, analyses, modeling.

REQUIREMENTS

Education/Training
Bachelor’s and/or Master’s degree in Meteorology, Atmospheric Science or a related science.

Experience
Three to five years’ of related meteorological experience.

POSITION REPORTS TO
Meteorologist—Senior, Director, Meteorology

CAREER PATH MOVES FROM THIS ROLE
Meteorologist—Senior
Operations Specialist II

DESCRIPTION
Support day to day Reporting, Performance, and Monitoring (RPM) for Center Solar activities, acting as the on-shift Operations Specialist for assets in the portfolio. Involved in monitoring of plant and system processes. Operate electrical and SCADA systems. Monitor critical elements in a complex and regulated system. Implement real-time actions to ensure the stable and reliable operation. Comply with applicable NERC Reliability Standards and regional rules and tariffs. Monitor and analyze available market information to identify dispatching and trading opportunities. Analyze and evaluate energy transactions.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
Bachelor’s degree or formal operations apprenticeship training or equivalent preferred.

Experience
3-4 years’ experience in Operations or in a Solar Technician Role is preferred. Competent technical knowledge of plant and system processes, and experience in operating electrical and SCADA systems.

Credentialing Required/Optional
Must obtain NERC RC certification within 12 months.

POSITION REPORTS TO
Operations Manager or RPM Manager

CAREER PATH MOVES FROM THIS ROLE
Operations Manager or RPM Manager
Reliability Engineer

**DESCRIPTION**
Assess solar technical performance and reliability. Identify opportunities for improvement, and recommend remediation actions for operations. Conduct failure mode and effect analysis, root cause assessments, equipment troubleshooting, and system impact studies. Support field operations by performing studies in response to major component and systemic equipment failures. Use information/data to evaluate the future risk to solar structures and performance.

**KNOWLEDGE/SKILLS**
Rotational, generational, and power converter equipment knowledge. Reading and understanding plans, specifications, drawings, and technical documents. Assessing performance and reliability. Conducting failure mode and effect analysis, root cause assessments, equipment troubleshooting, and system impact studies. Analyzing and synthesizing data.

**REQUIREMENTS**

**Education/Training**
Bachelor’s degree in mechanical, civil, or electrical engineering, OR demonstration of equivalent work experience is required as a minimum.

**Experience**
2-3 years’ experience in reliability or design engineering. Solar power operations or Electric Utility operations preferred.

**POSITION REPORTS TO**
Engineering Manager

**CAREER PATH MOVES FROM THIS ROLE**
Engineering Manager, Project Manager
Safety Manager II

DESCRIPTION
Plan, organize and implement the company safety programs. Demonstrate management skills and the ability to manage all aspects of a project safety program. Develop project specific HSE programs and procedures through interface and teamwork with Project / Operations management/supervisory personnel. Maintain Accountability Programs on all projects for safety-related issues and work with supervision to ensure uniform application of safety related discipline. Be the lead safety manager on a project. Serve as a mentor and manage other direct report safety/EHS managers. Demonstrate skills of a Safety Manager III by progressively increasing responsibility and authority. Develop and facilitate EHS project risk assessments. Lead and conduct accident, near miss, and damage investigations with Root Cause Analysis. Develop and monitor EHS performance, progress, preventive and corrective action plans.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
Associates / Bachelor’s degree

Experience
Minimum of 3 years of construction experience managing safety. Demonstrated ability to provide a high level of safety leadership to both management and technicians.

Credentialing Required/Optional
Certified Hygiene Safety Technician (CHST) preferred. Or other BCSP certification preferred. Certification as an OSHA, MSHA. CPR/First Aid instructor preferred.

POSITION REPORTS TO
EHS Senior Leadership or a Group/ Senior Safety Manager

CAREER PATH MOVES FROM THIS ROLE
Senior Safety Manager, Safety Manager III
Solar Technician III
Senior Solar Field Technician, Field Service Tech III

DESCRIPTION
Lay-out, assemble, install, or maintain utility level solar photovoltaic (PV) systems, models and panels in compliance with site assessment and schematics. Measure, assemble and bolt structural framing and solar modules / panels. Responsible for the on-site operations; corrective, preventive, and emergency maintenance, repairs, and replacement. Comply with and follow all safety, LOTO, company, and operations policies and procedures. Train and mentor new technicians, helpers and laborers. Use appropriate hand tools and power tools to perform a variety of functions. Determine materials, equipment, and installation sequences necessary to maximize installation efficiency. Activate and test PV systems. Lift and carry building materials, tools, and supplies. Mix, pour and spread concrete, asphalt, gravel and other materials. Install power whips and harnesses. Perform cleaning, compacting, grading, painting, sanding or stripping operations. Compile or maintain records of system operation, performance, and maintenance. Coordinate work with other crafts and co-workers on the job. Observe functioning of installed equipment or systems to determine hazards and need for adjustments, relocation, or replacement.

KNOWLEDGE/SKILLS
Solar Photovoltaic construction craft and the assembly, installation, or maintenance of solar photovoltaic (PV) systems, reading plans and specifications. Basic Electricity, Mechanical, and Environmental, Health and Safety Fundamentals. Microsoft Office software, SQL Server software, facility management and reporting systems, and computerized diagnostic and troubleshooting tools. Maintenance and electronic testing equipment. Heavy equipment required for facility maintenance, including working knowledge of crane rigging requirements. Safe work practices and LOTO. Leading people and interacting with customers.

REQUIREMENTS

Education/Training
Minimum one-year technical college, trade school or associate's degree. Preference for bachelor’s degree in technical field or equivalent experience. Advanced electrical and mechanical courses. Valid driver's license.

Experience
3-4 years’ relevant experience in solar energy or a related industry (with required education & training) or 3+ years of field electrician experience with Instrumentation & Electrical, Instrumentation & Control will be considered in lieu of applicable solar experience. Solar installer and/or construction experience helpful. Experience leading or training others.

Credentialing Required/Optional
Journeyman level certification preferred. PV Installer Specialist certification or PV Installation Professional certification desirable (NABCEP).

POSITION REPORTS TO
Solar Technician Lead, Solar Technician Supervisor, Solar Site Manager, Manager Renewable Energy

CAREER PATH MOVES FROM THIS ROLE
Solar Technician Lead or Supervisor, Engineer (with degree), Project Manager
Solar Technician Lead
Solar Technician IV, Field Service Tech IV

DESCRIPTION
Lay-out, assemble, install, or maintain utility level solar photovoltaic (PV) systems, models and panels in compliance with site assessment and schematics. Measure, assemble and bolt structural framing and solar modules / panels. Responsible for the on-site operations; corrective, preventive, and emergency maintenance, repairs, and replacement. Comply with and follow all safety, LOTO, company, and operations policies and procedures. Train and mentor new technicians, helpers and laborers. Determine materials, equipment, and installation sequences necessary to maximize installation efficiency. Activate and test PV systems. Perform cleaning, compacting, grading, painting, sanding or stripping operations. Compile or maintain records of system operation, performance, and maintenance. Coordinate work with other crafts and co-workers. Observe functioning of installed equipment or systems to determine need for adjustments, relocation, or replacement. Serve as the person in charge for work team—temporarily assume Technician Supervisor or Site Assistant Manager role as needed. Interact with customers as directed by manager and ensure customer safety. Balance and support facility public relations and community interactions. Ensure all health and safety and operating procedures are followed.

KNOWLEDGE/SKILLS
Solar Photovoltaic construction craft and the assembly, installation, or maintenance of solar photovoltaic (PV) systems, reading plans and specifications. Electricity, Mechanical, and Environmental, Microsoft Office software, SQL Server software, and reporting systems, and computerized diagnostic and troubleshooting tools. Maintenance and electronic testing equipment. Heavy equipment required for facility maintenance. Leading and training other technicians. Site management / operations. Customer service.

