

SOLARCARE™ OPERATIONS & MAINTENANCE

**INTEGRATED SOLUTION PRESENTED
BY HELIOLYTICS, ENVISION DIGITAL, &
SPARK POWER RENEWABLES**

Platform summary

SolarCare™ is a comprehensive solution developed by Heliolytics, Envision Digital, and Spark Power Renewables, which provides end-to-end integrated solar operations and maintenance services to asset owners.

Three services, one solution

**AERIAL
INSPECTIONS**

**PERFORMANCE
ANALYTICS**

**FIELD
SERVICES**

KEY OFFERINGS WITH SOLARCARE™

- **Third-party inspection**
Module-level infrared analysis via Heliolytics.
- **Monitor site health**
Supervisory Control & Data Acquisition (SCADA) technical asset management services through Spark Power Renewables' Ignition platform.
- **Identify, diagnose & quantify system underperformance**
Performance analytics through Envision Digital's Enight Solar advanced analytics solution.
- **On-site service & maintenance**
Technical field service expertise from Spark Power.

WHY WORK WITH US?

Our competitive advantage

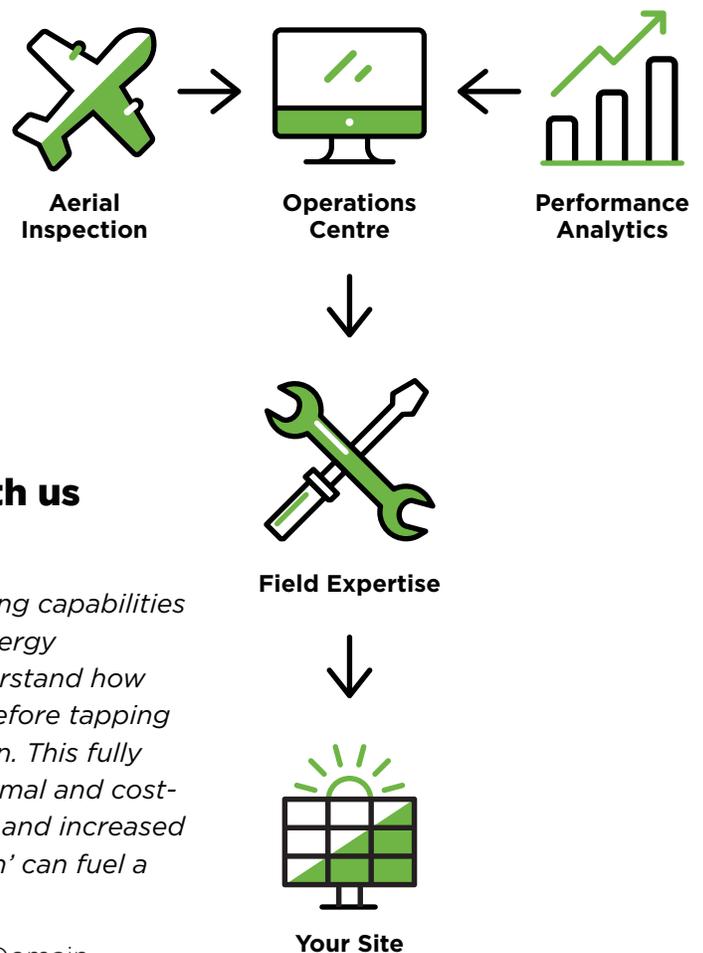
SolarCare™ offers customers seamless access to critical asset management services through one platform - all at a competitive market rate.

Simply put, the SolarCare™ product integrates data input and monitoring from Heliolytics, Envision Digital, and Spark Power, which then identifies assets in need of repair and dispatches field techs to service your site. This provides customers with one primary source for all their solar asset operations and maintenance needs.

Envision Digital shares why working with us optimizes your experience.

By combining our advanced analytics and machine learning capabilities with expertise from Spark Power and Heliolytics, solar energy providers can now analyze large volumes of data to understand how the performance of their solar assets can be improved, before tapping best-in-class technical services to take pre-emptive action. This fully integrated, end-to-end solution enables streamlined, optimal and cost-effective solar energy production, as well as cost savings and increased revenues. It is very much in line with our belief that 'green' can fuel a new wave of business and economic growth.

- Kam Mofid, General Manager and Head of Global Solar Domain, Envision Digital.



WHO WORKS WITH US?

Solar asset owners who are looking to experience a more seamless O&M service, from analysis to monitoring, management, and maintenance.

CUSTOMER TESTIMONIAL

"With our large portfolio, we needed a solution that supports our short- and long-term asset management objectives and needs. Spark Power's ability to combine real-time monitoring alongside industry-leading analytics and field service helps us to achieve our investors' goals,"

- David Bale, Project Director, Fengate.

