

## Benefits

### Expertise You Can Rely On

The renewable energy market is quickly growing as government incentives encourage project development, states establish renewable standards, and photovoltaic costs continue to decline. With the increasing demand for energy, companies need to ensure they have reliable power from both traditional power and renewable energy systems.

Renewable energy developers, EPCs, contractors, and corporations are all challenged with delivering a financially sound project that delivers on established objectives, ensures no interruption to the national grid system, and is compliant with required standards and regulations. Working with experts in electrical reliability ensures you overcome those challenges while maximizing your return on investment (ROI).

### Benefits

- Minimize costly re-work, re-design, and project delays
- Ensure reliability and avoid disruption of the national grid
- Comply with regulatory requirements and standards
- Avoid unplanned downtime
- Optimize system performance
- Get projects operational quickly for faster ROI
- Ensure power resiliency



## Supporting your renewable energy needs throughout your entire project lifecycle

Renewable energy projects are long-term investments that are technically involved and require an understanding of many different facets. From site planning considerations, to project execution, to ongoing maintenance, a host of parties must be engaged. To complicate matters further, there are federal, state, and security regulations and standards that have to be met in order to ensure a safe and compliant renewable energy environment.

With so many aspects to consider, it is critical to work with a partner who has the electrical expertise to serve as advisor and tackle your electrical challenges within all phases of your renewable project. This reduces the number of vendors you must engage and minimizes your exposure to risk.

At High Voltage Maintenance (HVM), we understand renewable energy projects are complex and poor planning can result in high costs and significant delays. Our qualified technicians and engineers are knowledgeable about the intricacies of the renewable energy system and their connection to the national grid. Our services support the project lifecycle from initial project feasibility and modeling to ongoing maintenance and monitoring. We work to ensure your project delivers on its long-term objectives.

Our renewable energy suite of services includes:

- Electrical planning services
- Electrical engineering and design
- Grid and storage integration services
- Electrical maintenance services
- Performance optimization services



## Solutions For Your Top Renewable Energy Challenges

Designing a new renewable energy project, or connecting to an existing one, is no small feat for many companies trying to meet state Renewable Portfolio Standards (RPS) and corporate renewable targets. With HVM's Renewable Energy Services, our experts can help navigate the complexities of these projects, optimize your energy systems, and achieve the benefits and goals you expect. Our decades of experience in commissioning, testing, engineering, and maintaining electrical power systems enable us to provide holistic guidance in all phases of a renewable project from planning to ongoing maintenance.

### **Having Specialized Electrical Expertise to Deliver Project Success**

With the increasing demand for energy, companies must leverage a diversified portfolio of energy sources. Traditional energy systems, such as coal and natural gas, must be safely integrated with renewable sources without impacting the overall stability of the national grid.

To do so, specialized expertise in electrical systems is required. We can address the low-, medium-, and high-voltage needs of your renewable projects. Our experts evaluate grid interconnection compatibility, load flow, cabling requirements, and many other factors to ensure system integrity and power quality.

### **Achieving Energy Resiliency and Reliability Goals**

As companies look to integrate renewable energy sources into their energy portfolio, careful consideration must be given to the impact on the existing systems. Energy resiliency should be achieved without compromising reliability and quality.

Renewable energy can present challenges of power inconsistency and instability due to the nature of the energy sources. Our team conducts technical studies to evaluate system impact, protection and control designs, and performance optimization plans to provide peace of mind that you are achieving both your resiliency and reliability objectives.

### **Meeting Required Standards and Compliance Requirements**

Understanding and meeting required standards and compliance requirements is a necessary aspect of all renewable projects. However, it can be difficult to understand what standards apply and in which situations. Without this knowledge, projects may not get approved or pass inspections in order to become operational.

Our technicians and engineers have years of experience in electrical systems and they can quickly recognize potential safety and compliance concerns. Through thorough acceptance testing of switchgear, inverters, relays, transformers, and interconnects, our team can ensure compliance. Also, our team routinely provides solar bus taps and battery interconnects to properly tie existing systems with renewable energy sources.