REQUIREMENTS

Education/Training
Minimum of Associates degree (electrical or technical) and 2+ years solar experience. Preference for bachelor's degree in technical field or equivalent experience. (5+ years solar experience). Valid driver's license.

Experience
5-7 years’ relevant experience in solar energy or a related industry (with required education & training) or 5+ years of field electrician experience with Instrumentation & Electrical, Instrumentation & Control will be considered in lieu of applicable solar experience. High voltage and sub-station maintenance experience. Solar installer and/or construction experience helpful. Experience leading / supervising and training others.

Credentialing Required/Optional
Journeyman level certification. PV Installer Specialist certification or PV Installation Professional certification desirable (NABCEP).

POSITION REPORTS TO
Solar Technician Supervisor, Solar Site Manager, Manager Renewable Energy

CAREER PATH MOVES FROM THIS ROLE
Solar Technician Supervisor, Engineer (with degree), Project Manager
Asset Manager

DESCRIPTION
Safely maximize the profitability of clean energy assets. Develop budgets for projects and determine project performance. Conduct variance analysis and financial analysis. Develop cash flow forecasting. Assist with managing cash flow to meet budget and contractual needs, and financial targets. Develop other analyses as needed. Collaborate with the operations engineering team to evaluate and improve operational performance. Work with project team in contracting process from vendor bid solicitation to contracting. Work with other staff on operational and maintenance improvements, repair & replacement. Assist project team with compliance with regulations and legal contract requirements, as well as with purchase, operating, and credit agreements, and deliverables. Interface and collaborate with engineers, service providers, local and state authorities, operations, landowners investors. Develop reports regarding asset optimization, and provide recommendations to field teams.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
Bachelor’s degree in finance or engineering

Experience
Minimum 5 years’ experience in the utilities / energy sector; experience with financial metrics & analyses.

POSITION REPORTS TO
Director of Solar Operations or CFO

CAREER PATH MOVES FROM THIS ROLE
Director of Solar Operations or Engineering or Project Manager on other renewable energy systems
Director, Meteorology

DESCRIPTION
Develop and manage the meteorology program to support the company's solar energy generation business and to provide solar energy forecasts for locations of interest. Oversee the compilation of meteorological database for solar projects including archiving of past meteorological data, current operating projects, data, and development project data. Oversee the assessment of site suitability and micro-siting for development stage projects to optimize solar farm design. Manage Data Analysts, Field Technicians, and/or contractors providing meteorological tower erection, data analysis, numerical modeling, and forecasting. Provide analytical support and modeling capabilities to both finance and development from project conception through project operations.

KNOWLEDGE/SKILLS
Technical, commercial, and political aspects driving the solar industry, Meteorology, atmospheric science, solar energy forecasting, solar farm design, analyses, modeling.

REQUIREMENTS

Education/Training
Bachelor’s and/or Master’s degree in Meteorology, Atmospheric Science or a related science.

Experience
10-15 years’ of related meteorological experience.

POSITION REPORTS TO
Vice President Operations, VP Solar Business

CAREER PATH MOVES FROM THIS ROLE
Vice President Operations, VP Solar Business
Director, Operations & Maintenance

DESCRIPTION
Manage overall strategic and operational activities for O&M projects in solar farms and potentially other clean power plants in the future. Manage scheduled and unscheduled maintenance work, out of scope transactional work and inspection work. Monitor subcontractors with regard to crane, mechanical, electrical and other work. Develop mid-term and long-term strategic plans for all O&M site operations. Include business plans, hiring strategies, development of strategic capabilities, and contributions to new site setup.

KNOWLEDGE/SKILLS
Strong business acumen, ability to run O&M projects as a business. Highly familiar with site management structure in the US for complex technical projects in the clean power industry. Strong knowledge and appreciation of the technical, commercial, and political aspects driving the solar industry.

REQUIREMENTS

Education/Training
Bachelor’s degree in relevant discipline or similar degree/ experience required.

Experience
Minimum 5 years’ experience Solar Energy Service Operations with project planning, execution, and history of improvements.

POSITION REPORTS TO
Vice President Operations, VP Solar Business

CAREER PATH MOVES FROM THIS ROLE
Vice President Operations, VP Solar Business
Director, Quality & Operations Support

DESCRIPTION
Standardize and strengthen the company’s quality, environmental, and health & safety approach. Contribute to the quality culture throughout the company. Develop, document, and implement technical documentation, training programs and quality policies to facilitate continuous improvement and the development of a solid QHSE framework. Ensure that subject matter experts review the project specifications, engineering design, and OEM requirements and identify all Quality Control requirements. Train others and manage project QC inspections and documentation to verify compliance with construction or operations Quality Plan(s). Ensure that projects and processes are in line with statutory obligations.

KNOWLEDGE/SKILLS
Business development, site assessments and quality checks. Setting scopes and cost bases for service contracts. Optimizing Operation IT programs, managing and administering subcontractors and partner contractors, conducting investigations, analyzing and reporting findings. Developing and monitoring quality performance. Preventative and corrective action plans.

REQUIREMENTS
Education/Training
Bachelor’s degree required. Master’s degree is preferred.

Experience
10+ years’ of management experience.

POSITION REPORTS TO
Director, Operations & Maintenance, Vice President Operations, VP Solar Business

CAREER PATH MOVES FROM THIS ROLE
Director, Operations & Maintenance, Vice President Operations, VP Solar Business
Engineering Manager

DESCRIPTION
Provide engineering expertise and general support to the onsite operations and maintenance teams. Ensure there's a successful operations strategy. Implement processes and procedures. Lead and develop the engineering team to work on engineering solutions. Read and interpret documents such as operating and maintenance instructions, procedures manuals, blueprints and schematics. Write reports and correspondence. Solve complex problems in various situations. Make presentations to customers and at trade shows. Conduct root cause analysis and support troubleshooting, fault analysis and technical investigations. Lead development of upgrades. Ensure repairs are performed according to standards and procedures. Develop and implement strategic and tactical plans.

KNOWLEDGE/SKILLS
Engineering expertise. Implementing and advising on operations strategy. Implementing processes and procedures. Leading and developing people. Developing engineering solutions. Reading and interpreting documents such as operating and maintenance instructions, procedures manuals, blueprints and schematics. Writing reports and correspondence. Solving complex problems. Making presentations to customers and at trade shows. Conducting root cause analysis and technical investigations. Leading development of upgrades.

REQUIREMENTS
Education/Training
Bachelor's degree in Electrical Engineering or related field.

Experience
Minimum of 5 years of solar technical experience. Collaboration with and leadership of other teams. Experience with various equipment manufacturers, platforms, systems and components. Experience with system design and development of upgrades.

Credentialing Required/Optional
PE (Professional Engineer) certification may be required.

POSITION REPORTS TO
Director of Operations

CAREER PATH MOVES FROM THIS ROLE
Director of Operations, Project Manager
Environmental Engineer
Regulatory Compliance Manager

DESCRIPTION
Using knowledge from various engineering disciplines, develop processes, policies, and practices to prevent or mitigate health, safety, or environmental issues with solar operations. Monitor and address environmental and hazardous concerns such as materials and facility practices. Work with regulatory personnel, conduct inspections of solar sites and facilities, evaluating compliance with environmental, health and safety regulations. Monitor improvements and needed changes to practices.

KNOWLEDGE/SKILLS
Variety of software for analysis and compliance purposes, CAD programming, graphic imaging, system analysis, operations analysis, environmental / health / safety standards and regulations, hazardous materials and chemicals, problem solving.

REQUIREMENTS
Education/Training
Bachelor’s degree in engineering. For advancement, a MS or PhD.

Experience
5+ years’ experience

Credentialing Required/Optional
PE (Professional Engineer) may be required.