FULL SCOPE OF SERVICES: DEEP DIVE

DIAGNOSTIC DATA ACQUISITION

Regular preventative maintenance scans

Our most popular service. Typically at annual intervals, but modulated as site failure rates warrant.

Reactive troubleshooting scans

Expedite and support warranty claims, assess extreme weather damage, and investigate underperforming assets. We often partner with on-the-ground independent engineers.

Commissioning or asset transfer service

Full DC health check, establishing a baseline site evaluation.

Portfolio analysis & reporting

Our data is analyzed for significant trends across a portfolio to inform our clients' investment and operating decisions, affording efficient prioritization and planning of maintenance and remediation actions.

Advanced analytics

Our data is correlated with other information (inverter performance, IV scans, module serial numbers, etc.) to contextualize and further illuminate our clients' issues

DIAGNOSTIC DATA ACQUISITION

Data quality and sensor integrity are critical

Our advanced analytics engine automatically detects and corrects for missing or invalid data to ensure that key performance indicators and loss breakdown analysis results are accurate. Enight Digital Solar automatically detects sensor outliers and creates alerts with recommended corrective actions before removing unreliable sensor data from the assessment.

We review your primary sensors

Weather sensor inspection is often overlooked, and sensors that are out of calibration or proper alignment cause inaccurate and misleading plant performance assessments. Enight Solar detects sensor outliers automatically and creates alerts with recommended corrective actions before removing unreliable sensor data from the assessment.

Downtime root cause analysis

Inverter-by-inverter analysis provides rapid insight into the underlying causes of system losses. The downtime analysis algorithm compiles the series of continuous inverter down times as individual downtime events, for each inverter. Downtime events are also broken into categories depending on whether they were caused by snowfall, grid curtailment, or other causes.

Shading & soiling characterization

Our proprietary shade detection algorithm creates a dynamic model of expected production on an inverter-by-inverter basis to reveal real-life shading. Even vegetation growth can be detected and acted upon sensibly.

Corrective action recommendations

With Enight Solar, you can detect and resolve plant performance anomalies that are indicative of potential future equipment problems. Enight Solar incorporates the cost of action, whether it is washing modules or fixing down strings, so that operational performance can be maximized within budgeting constraints.

Operations & maintenance services

All-inclusive field maintenance inspections, testing, and repairs. Original equipment manufacturers (OEMs)/warranty/service and performance testing/verification.

Balance of plant (BOP) services

Managing and executing BOP services including snow removal, vegetation management, and environmental monitoring requirements.

Substation maintenance

Comprehensive testing, transformer inspections, and oil and gas analysis requirements for solar projects of any scale.

Emergency response & power recovery

On-demand response, detailed inspections, and quality assurance / quality control checks to ensure your project stays on scope. Repowering and retrofit management, engineering, and construction.

Inventory management

Following OEM service programs by recommending spare parts, engineering for replacements, and sourcing components when required.

Warranty assistance

Information gathering and professional documentation and reports required for warranty claims.

LEARN MORE ABOUT OUR SERVICES

Heliolytics is the largest global provider of aerial thermal imaging inspections and analysis for solar photovoltaic (PV) systems, with 50+ GW serviced across over 3,500 projects globally. Heliolytics leverages innovative imaging, analysis, and reporting services combined with deep sector experience to ensure maximum solar asset performance. Learn more at www.heliolytics.com.

Envision Digital is a global AIoT technology leader headquartered in Singapore, with more than 500 employees across 12 offices in China, France, Germany, Norway, the Netherlands, the United Kingdom, and the United States.

Envision Digital owns EnOS™ - the world-class AIoT operating system that currently connects and manages more than 63 million smart devices and 180 gigawatts of energy assets globally. Its monitoring, advanced analytics, forecasting, and optimizing applications provide insights to help clients better manage their assets and portfolio performance. Its offering extends to Smart Renewables (Solar, Wind); Smart Cities; Connected Energy; and Smart Plants - partnering governments and companies in their digital transformation journey.

As a major player in AIoT operating systems, Envision Digital is growing an ecosystem of partners to enable energy and digital transformation globally. Its growing list of more than 250 customers and partners spans 10 industries and includes: Accenture, Amazon Web Services, GovTech Singapore, Keppel, Microsoft, Nissan, PSA

Spark Power Renewables is a division of Spark Power. Spark Power is the leading independent provider of end-to-end electrical contracting, operations and maintenance services, and energy sustainability solutions to the industrial, commercial, utility, and renewable asset markets in North America. Learn more at www.sparkpowercorp.com.