

PLANT-WIDE MULTI-VENDOR OPERATIONS & MAINTENANCE



SMA | SERVICE

24+ GW utility inverters
commissioned across the world



13+ GW commercial projects
installed globally



25+ years of storage experience
with 70,000+ battery systems
installed worldwide



UNMATCHED PLANT-WIDE PV & STORAGE EXPERIENCE

SMA is the industry's leading long-term partner, and your success is our top priority. With more than **35 years of experience** and **65+ GW installed** around the world, you can count on the knowledge we've gained supporting thousands of commercial, utility and storage projects. SMA is a top-five ranked O&M provider and now manages a portfolio of nearly **3 GW under contract globally**.

SMA also provides more coverage and support to our valued partners by offering an enhanced extended service warranty concept. With experience across the

largest PV plants in the world, we have the capability to save you time and maximize ROI by managing maintenance schedules, coordinating logistics, tracking warranty claims and reporting financial information.

Rest assured that our team has the training, certifications, tools and equipment to ensure your investment is secure so you can focus on revenue-generating activities.



RELY ON SMA FOR LONG-TERM SUCCESS

A properly maintained solar system can accelerate investment payback and increase yields by up to 30 percent. Having a watchful and proactive eye on your investment is vital to ensuring maximum ROI. With our world-class, plant-wide O&M services for commercial, utility and storage systems, SMA is uniquely positioned to help you achieve greater returns faster and ensure maximum system uptime.

Not only can you count on our superior inverter technology, our SMA Solar Monitoring Centers utilize advanced, real-time monitoring capabilities to analyze performance, detect potential issues and resolve matters remotely. To minimize down time, our team can also dispatch field service engineers to get your system back on track quickly.

OUR CORE COMPETENCIES

- » PV Technology Leadership
- » Energy Management
- » Inverter Expertise
- » Medium Voltage Expertise
- » Remote Monitoring
- » Communications Expertise
- » Performance Analytics
- » Grid Management
- » Impeccable Safety Record
- » 24/7 Operations Centers
- » Professional Services
- » Applications Engineering
- » Project Management
- » Contract Management
- » Supply Chain & Logistics
- » Spare Parts Management
- » Warranty Management



ADVANCED INSPECTION & THERMAL IMAGING CAPABILITIES

Proactive servicing is the key to achieving maximum system uptime. As part of our plant-wide O&M offering, SMA performs only the most comprehensive inspection and thermal imaging services. These services are performed by SMA professionals who are certified by the ASNT (American Society of Non-Destructive Testing) to ensure that nothing compromises the integrity of your PV investment. Whether it's a commercial, utility or storage project, hot spots can be indicative of future system issues, so SMA insists on finding those potential problems before they can impact system profitability.

SMA aerial thermography is so precise it can detect issues down to the cell level, significantly decreasing the time spent identifying and diagnosing problems. In fact, SMA data analysis of sites has shown that as much as 6% of modules have a performance issue while 1.6% of them have been completely offline at any given time. Aerial thermography by our team of FAA-certified experts can quickly address these problems, keeping your profitability on track.



PARAMOUNT INVESTMENT SECURITY WITH 24/7 REMOTE MONITORING

As part of SMA's commitment to customer risk reduction and maximum ROI, our unique NERC/CIP-compliant Solar Monitoring Centers ensure that cybersecurity is at the forefront of our efforts. In addition, we utilize state-of-the-art, real-time remote monitoring and control capabilities to ensure your system performs as expected. Located in Germany and California, our Solar Monitoring Centers provide reliable 24/7 coverage around the world. Our team of PV experts analyzes plant performance, detects potential issues, and resolves matters remotely or dispatches field service engineers to get your system back on track quickly.

In collaboration with our partners and customers, SMA has taken a leadership role in accelerating the global transition to a digital, renewable energy supply. We continually invest in training our team of service professionals utilizing cutting-edge techniques and tools. Our Solar Monitoring Centers are a central focus of this commitment to customer success.



SCALABLE O&M PLANS TO SUIT ANY BUSINESS MODEL

PREVENTATIVE

Prevent failures and maintain system performance with SMA's Preventative Plan.

The preventative maintenance program includes comprehensive maintenance on the inverter and associated equipment, complete plant-wide inspection (including thermal scans by certified engineers) and remote plant monitoring through SMA's NERC/CIP-compliant Solar Monitoring Centers.

PROACTIVE

Proactively improve system performance, mitigate failures, and ensure systems are consistently operating at peak performance with SMA's Proactive Plan.

Expanding on the essential services of the Preventative Plan, the Proactive Plan adds spare parts management and warranty administration services. The Proactive Plan will simplify maintenance planning while increasing readiness for unforeseen events.

PERFORMANCE

The Performance Plan ensures peak plant performance through advanced analytics and performance engineering, while mitigating risk through performance guarantees.