POSITION REPORTS TO
Engineering Manager, Materials Scientist, EHS Director

CAREER PATH MOVES FROM THIS ROLE
Materials Scientist
Instrumentation & Electrical Technician—Senior

**DESCRIPTION**
Perform maintenance, calibrate, install, and repair instrumentation including controls and electrical equipment at a solar energy facility. Maintain drawings, logs, and other project records. Carry out approved switching orders and perform high voltage switching. Troubleshoot and repair automated control systems, maintain and repair meteorological, fiber optic and electrical equipment, as well as instrumentation and SCADA systems. Work with voltages up to 230kV. Assist with high voltage system maintenance, repair and in inspecting renewable energy equipment. Interact with customers as directed by manager and ensure customer safety. Assist in all areas of site operations. Follow all health and safety and operating procedures.

**KNOWLEDGE/SKILLS**
Troubleshooting and maintaining equipment. Maintenance, calibration, installation and repair of instrumentation and controls for solar energy equipment. SCADA systems. Customer service. Ability to work with high voltages.

**REQUIREMENTS**

**Education/Training**
High school diploma or GED with completion of an apprentice program or equivalent experience. An Associate's degree from a technical school is common.

**Experience**
Completion of an apprentice program or equivalent experience. Minimum five years of experience troubleshooting and maintaining equipment.

**Credentialing Required/Optional**
ISA CCST certification to Level II is common.

**POSITION REPORTS TO**
Solar Instrumentation and Electrical Technician Supervisor, Solar Site Leader

**CAREER PATH MOVES FROM THIS ROLE**
Solar Instrumentation and Electrical Technician Supervisor, Engineer (with degree), Project Manager
Maintenance Manager
(See Operations Manager / O&M Manager)

DESCRIPTION
This position may also be combined with Operations manager (See Operations Manager / O&M Manager). Oversee operations and staff. The primary objective is accountability for the safe and compliant operations of the utility scale solar farm. Support the site / facility manager in operating the site. Develop strategy for improved maintenance diagnostics and operation. Lead and train more junior maintenance personnel. Interact with customers. Ensure all health and safety and operating procedures are followed.

KNOWLEDGE/SKILLS

REQUIREMENTS

Education/Training
Technical School Diploma preferred or equivalent combination of education and experience. High school diploma or GED required.

Experience
5+ years’ experience in the operation of Solar plants, or 7 years of equivalent experience in instrumentation & controls, MV/HV Electrical work. Qualified to perform all routine and emergency operations at an electric generation facility and HV Switchyard. Experience with operations financial management, forecasting and controls preferred. Experience working with plant systems and computerized maintenance management systems (SAP).

Credentialing Required/Optional
Journeyman electrician preferred. and NESC.

POSITION REPORTS TO
Maintenance Director, Solar Director, Facility Manager

CAREER PATH MOVES FROM THIS ROLE
Maintenance Director, Construction Manager, Facility Manager
Meteorologist—Senior

DESCRIPTION
Monitor and manage data from meteorological towers to prepare reports and presentations to internal and external stakeholders. Assess site suitability and perform micro-siting for development stage projects to optimize solar farm design. Assist in developing the layout for solar farms based on available meteorological data using advanced mapping software. Analyze performance of operating projects to minimize energy losses. Provide analytical support and model capabilities to both finance and development from project conception through project operations. Mentor less-experienced team members.

KNOWLEDGE/SKILLS
Technical, commercial, and political aspects driving the solar industry, Meteorology, atmospheric science, solar energy forecasting, solar farm design, analyses, modeling.

REQUIREMENTS
Education/Training
Bachelor’s and/or Master’s degree in Meteorology, Atmospheric Science or a related science.

Experience
Five to eight years’ of related meteorological experience.

POSITION REPORTS TO
Director, Meteorology

CAREER PATH MOVES FROM THIS ROLE
Director, Meteorology
Operations Manager
O&M Manager, Site Manager, Facility Manager—Solar

DESCRIPTION
Manage all solar farm operations day-to-day at the site for operations (and if job also includes, maintenance). Provide hands-on technical support and supervision for generation equipment and power delivery systems, as well as with other facility civil work, building maintenance, and upkeep. Work with engineering for diagnostics, and to ensure operations. Manage the monitoring of error codes and ensure reporting occurs. If job entails, manage schedule for maintenance and major repairs and ensure parts are ordered and coordinated. Ensure a positive working environment by maintaining discipline, morale, and employee relations. Set goals, prepare performance reviews, salary recommendations, and disciplinary recommendations. Manage the hiring and training of personnel on site. Meet or exceed production and financial targets. Work closely with asset management and accounting to manage P&L/budget, including planning, management and reporting.

KNOWLEDGE/SKILLS
Leadership & supervision in renewable energy, management and communication skills, organization, detail orientation, preparing budgets, keeping records, computer skills, renewable energy, solar farm operations, maintenance practices in renewable energy, mechanical and electrical troubleshooting and maintenance. Reading blueprints, schematics, and operating and maintenance manuals, as well as procedures. Ordering materials, tools & supplies.

REQUIREMENTS

Education/Training
BA/BS in engineering, business; related field or commensurate experience.

Experience
Leadership and technical experience in the power generation, renewable energy industry, electrical marine lines, military operations or related fields. Experience with mechanical and electrical troubleshooting and maintenance.

POSITION REPORTS TO
Director O&M (Operations & Maintenance), Regional Operations Manager, Asset Manager/Director

CAREER PATH MOVES FROM THIS ROLE
Director O&M (Operations & Maintenance), Regional Operations Manager, Asset Director
Reliability Engineering Manager

DESCRIPTION
Deliver reliability analytics to the organization. Provide leadership and expertise to the reliability team, which is responsible for development of the reliability analytics for installed energy components, new products under development, and quality issues in the field. Coordinate with other areas across the organization to develop reliability models that provide cost projections to assess and manage cost risk for solar assets. Work cross-functionally to develop a strategy that supports risk management through reliability modeling. Track and trend reliability predictions compared against actuals and targets. Provide input in new product development through reliability modeling. Provide reliability insights to properly develop and prioritize productivity & repairs projects.

KNOWLEDGE/SKILLS
Reliability modeling techniques and technologies, problem solving; Reliasoft, JMP, and/or SAS modeling software, R or Python programming language.

REQUIREMENTS

Education/Training
Bachelor’s degree in Engineering, Physics, Chemistry, Mathematics, or Computer Science.

Experience
Minimum 7 years’ experience, including technical and leadership experience. Solar experience in design, installation, operation and maintenance.

POSITION REPORTS TO
Reliability Director, Solar Director

CAREER PATH MOVES FROM THIS ROLE
Reliability Director, Installation or Design Engineer
Safety Manager III

DESCRIPTION
Plan, organize and implement the company safety programs. Demonstrate management skills and the ability to manage all aspects of a project safety program. Develop project specific HSE programs and procedures through interface and teamwork with Project / Operations management/supervisory personnel. Maintain Accountability Programs on all projects for safety-related issues and work with supervision to ensure uniform application of safety related discipline. Be the lead safety manager on a project when necessary. Lead job site safety/EHS department. Function under the authority and direction of EHS Leadership. Serve as a mentor for and provide active leadership for their Safety/ HSE managers / personnel. Develop and facilitate EHS project risk assessments. Lead and conduct accident, near miss, and damage investigations with Root Cause Analysis. Develop and monitor EHS performance, progress, preventive and corrective action plans.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
4-year degree in Safety or related field.

Experience
Minimum of 5 years of construction experience managing safety or a related field. Demonstrated ability to provide a high level of safety leadership to both management and technicians.

Credentialing Required/Optional
Certified Hygiene Safety Technician (CHST) or higher BSCP certification. OSHA, MSHA and CPR/First Aid instructor.