## Services Designed to Deliver Safe, Compliant, Reliable and Cost-Effective Energy Throughout the Life of Your Renewable Energy Project

### Electrical Planning Services

These services help you proactively evaluate and plan a strategy to meet your electrical system requirements to avoid financial loss due to costly rework, redesign or project delays.

Our engineers are well-versed in conducting impact and power studies to ensure the power quality you require can be achieved. Potential issues can be addressed before costly investments are made in unnecessary, or incorrect, equipment and resources. Specific electrical planning services include:

- Electrical feasibility assessment and modeling
- Electrical system impact modeling
- Power factor study
- Power quality study
- Photovoltaic interconnection modeling
- Commissioning services

### Electrical Maintenance Services

Regular inspection and testing allows you to understand the current health of your electrical systems and helps prevent unplanned downtime. Our NETA-certified technicians perform the following maintenance services to ensure your systems are operating per the latest safety and compliance standards:

- Preventive maintenance testing
- Predictive maintenance testing
- Corrective maintenance
- Arc flash studies
- Battery maintenance

### Electrical Engineering and Design

Thorough evaluation and analysis of your electrical capabilities ensures your renewable energy plans are designed for optimum capacity.

For better system insight to support project planning, the following engineering and design services allow our experts to collect critical information such as design redundancy, protection scheme configuration, relay settings, potential safety hazards, and more:

- Power system study
- Relay design and integration
- Arc flash study
- Load flow analysis
- NERC compliance
- Engineering evaluation
- Engineering drawings

### Performance Optimization

These services protect your investments by ensuring your electrical systems are performing at their optimal levels. Getting the most out of your system means extending equipment service life and maximizing productivity.

- Battery replacements
- Recommissioning
- Monitoring services
- Real-time monitoring
- Retrofit services

### Grid and Storage Integration

Grid integration services ensure that the electrical components of your renewable project are securely interconnected and are compliant with power reliability standards.

Our engineers and technicians have extensive experience with the following services that safely direct power to and from the grid and help customers avoid system disruptions:

- Acceptance testing (switchgear, inverters, relay, transformers and interconnects)
- Acceptance testing for power transfer on and off grid
- Conformity services (solar bus taps)
- Field inspection of custom equipment
- Battery integration
- Compliance programs and training services

## Plug into Our Renewable Energy Expertise to Deliver on the Benefits of Green Energy

### Experience Matters

To deliver a successful renewable energy project, working with experienced partners matters! Understanding the unique demands of different industries is critical in minimizing project issues and delays. We bring a wealth of experience having executed projects for Fortune 500 companies from the following industries:

- Education
- Financial
- Government
- Healthcare
- Information technology
- Manufacturing
- Retail
- Utility

### What Our Customers Say

"HVM made repairing our outage a priority. We had technicians on site within a few hours of contact and equipment was troubleshooted in a few more. Without their guidance and help we likely would've faced additional downtime."  
-- *Manufacturing customer*

"The HVM technicians took the time to evaluate everything before diagnosing our problem. It was not what we were led to believe the issue was by others."  
-- *Information Technology Provider*

"From placing and expediting the order with HVM, through the actual work being completed, everything was done efficiently and professionally."  
-- *Educational Institution Customer*

### Summary

Renewable energy is an undeniable reality for companies of all sizes. It is no longer an "alternative" but rather a "mainstream" energy source. Projects are complex and require a significant level of investment in time, dollars and other resources.

To help you navigate project complexities, deliver on safety and compliance, and boost reliability and cost savings, HVM offers services for each phase of your renewable project.

### Experts In Reliability

We have proven expertise and experience working with renewable energy project developers, contractors, and end users in a variety of industries.

### Ordering Information

To learn more about HVM's Renewable Energy Services, please contact us at 1-866-HVM-TEAM or visit [HVMcorp.com](http://HVMcorp.com).



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