UTILITY PLAN SUMMARY

Guarantees	PER	PRO	PRE
Performance Guarantees	✓		
Advanced / Performance Reports	✓		
Administrative and Management Services	PER	PRO	PRE
Warranty Administration including Claim Management	✓	✓	
Spare Parts Management including Inventory Management	✓	✓	
Monitoring / Control / Operations	PER	PRO	PRE
Remote Plant Monitoring	✓	✓	✓
Real-time Plant Supervision	✓	✓	✓
Customer and Stakeholder Notification	✓	✓	✓
Periodic Reports / Service Reports	✓	✓	✓
Remote Plant Control	✓	✓	
Engineer Dispatch and Case Management	✓	✓	
Emergency Hotline / Dispatch	✓	✓	
Inspection and Maintenance	PER	PRO	PRE
<i>Solar Panels / MLPE / Optimizers / Trackers</i>			
Inspection	✓	✓	✓
Preventative Maintenance	✓	✓	✓
Thermography	✓	✓	✓
<i>Combiner / Re-combiner Boxes</i>			
Inspection	✓	✓	✓
Preventative Maintenance	✓	✓	✓
Thermography	✓	✓	✓
<i>Inverters (String / Central / Battery)</i>			
Inspection	✓	✓	✓
Preventative Maintenance	✓	✓	✓
Thermography	✓	✓	✓
<i>MV Transformers</i>			
Inspection	✓	✓	✓
Preventative Maintenance	✓	✓	✓
Thermography	✓	✓	✓
<i>Oil Sampling / Analysis</i>	✓	✓	✓
<i>Switchgear / Substation / Transmission Lines</i>			
Inspection	✓	✓	✓
Preventative Maintenance	✓	✓	✓
Thermography	✓	✓	✓
<i>Oil Sampling / Analysis</i>	✓	✓	✓
<i>D-STATCOM</i>			
Inspection	✓	✓	✓
Preventative Maintenance	✓	✓	✓
Thermography	✓	✓	✓
<i>SCADA Systems / Servers / Routers</i>			
Inspection	✓	✓	✓
Preventative Maintenance	✓	✓	✓
<i>Security Systems / Cameras</i>			
Inspection	✓	✓	✓
Preventative Maintenance	✓	✓	✓
<i>Metrological Sensors / Utility Meters</i>			
Inspection	✓	✓	✓
Preventative Maintenance	✓	✓	✓
Calibration	✓	✓	✓
<i>Backup Generators / Batteries</i>			
Inspection	✓	✓	✓
Preventative Maintenance	✓	✓	✓

COMMERCIAL PLAN SUMMARY

Administrative and Management Services	PRO	PRE
Warranty Administration incl. Claim Management	✓	
Spare Parts Management incl. Inventory Management	✓	
Monitoring / Control / Operations	PRO	PRE
Remote Plant Monitoring	✓	✓
Real-time Plant Supervision	✓	✓
Customer and Stakeholder Notification	✓	✓
Periodic Reports / Service Reports	✓	✓
Remote Plant Control	✓	
Engineer Dispatch and Case Management	✓	
Emergency Hotline / Dispatch	✓	
Inspection and Maintenance	PRO	PRE
<i>Solar Panels / MLPE / Optimizers / Trackers</i>		
Inspection	✓	✓
Preventative Maintenance	✓	✓
Thermography	✓	✓
<i>Combiner / Re-combiner Boxes</i>		
Inspection	✓	✓
Preventative Maintenance	✓	✓
Thermography	✓	✓
<i>Inverters (String / Central / Battery)</i>		
Inspection	✓	✓
Preventative Maintenance	✓	✓
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Preventative Maintenance	✓	✓
<i>Security Systems / Cameras</i>		
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Preventative Maintenance	✓	✓
Calibration	✓	✓
<i>Backup Generators / Batteries</i>		
Inspection	✓	✓
Preventative Maintenance	✓	✓

KEY

PER = Performance Plan
 PRO = Proactive Plan
 PRE = Preventative Plan



SUPPLEMENTAL SERVICES

Sometimes even the smallest issues can cause significant challenges that negatively impact your bottom line. In addition to SMA's superior O&M plans, we also offer individual services that can be integrated in a flexible fashion, resulting in a highly customized O&M solution. Beyond our technical services, SMA offers pest management, array cleaning, system security and system-wide vegetation control among other services. Not only will our services meet your needs, we're ready to discuss any additional unique requirements you may have regarding regulatory compliance, on-site staffing, or advanced reporting.

ENERGY STORAGE O&M

Proactive inspection and maintenance is crucial to system uptime and availability. SMA offers comprehensive services on batteries, BMS, energy storage inverters, communications devices and MV/HV equipment on the plant to ensure problems are identified upfront and downtime risk is minimized. Several plans are available so contact SMA to learn more about safeguarding your energy storage investment.

READY TO TAKE YOUR O&M PLAN TO THE NEXT LEVEL?

Contact SMA to discuss all of your O&M needs and how you can partner with the industry's #1 ranked service team to simplify your portfolio management and earn better returns on your next PV investment.

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