POSITION REPORTS TO
EHS Senior Leadership or a Group/ Senior Safety Manager

CAREER PATH MOVES FROM THIS ROLE
Senior Safety Manager
Senior Financial Analyst & Planner

**DESCRIPTION**
Manage the range of assets for the business, from a financial standpoint. Prepare financial statements, forecasts, and reports. Manage the project financing process for various projects. Obtain construction loans, ensure development of equity, and secure debt vehicles. Manage project debts. Assist CFO and CEO with developing expansion or acquisition opportunities based on knowledge of the solar energy market. Manage financial close process. Ensure that business is in compliance and legal requirements are met. Provide supervision to other financial staff. Analyze and propose ways for the company to reduce costs. Assist management in making financial decisions. Perform data analysis and advise senior management on maximizing business profits and reducing costs.

**KNOWLEDGE/SKILLS**

**REQUIREMENTS**

**Education/Training**
Bachelor’s degree required; Graduate degree often required.

**Experience**
5-10 years of experience in another business or financial occupation, such as an accountant, financial analyst or auditor.

**POSITION REPORTS TO**
Finance Manager or Director, or CFO

**CAREER PATH MOVES FROM THIS ROLE**
Finance Manager
Advanced Manufacturing Technician
Production Technician, Manufacturing Maintenance Technician

DESCRIPTION
Use mechanical, hydraulic, electrical, electronic, pneumatic or CNC technologies to set up, test, adjust and perform maintenance on solar manufacturing equipment. With appropriate training and experience, these technicians may also repair or operate, or develop programming for electronic or computer-controlled mechanical systems. Observe and track quality and productivity of manufacturing processes and equipment. Work with mechanical engineers to analyze processes and equipment and develop solutions and improvements. Inspect finished products for quality and adherence to specifications.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
Minimum technical training post-secondary; HS diploma. Associate’s degree preferred.

Experience
1-3 years’ technician experience.

POSITION REPORTS TO
Production Supervisor, Maintenance Supervisor

CAREER PATH MOVES FROM THIS ROLE
Mechanical Engineer (with education), Maintenance Supervisor
Assembler / Fabricator

DESCRIPTION
Assemble the parts that go into solar products. Use various machines and hand tools to create and assemble solar components, solar panels & devices, and other parts. Use schematics and blueprints to create and assemble. Conduct quality assurance of parts and assemblies. Collaborate with engineering and design in product development or changes to product design. Use various electronic, robotic, computer, or hand tools to fit components together and make alignment adjustments. Cut, trim, mold components. For assembly, connect parts with bolts & screws or by welding or soldering. Use hand tools, robots, etc. to assist in assembly. Assist in the testing of new products.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
High school graduate or GED.

Experience
At least one year of experience in the assembly of small, intricate parts and assemblies and in performing expert soldering. Two years of technical experience preferred.

POSITION REPORTS TO
Manufacturing Supervisor or Lead

CAREER PATH MOVES FROM THIS ROLE
Machinist, Tool & Die Maker
CNC Operator

DESCRIPTION
Program and operate computer numeric controlled (computerized) equipment to manufacture components / parts for renewable energy equipment. Program machines to cut pieces according to design specifications, which can then be mass produced. Read schematics and program machine. Measure completed pieces for quality to ensure adherence to design specifications. Remove and replace tooling and other parts of CNC machines as needed. Monitor machines while operating.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
HS Diploma (or equivalent). May require a technical program or internship in CNC.

Experience
1-3 years

POSITION REPORTS TO
CNC Supervisor or Manager, Design Manager, Manufacturing Manager

CAREER PATH MOVES FROM THIS ROLE
Advanced Manufacturing Technician, Instrumentation and Controls Technician
Industrial Engineer
Manufacturing Engineer

DESCRIPTION
Develop and redesign solar component manufacturing processes to improve productivity and efficiency. Assess and study manufacturing and solar industry needs and issues. Improve product reliability and quality. Resolve production issues and develop ways to reduce costs.

KNOWLEDGE/SKILLS
Quality Control, solar systems, process and system design, operations analysis, statistical analysis, technology design, computer programming, equipment evaluation, mathematical modeling.

REQUIREMENTS
Education/Training
Bachelor’s degree in engineering, match or science. Advanced roles may require a Master’s degree & licensure.

Experience
5+ years’ experience.

Credentialing Required/Optional
PE (Professional Engineer) may be required.

POSITION REPORTS TO
Engineering Manager or Manufacturing Manager

CAREER PATH MOVES FROM THIS ROLE
Other engineering roles, Engineering Manager, Director of Manufacturing
Inspector & Quality Control

DESCRIPTION
Responsible for verifying that Solar components are manufactured according to specifications. Perform type of inspection required for part or component—quick visual or longer, detailed one. Record results of examinations and submit quality control reports. Ensure that design specifications are followed precisely, to maintain the quality of the manufacturing process.

KNOWLEDGE/SKILLS
Quality control and inspection practices, material science, reading design schematics and specifications, testing procedures and tools, writing quality control reports.

REQUIRED
Education/Training
Minimum associate’s degree in quality control, material science, or related field. Bachelor’s degree preferred.

Experience
2+ years’ inspection and quality control of manufactured solar energy components and structures. Inspection and quality control of Solar components preferred.

POSITION REPORTS TO
Quality Control Manager

CAREER PATH MOVES FROM THIS ROLE
Quality Control Manager, Mechanical or Electrical Engineer (with education)
Fleet Manager
O&M Manager

DESCRIPTION
Contract and manage 3rd party or internal solar technician service teams to install or service commercial / utility size solar sites. Manage logistics and system monitoring. Evaluate technician teams. Ensure service and operation levels are maintained. Ensure quality of technical services and customer service. Optimize the dispatching process for service technicians to manage costs.

KNOWLEDGE/SKILLS
Commercial/utility solar industry and solar systems, coordinating people and resources, vendor management programs, logistics, problem solving, decision making.

REQUIREMENTS
Education/Training
Bachelor’s degree. Trade experience in the field with solar installations and/or service.

Experience
5+ years’ experience

Credentialing Required/Optional
PV Commissioning & Maintenance Specialist or PV Installation Professional certification (NABCEP) desirable.

POSITION REPORTS TO
Solar O&M Director

CAREER PATH MOVES FROM THIS ROLE
Solar O&M Director, Solar Instructor
Industrial Engineering Manager
Manufacturing Engineer Manager

DESCRIPTION
Direct research & development activities that support engineering initiatives. Plan and lead engineering activities (industrial / manufacturing). Provide leadership to engineers. Design and develop components and systems. Work with engineers to develop quality standards for components, parts, assembly and testing. Manage engineering support needed for sales group for contracts, proposals, and customer meetings. Make detailed resource plans and schedules to reach technical goals. Direct and coordinate the design of equipment and machinery. Discuss organizational engineering needs with other leaders. Determine budgets, staff needs, and resource needs. Hire and train staff.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
Bachelor’s degree in relevant engineering discipline required. Masters degree preferred.

Experience
6-10 years experience as an engineer. Experience leading engineering teams and working on complex projects.

Credentialing Required/Optional
PE (Professional Engineer) a plus.

POSITION REPORTS TO
Engineering Director, Director Solar

CAREER PATH MOVES FROM THIS ROLE
Engineering Director, Manager of other engineering discipline
Commissioning Technician

DESCRIPTION
Work with team to perform required system inspections on utility photovoltaic (PV) power plants. Perform visual and mechanical inspections and electrical testing to specifications of construction documents, prior to energization date. Document all inspection findings and test results, and communicate the findings and test results with Commissioning Lead. Document and assist with PV system trouble shooting and corrective actions. Oversee third party testing and inspections. (Transformers, MV audits, MV cable tests, Fiber optics, etc.) Ensure site documentation is prepared for upcoming sites. Ensure proper use of PPE and conformity to safety procedures. Care for tools and report any missing or broken tools and needed supplies to Lead.

KNOWLEDGE/SKILLS
Photovoltaic systems, use of multi-meter, reading and using electrical single-line and three-line diagrams, safe work practices, visual and mechanical inspections and electrical testing.

REQUIREMENTS
Education/Training
HS Diploma or equivalent. Training in photovoltaic systems preferred.

Experience
Minimum 1-year Photovoltaic installation experience.

Credentialing Required/Optional
PV Commissioning & Maintenance Specialist certification (NABCEP) desirable.

POSITION REPORTS TO
Commissioning Manager

CAREER PATH MOVES FROM THIS ROLE
Commissioning Engineer
Concrete Worker

DESCRIPTION
Support the Facility Manager in all areas of the operating site. Ensure a positive working environment by maintaining morale and employee relations. Lead the use of maintenance documentation, reporting tools and performance systems necessary for reporting and performance improvement. Provide hands-on technical support and supervision for generation equipment and power delivery systems, as well as with other facility civil work, building maintenance, and upkeep.

KNOWLEDGE/SKILLS
Concrete pouring, Rebar tying, Concrete finishing

REQUIREMENTS
Education/Training
High school diploma, experience in concrete work, Apprenticeship preferred.

Experience
1-2 years’ experience.

POSITION REPORTS TO
Foreman, Construction Manager

CAREER PATH MOVES FROM THIS ROLE
Solar Technician I (with additional training)
**Crane Operator**

**DESCRIPTION**
Operate cranes (hydro cranes, crawler cranes, and/or pile driving hammers) to hoist, move and place materials and objects, and raise, lower and rotate boom and load lines. Observe load hook-up, safety of load, stability of load and load weights. Ensure safety procedures are adhered to at all times. Perform daily inspection of cranes. Monitor weather conditions and site conditions. Clean, maintain and lubricate equipment. Obtain the required permits. Perform other duties as assigned on a job site when not operating a crane.

**KNOWLEDGE/SKILLS**
Safe operation of cranes. Safety practices. Reading and interpreting documents such as operation and maintenance manuals, procedures, and safety documents. Writing reports. Math skills and computing rate, ratio, percent. Problem solving.

**REQUIREMENTS**

**Education/Training**
HS Diploma or GED preferred. Completed apprenticeship crane operation preferred. Valid driver's license.

**Experience**
1-3 years' related experience and/or training or equivalent combination of education and experience.

**Credentialing Required/Optional**
Nationally accredited certification (i.e. NCCCO, NCCER or OECP).

**POSITION REPORTS TO**
Solar Site Supervisor, Crew Chief, or Project Manager

**CAREER PATH MOVES FROM THIS ROLE**
Crane or Heavy Equipment Supervisor, Mechanical Engineer (with education)
Equipment Operator—Light

DESCRIPTION
Perform miscellaneous light equipment operations across the project for construction, installation or maintenance.

KNOWLEDGE/SKILLS
Equipment capacity, rigging, inspections, maintenance, equipment operation, reading & interpreting documents (safety rules, operating & maintenance instructions, procedure manuals); Writing reports, math skills, computing rate, ratio, percent. Drawing & interpreting graphs.

REQUIREMENTS
Education/Training
HS Diploma. Training on equipment. May require apprenticeship on equipment.

Experience
1-3 years’ experience operating light equipment

Credentialing Required/Optional
May require some certifications (i.e. forklift operator), Class A CDL to haul equipment.

POSITION REPORTS TO
Construction Manager or Foreman or Supervisor, Equipment Company Operator, Medium or Heavy Equipment Operator

CAREER PATH MOVES FROM THIS ROLE
Equipment Operator—Medium, Equipment Operator—Heavy, Construction Foreman or Construction Supervisor
Laborer
General Laborer

DESCRIPTION
Responsible for performing tasks involving physical labor at construction projects, excavations, and demolition sites while operating hand and power tools of all types, and other equipment and instruments. Lift and carry materials, tools & supplies. Fill expansion joints with caulking and rebar placement. Clean and prepare sites, dig holes & trenches, clean up rubble, and assist other craft workers. Dig, spread and level dirt and gravel is a pick or shovel. Perform variety of routine, non-machine tasks.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
HS Diploma or GED

Experience
1-3 months related experience and/or training or equivalent combination of education & experience.

POSITION REPORTS TO
Craft Supervisor or Foreman

CAREER PATH MOVES FROM THIS ROLE
Craft / Tradesmen (with training)
Site Surveyor

DESCRIPTION
Perform miscellaneous duties across the project to include surveying, quality control, and scheduling. Survey and inspect site readiness and capabilities for projects. Conduct land title surveys, topographic surveys, boundary surveys, and construction-staking and as-built surveys. Prepare legal descriptions. Coordinate with crews and technicians. Perform quality control of field activities, project deliverables and related calculations.

KNOWLEDGE/SKILLS
Surveying, Quality Control, Calculations/Math, GIS & mapping, LIDAR, Auto-CAD.

REQUIREMENTS

Education/Training
High School diploma; some positions may require Bachelor's degree.

Experience
2 years surveying, Quality Control.

Credentialing Required/Optional
Licensed professional surveyor

POSITION REPORTS TO
Engineering, Project Manager

CAREER PATH MOVES FROM THIS ROLE
Senior Surveyor
Solar Assembler / Basic (Entry) Installer

Basic Installer

**DESCRIPTION**
Responsible for layout and assembly of solar PV systems / panels. Work with solar PV assembly crew to install panels. Follow schematics, instructions and drawings regarding assembly and installation. Potentially carry panel components and mounts over uneven terrain. Support the work of the assembly crew doing finishing work, weather sealing, etc.

**KNOWLEDGE/SKILLS**
Solar pv (photovoltaic) systems, PV installation, basic construction skills, mechanical and electrical, following directions, working at heights, climbing ladders with heavy equipment.

**REQUIREMENTS**

**Education/Training**
Minimum HS diploma preferred; ability to add, subtract multiply & divide whole numbers and fractions.

**Experience**
1-3 years

**Credentialing Required/Optional**
PV Installer Specialist certification or PV Installation Professional certification desirable (NABCEP).

**POSITION REPORTS TO**
Solar PV Crew Chief, Solar / PV Technician

**CAREER PATH MOVES FROM THIS ROLE**
Solar PV Installer, Crew Chief, Electrician, Solar Technician
Truck Driver

DESCRIPTION
Drive a truck / trailer to transport several types of construction equipment and materials throughout and between jobsites. Load and unload equipment and materials, including solar panels and work with crane operator for loading/unloading as needed. Secure loads according to load limits. Perform basic vehicle and equipment maintenance such as filling tank with gas, checking oil, keeping vehicle and equipment clean and ensuring required inspections are completed. Haul counterweights for cranes, construction equipment, and also water, sand and gravel. Ensure safety procedures and safe driving practices are followed. Communicate between office / shop / jobsite regarding status of hauls, any concerns or issues with equipment and materials. Perform daily inspection of truck. Obtain required permits. Advise supervisor if truck needs major repairs and maintenance.

KNOWLEDGE/SKILLS
Reading cargo manifests and delivery instructions, writing correspondence, math skills and able to figure or calculate load size versus requirements.

REQUIREMENTS
Education/Training
HS diploma or GED; 1 yr. certificate from college or technical school, driving school.

Experience
1-2 years’ experience transporting construction equipment and materials.

Credentialing Required/Optional
Valid Class A commercial driver’s license.

POSITION REPORTS TO
Transportation Manager or Superintendent, Site Manager

CAREER PATH MOVES FROM THIS ROLE
Equipment Operator, Transportation Supervisor or Coordinator
Warehouse Assistant
Warehouse Support

DESCRIPTION
Responsible for working directly with Warehouse Manager to coordinate the shipping, receiving and inventory. Responsible for cleanliness and organization of warehouse. Inspect all equipment and rigging coming in or leaving the warehouse. Assist with loading and unloading trucks. Prepare orders, process requests, and pull equipment and materials. Assist with inventory management. Interpret specifications and work orders. Requisition, obtain and distribute supplies and materials. Read, prepare, collect and maintain reports.

KNOWLEDGE/SKILLS
Construction practices, warehouse practices, reading and interpreting specifications and reports. Using tools and equipment. Inventory. Data entry and computer skills. Lifting and moving objects regularly between 10 and 50 pounds; occasionally lifting much heavier.

REQUIREMENTS

Education/Training
HS Diploma or GED preferred. 1-2 year certificate from college or technical school and/or 6 months to one year of related experience.

Experience
Training or 6 months to a year of related experience.

POSITION REPORTS TO
Warehouse Foreman, Supervisor or Manager; Supply Chain Manager

CAREER PATH MOVES FROM THIS ROLE
Warehouse Foreman
Buyer
Procurement Specialist, Procurement Associate

DESCRIPTION
Provide commercial support to pre & post award projects and report to the assigned Procurement Manager or Director of Procurement. Prepare and issue RFP equipment packages to suppliers. Work with engineering to answer RFP questions. Receive and evaluate proposals. Negotiate pricing with suppliers. Work closely with engineering project management, scheduling, legal and insurance. Secure completed purchase requisition and purchase terms and conditions, and confirm final purchase order. Monitor, support and administer all issued purchase orders. Manage stakeholder & supplier interaction. Assist in schedule development for project proposals. Assist estimating with equipment scope and price.

KNOWLEDGE/SKILLS
Oral and written communication, engineering, construction industry standards, specifications and organizations. RFP and contracting process for purchasing from suppliers. Negotiating and problem solving.

REQUIREMENTS
Education/Training
4 year college degree in business field or combination of education and experience. Additional financial, business or legal degree and additional solar training needed for advancement.

Experience
Minimum 3 years’ experience in procurement (preferably with engineering or construction industries).

POSITION REPORTS TO
Senior Buyer or Procurement Manager or Director

CAREER PATH MOVES FROM THIS ROLE
Senior Buyer or Procurement Manager or Director
Construction Manager

DESCRIPTION

KNOWLEDGE/SKILLS
Business development, Solar systems, estimating, construction management, electrical systems and SCADA, planning, procurement, health & safety, MS Office, reading and interpreting blueprints, procedures, government regulations, presentations to management and public groups, writing reports, managing construction crew, interpreting technical instructions using math, algebra & geometry.

REQUIREMENTS
Education/Training
Bachelor’s degree (BS) in Construction management, engineering or related field; equivalent combination of education and experience.

Experience
Three years of construction industry experience / knowledge of construction techniques, estimating and construction management.

POSITION REPORTS TO
Project Manager or Director of Solar Projects

CAREER PATH MOVES FROM THIS ROLE
Construction Manager II or Project Manager or Superintendent
Equipment Operator—Heavy

Equipment Operator

DESCRIPTION
Operate heavy machinery, such as a tractor, bulldozer, backhoe, or excavator, for the purposes of construction, demolition, or excavation. May be responsible for routine maintenance or repairs.

KNOWLEDGE/SKILLS
Equipment capacity, rigging, inspections, maintenance, equipment operation, reading & interpreting documents (safety rules, operating & maintenance instructions, procedure manuals); Writing reports, math skills, computing rate, ratio, percent. Drawing & interpreting graphs.

REQUIREMENTS

Education/Training
HS Diploma. For Crane—NCCCO or similar training on other Equipment. May require apprenticeship on equipment.

Experience
Minimum 5 years’ experience operating heavy equipment.

Credentialing Required/Optional
Class A CDL to haul equipment; NCCCO Certification, Municipality may require license to operate or transport equipment. Pile-driver operators may need a crane license in some cities & states.

POSITION REPORTS TO
Construction Manager or Foreman or Supervisor, Equipment Company Operator

CAREER PATH MOVES FROM THIS ROLE
Construction Foreman or Construction Supervisor
Equipment Operator—Medium

DESCRIPTION
Operate medium machinery, for the purposes of construction, demolition, or excavation. May be responsible for routine maintenance or repairs.

KNOWLEDGE/SKILLS
Equipment capacity, rigging, inspections, maintenance, equipment operation, reading & interpreting documents (safety rules, operating & maintenance instructions, procedure manuals); Writing reports, math skills, computing rate, ratio, percent. Drawing & interpreting graphs.

REQUIREMENTS

Education/Training
HS Diploma. For Crane—NCCCO or similar training on other Equipment. May require apprenticeship on equipment.

Experience
3 Years’ experience operating medium equipment

Credentialing Required/Optional
Class A CDL to haul equipment; NCCCO Certification, Municipality may require license to operate or transport equipment. Pile-driver operators may need a crane license in some cities & states.

POSITION REPORTS TO
Construction Manager or Foreman or Supervisor, Equipment Company Operator, Heavy Equipment Operator

CAREER PATH MOVES FROM THIS ROLE
Equipment Operator—Heavy, Construction Foreman or Construction Supervisor
Journeyman Electrician

**DESCRIPTION**
Responsible for installing, maintaining, and repairing electrical wiring, equipment, fixtures and ensuring that work is in accordance with relevant codes. Ensure the proper functioning of all electrical units and components. Complete scheduled checks to spot malfunctions. Use electrical testing and repair equipment. Maintain records of all electrical inventories and place orders for spare parts and equipment. Maintain a log of electrical repair and maintenance works. Journeyman Electricians may supervise Apprentice Electricians.

**KNOWLEDGE/SKILLS**
Long-term on the job training. Repair or replace complex electrical lines and equipment. Electrical systems and the appropriate tools needed to fix and maintain them. Troubleshooting skills—must diagnose problems in increasingly complex electrical systems. Able to lift heavy tools, cables, and equipment on a regular basis.

**REQUIREMENTS**

**Education/Training**
Bachelor’s degree or an Associate’s degree or diploma in electrical engineering, mechanical engineering or related field.

**Experience**
4+ years working as an electrician.

**Credentialing Required/Optional**
"Journeyman" electrical license.

**POSITION REPORTS TO**
Construction Manager, Project Manager, Electrician Supervisor or Manager

**CAREER PATH MOVES FROM THIS ROLE**
Electrician Supervisor or Manager
PV Site Inspector
QA Inspector, Inspector & Quality Control Coordinator

DESCRIPTION
Inspect the solar / photovoltaic (PV) project, job site, and construction, maintaining quality control. Determine degree of conformance of materials, equipment and installation of materials and equipment to specifications, codes and design requirements. Generate reports of conditions found during inspection activities. Notify management of significant problems. Complete documentation to attest to satisfactory completion of inspection or test activities. Provide oversight of activities relating to the construction for mechanical, civil, and electrical components of solar sites including substations, roads, environmental, excavations, concrete, rebar, transmission lines, solar racking and PV installation, underground utilities, steel erection, welding, piping, valves, pumps, compressors and a wide variety of other mechanical and electrical equipment. Ensure that defined requirements of schedule and quality are met. Prevent deficiencies through pre-construction quality control inspections, while working with field teams. Interface with field supervision to maintain an open line of communication and reporting.

KNOWLEDGE/SKILLS
Understanding of how the project is to be completed properly per code and customer requirements. Work plans or work process documentation. GPS operations. NEC, NESC, ASTM’s, ANSI, IEEE and local building and construction codes. 29 CFR 1910 and 1926, ensuring OSHA standards are being maintained, computer skills (MS office).

REQUIREMENTS
Education/Training
Minimum High School diploma & experience; degree preferred. 4 year apprentice program or other training (combined with experience). An OSHA 30 hour is preferred.

Experience
Previous skilled labor experience; minimum 3 years’ experience in solar; prefer experience with work plans or work process documentation. Familiarity with GPS operations. 5 years supervising crews in electrical, structural, mechanical or civil work.

Credentialing Required/Optional
PV System Inspector certification (NABCEP) desirable

POSITION REPORTS TO
Solar Construction Site Supervisor or Manager

CAREER PATH MOVES FROM THIS ROLE
Construction Manager, Project Manager
Solar Installer
Photovoltaic (PV) Installer

DESCRIPTION
Plan, lay-out, assemble and install solar modules, photovoltaic (PV) panels, or support structures. Install structural and mechanical components. Coordinate work with other crafts and co-workers on the job. Use appropriate hand tools and power tools to perform a variety of functions in accordance with codes and standards using drawings, schematics, and instructions. Lift and carry building materials, tools, and supplies. Examine / inspect field conditions and identify any problems, inaccuracies, and continuous improvement opportunities. Clean tools, equipment, material, and work areas. Observe functioning of installed equipment or systems to determine need for adjustments, relocation or replacement. If certified, operate equipment and ensure equipment is maintained in good working order. Participate in all pre-job work planning and safety discussions. Follow all safety and operating procedures. Identify safety hazards and take necessary corrective action to eliminate or mitigate safety hazards. Participate in on-the-job training with co-workers.

KNOWLEDGE/SKILLS
Plans & specifications for solar PV panels, including 3-dimensional drawings, site assessment, system design, solar PV systems, use of hand tools, listening and following directions, Solar pv (photovoltaic) systems, basic construction skills, mechanical and electrical, working at heights, climbing ladders with heavy equipment.

REQUIREMENTS
Education/Training
Associate's degree or Journeyman level; Engineering, skilled trades or electrical training. Bachelor's degree preferrable.

Experience
3-5 years’ experience working as a laborer or in any construction craft as a helper with basic knowledge in solar PV construction craft.

Credentialing Required/Optional
PV Installer Specialist certification or PV Installation Professional certification desirable (NABCEP).

POSITION REPORTS TO
PV Technician or Lead Installer (Crew Chief) or Project Manager

CAREER PATH MOVES FROM THIS ROLE
PV Technician, Lead Installer (Crew Chief), Engineer (with education), Solar Project Manager, System Designer
Solar PV Crew Chief
Solar Foreman

DESCRIPTION
Supervise teams of basic PV (photovoltaic) installers at a worksite and may oversee a variety of craft workers. Coordinate work, ensure schedules are followed, provide leadership to crews. Ensure safety, operations and installation specifications, and procedures are followed. Provide quality control for tasks and project. Serve as onsite supervisor to lead small teams to complete solar projects. Establish order of work, assist crew with lay-out of materials and tools, track progress, and review work and documentation. Complete required documentation and reporting. Support project manager and site supervisor. If needed, perform trade work in area of qualification. May participate in hiring, training, reviewing performance of crew members.

KNOWLEDGE/SKILLS
Quality Assurance, Safety, Fundamentals of solar photovoltaic (pv), Basic practices and procedures in pv installation, Basic construction skills, mechanical and electrical, Supervising various crafts, reading blueprints, math and computer experience, Proficient in at least one craft area.
Commissioning Manager

DESCRIPTION
Oversee regional installation / construction, testing, and commissioning operations from utility scale solar / photovoltaic project kickoff through customer acceptance. Responsible for planning, checking, quality assurance, monitoring, evaluation, and preparation of commissioning reports to management. Staff, train, and manage solar commissioning team personnel. Create guidelines and procedures to ensure all project activities are completed according to a standard process, project plan and budget. Carry out the commissioning and start-up according to the commissioning, start-up, operation and maintenance manuals. Forecast, monitor, estimate time and costs of commissioning activities. Conduct routine audits as necessary. Interact with engineering to troubleshoot any technical issues. Ensure compliance with all Company and safety policies and procedures. Prepare detailed schedules of the commissioning for each project. Prepare commissioning documents for each site according to contract obligations. Manage 3rd party testing when necessary. Review and verify completed testing documentation. Ensure project is completed by deadline date.

KNOWLEDGE/SKILLS
Electrical and mechanical theory. Team supervision. Budgeting procedures. Commissioning operations, start-up and practices for Solar projects, including reading operations and maintenance manuals and procedures. Interpreting engineering drawings. Organizing, instructing and supervising Commissioning crews in all facets of construction. Supervising the testing, commissioning and start-up of high, medium, low voltage and dc equipment / electrical and electronic systems. Leadership and supervision. Writing correspondence and compiling reports. Speaking to groups and making recommendations. Troubleshooting and data analysis. Computer skills.

REQUIREMENTS

Education/Training
Bachelor’s degree in construction management, engineering or related field; equivalent combination of education and experience (5-7 years).

Experience
5-7 years’ experience with power generation equipment and commissioning procedures. Construction and commissioning experience. 5 years’ experience in a supervisory role.

Credentialing Required/Optional
PV Commissioning & Maintenance Specialist certification (NABCEP) desirable. Also, there's the REP—Renewable Energy Professional and Certified Energy Manager from the Association of Energy Engineers (aeecenter.org).

POSITION REPORTS TO
Director of Solar Commissioning; Director of Solar Projects

CAREER PATH MOVES FROM THIS ROLE
Construction Manager, Director of Solar Commissioning
Construction Manager II

DESCRIPTION

KNOWLEDGE/SKILLS
Business development, Solar systems, estimating, construction management, electrical systems and SCADA, planning, procurement, health & safety, MS Office, reading and interpreting blueprints, procedures, government regulations, presentations to management and public groups, writing reports, managing construction crew, interpreting technical instructions using math, algebra & geometry.

REQUIREMENTS
Education/Training
Bachelor’s degree (BS) in Construction management, engineering or related field; equivalent combination of education and experience).

Experience
Five years in a supervisory role of construction industry including construction techniques, estimating and construction management.

POSITION REPORTS TO
Project Manager or Director of Solar Projects

CAREER PATH MOVES FROM THIS ROLE
Construction Manager III or Project Manager or Superintendent
Construction Manager III

DESCRIPTION
Responsible for directing, planning, and managing Solar construction project(s) on jobsite from inception to completion. Responsible for overall direction and evaluation. Oversee all construction contracts within area of responsibility, and supported by Site Teams. Monitor and oversee construction activities and personnel. Keep Superintendent II and Construction Manager II informed of overall construction activity progress and performance. Monitor and review construction performance indicators. Manage construction package elements of procurement process. Follow all health and safety procedures.

KNOWLEDGE/SKILLS
Business development, Solar systems, estimating, construction management, electrical systems and SCADA, planning, procurement, health & safety, MS Office, reading and interpreting blueprints, procedures, government regulations, presentations to management and public groups, writing reports, interpreting technical instructions using math, algebra & geometry, Supervising construction crew, construction tools, machinery methods & procedures, forecasting for projects.

REQUIREMENTS

Education/Training
Bachelor’s degree (BS) in Construction management, engineering or related field; equivalent combination of education and experience.

Experience
Seven years in a supervisory role of construction industry including construction techniques, estimating and construction management.

POSITION REPORTS TO
Project Manager or Director of Solar Projects

CAREER PATH MOVES FROM THIS ROLE
Director of Solar Projects
Project Manager

DESCRIPTION
Manage solar projects to ensure projects are completed within scope, on schedule, and within budget. Work closely with vendors and personnel to engineer, design, site, permit and construct assigned projects. Manage all aspects of projects including the coordination of regulatory approvals, and interface with regulators, local elected officials and town department managers. Manage the development of and process for evaluation of bid documents for engineering, design and construction, and for the procurement of materials and equipment. Ensure all aspects of projects are documented and completed according to company policies and all regulations and laws. Manage financial risk exposure and ensure timely communication and reporting with management including project scope, budget and schedule. Integrate and manage a cross-functional team to achieve project goals including the team's development of a project plan, schedule, communication plan and control methodology. Manage the planning, engineering, siting/permitting, procurement, construction, commissioning and close out project phases. Manage execution of the project plan and project change control management. Coordinate development of project budget.

KNOWLEDGE/SKILLS
Ability to investigate and solve problems, analyze data, write effective reports and make presentations. Running meetings, motivating others. Managing multiple solar projects concurrently. Engineering / technical knowledge (analytical).

REQUIREMENTS

Education/Training
Bachelor’s degree in Engineering (preferred). Bachelor’s degree in Finance, Business or equivalent degree considered OR equivalent experience.

Experience
Minimum 5-10 years related experience. Experience with project management methodologies.

Credentialing Required/Optional
PE (Professional Engineer) and project management (PMP) certification are highly desirable; PV Installation Professional certification (NABCEP) may be applicable.

POSITION REPORTS TO
Manager of Solar Projects, Manager—Construction—Solar

CAREER PATH MOVES FROM THIS ROLE
Manager of Solar Projects, Manager—Construction Solar, Manager Commissioning
## Analyst / Researcher

### DESCRIPTION
Work across Solar project phases including development, permitting, construction, and operational. Support or lead conceptual design studies, Solar constraint analyses, site suitability, Solar permitting and technical studies, O&M analysis, constructability analyses, cost studies, decommissioning studies, and market and supply chain assessment. Maximize revenue and efficiency for Solar customers by identifying and initiating organizational responses for conditions, opportunities, and issues related to safety, production, and performance. Collect production data and perform energy analyses. Use technical knowledge of Solar systems. Support and serve the production team, field technical operations and asset management to address all Solar related production issues. Assist in the technical evaluation of proposals. Build and manage dashboards with performance and operations data. Assist in the development of forecasts and pro-forma analyses.

### KNOWLEDGE/SKILLS
Knowledge of field applications is needed to translate the data to usable results and procedures for development and operations teams. Database structures, engineering calculations. Analyzing equipment performance and identifying performance issues using software tools. Performing calculations and collecting and analyzing data.
Research Engineer
Research and Development Engineer

DESCRIPTION
Plan and manage engineering projects to develop solar technologies and processes that produce the most efficient and cost-effective electricity. Design, develop and analyze/evaluate solar components and solar power systems. Conduct research and develop improved technology. Prepare financial estimates. Build processes and systems for testing. Lead teams of technicians, engineers and scientists. Produce and analyze designs.

KNOWLEDGE/SKILLS
Conducting research, interviewing subject matter experts. Developing solutions from research and analysis. Advanced engineering and design. Solving complex engineering problems. Communicating results and information. Writing reports. Collaborating with others to solve problems, and develop and implement projects.

REQUIREMENTS
Education/Training
Bachelor’s degree required. Masters degree preferred.

Experience
3 years’ engineering experience. Design and research experience.

Credentialing Required/Optional
PE (Professional Engineer certification) may be required.

POSITION REPORTS TO
Engineering Manager

CAREER PATH MOVES FROM THIS ROLE
Engineering Manager, Project Manager
Technical Trainer
Technical Instructor

DESCRIPTION
Educate employees about solar energy in various technical topic areas related to processes, equipment, environment, resources, etc. Facilitate classroom training and on the job coaching for businesses, colleges or learning providers. Continue to develop knowledge regarding changes and industry updates, and update training to reflect this. Use field experience to provide real-life scenarios and discussion. Develop training programs, guides, assignments and skill assessments/evaluations. Instruct training and conduct demonstrations on equipment. Supervise trainees in the safe use of equipment and walk-through of procedures. Assess skills, evaluate performance and monitor trainee progress. If applicable, develop relationships with other businesses to provide training experiences for students.

KNOWLEDGE/SKILLS
Training & communicating on technical topics. Developing training curriculum. Writing procedures and instructions. Creating successful learning environments, and developing variety of methods of teaching topics so students can learn in ways that work for them. Developing and using JPM’s (job performance measures). Evaluating / assessing skills.

REQUIREMENTS

Education/Training
Bachelor’s degree preferred, but may not be required.

Experience
Minimum 2 years in the topic area in which Trainer will be providing training.

Credentialing Required/Optional
Requirements for licensing and certification vary by state.

POSITION REPORTS TO
Training Manager

CAREER PATH MOVES FROM THIS ROLE
Training Manager, Operations Manager
Materials Scientist
Research & Development Engineer

DESCRIPTION
Develop processes and new materials to reduce cost, improve efficiencies with solar projects. Test research materials and structures to be used in various environments on solar projects. Conduct research to develop new materials and improvements to solar panels and structures.

KNOWLEDGE/SKILLS
Effects of various temperatures and environments on materials, materials properties, process optimization, advanced math & science, materials fabrication and processing, solar innovations and design.

REQUIREMENTS

Education/Training
MS or PhD. In applied physics, materials science or chemistry.

Experience
5+ years’ experience.

Credentialing Required/Optional
May require engineering license.

POSITION REPORTS TO
Director or VP of Manufacturing / Fabrication or Director of Solar or Director of Engineering

CAREER PATH MOVES FROM THIS ROLE
Senior Engineer, Director of Fabrication or Manufacturing
Training & Development Manager

DESCRIPTION
Strategically manage all elements of the company’s technical and non-technical training programs. Define the training requirements for each staff position and oversee a system of online, classroom and OJT training using a network of trainers. Track progress in the company’s online Learning Management System (LMS). Generate new course content and modify existing courses for changes and updates needed. Work collaboratively with trainers and operations. Manage employee development and new hire orientation. Plan (with organizational leaders), develop, and facilitate or procure training and staff development programs that meet the needs of the organization. Proactively manage all aspects of T&D program delivery from start to finish, including content creation, instructor coordination, project planning, and logistics. Monitor training for effectiveness. Coach leaders in skill assessment and performance evaluation. Develop testing / assessment tools and procedures. Support continuous improvement. Manage training materials, supplies & the training budget.

KNOWLEDGE/SKILLS

REQUIREMENTS
Education/Training
Generally bachelor’s degree desired; Master’s degree preferred.

Experience
5 years’ experience in similar role or combination of knowledge and experience in leading training efforts.

POSITION REPORTS TO
Director of Operations, Human Resources Director

CAREER PATH MOVES FROM THIS ROLE
Director of Operations, Project Manager, Human Resources Director
American Clean Power Occupations & Career Maps

Additional Research Sources:

BLS – Bureau of Labor Statistics
CANWEA “A Roadmap to Standardized Core Competencies for Wind Turbine Technician Training”
Department of Energy (DOE) https://www.energy.gov/eere/education/explore-clean-energy-careers-0
Energy Futures Initiative (EFI) https://energyfuturesinitiative.org/
Green Citizen https://greencitizen.com/renewable-energy-jobs/
Illinois Solar Energy Association https://www.illinoissolar.org/jobs
Indeed https://www.indeed.com
Interstate Renewable Energy Council (IREC) https://www.irecsolarcareermap.org
Job Descriptions previously compiled by American Clean Power (ACP)
LinkedIn https://www.linkedin.com
Midwest Renewable Energy Association (MREA) (solar) https://www.solarenergy.jobs
National Association of State Energy Officials (NASEO) https://www.naseo.org
NAICS/SOC codes
National Solar Jobs Census 2019, Washington, DC, February, https://www.thesolarfoundation.org/national/#:~:-text=As%20of%202019%2C%20the%20National,nationwide%20from%202018%20to%202019
US Energy Jobs https://www.usenergyjobs.org/
American Clean Power is the voice of companies from across the clean power sector that are powering America's future, providing cost-effective solutions to the climate crisis while creating jobs, spurring massive investment in the U.S. economy and driving high-tech innovation across the nation. We are uniting the power of America's renewable energy industry to advance our shared goals and to transform the U.S. power grid to a low-cost, reliable, and renewable power system. Learn more about the benefits clean power brings to America at www.cleanpower.org.

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