

O&M SERVICES



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Canadian Solar Operations and Maintenance services are designed to maximize the lifetime value of your solar power plant assets. Leveraging our 18 years of solar industry experience and 2 GW under operation and 1 GW additionally contracted worldwide, Canadian Solar pro-actively monitors and manages your plants minimizing downtime and increasing site availability, resulting in maximum energy production, revenues and profitability. Customized service packages offer the right fit for any solar power plant owner.

SERVICE OFFERINGS

BASIC OPERATIONS

PLANT SUPERVISION

- Performance Monitoring
- Issue Detection
- Curtailment

OFFICE SUPPORT

- Daily/Monthly/Annual Reports
- Grid Operator Interface

BASIC MAINTENANCE

PREVENTATIVE MAINTENANCE

- PV / MV / HV Electrical Maintenance
- Mechanical Maintenance
- Weather Station Sensor Maintenance

OFFICE SUPPORT

- Site Health & Safety
- Spare Parts Management
- Warranty Claim Management

BASIC GUARANTEES

STANDARD OPERATIONS

PLANT SUPERVISION

- Performance Monitoring
- Issue Detection
- Curtailment
- Security Monitoring
- NERC Registration

OFFICE SUPPORT

- Daily/Monthly/Annual Reports
- Grid Operator Interface

STANDARD MAINTENANCE

PREVENTATIVE MAINTENANCE

- PV / MV / HV Electrical Maintenance
- Mechanical Maintenance
- Weather Station Sensor Maintenance & Calibration

CORRECTIVE MAINTENANCE

- Manage CM for items under warranty
- CM for non-warranty items can be completed without bringing in 3rd party

SITE MAINTENANCE

- Property Maintenance (incl. vegetation management)

OFFICE SUPPORT

- Site Health & Safety
- Spare Parts Management
- Warranty Claim Management

STANDARD GUARANTEES

- Response Time Guarantee
- Availability Guarantee

PREMIUM OPERATIONS

PLANT SUPERVISION

- Performance Monitoring
- Issue Detection
- Curtailment
- Security Monitoring
- NERC Registration

OFFICE SUPPORT

- Daily/Monthly/Annual Reports
- Grid Operator Interface
- Energy Forecasting

PREMIUM MAINTENANCE

PREVENTATIVE MAINTENANCE

- PV / MV / HV Electrical Maintenance
- Mechanical Maintenance
- Weather Station Sensor Maintenance & Calibration

CORRECTIVE MAINTENANCE

- All Corrective Maintenance (warranty & non-warranty items)

SITE MAINTENANCE

- Property Maintenance (incl. vegetation management)
- Annual Module Cleaning
- Snow removal from road
- Pest Control
- Environmental Compliance

OFFICE SUPPORT

- Site Health & Safety
- Spare Parts Management
- Warranty Claim Management

PREMIUM GUARANTEES

- Response Time Guarantee
- Availability Guarantee
- Performance Ratio Guarantee (incl. module washing as needed)

CSEye SITE MONITORING

Our monitoring/asset management software (CSEye) provides critical 24/7/365 remote monitoring, diagnostics and troubleshooting. Developed by using years of aggregated data from our PV plants under O&M, our proprietary algorithms are used to:

- Analyze daily plant performance
- Pinpoint potential problems even if they are not reported by the SCADA system

NERC compliant Operations Control Center (OCC)



REPORTING

Daily, Monthly and Annual reports provide a record of key parameters and significant operational events and trends. Reports include:

- Executive summary
- Daily performance statistics
- Annual performance
- Maintenance summary
- Spare parts summary
- Summary of technical and other issues
- Root cause analysis for corrective maintenance



PREVENTATIVE MAINTENANCE

We continuously review the condition, operability and safety of all PV systems and perform the required preventative maintenance to ensure maximum performance of the plant.

We minimize generational losses when performing preventative maintenance.



CORRECTIVE MAINTENANCE

We arrange for corrective maintenance to be performed on site. Our field technicians have experience with numerous inverter technologies.



WARRANTY MANAGEMENT

Let Canadian Solar be your advocate for all warranty claims. We will enforce your claims and exercise all your rights of arising under warranties and guarantees for components located within the project.



SPARE PARTS MANAGEMENT

Canadian Solar can maintain an inventory of spare parts either on site or at an off-site facility controlled by the owner.



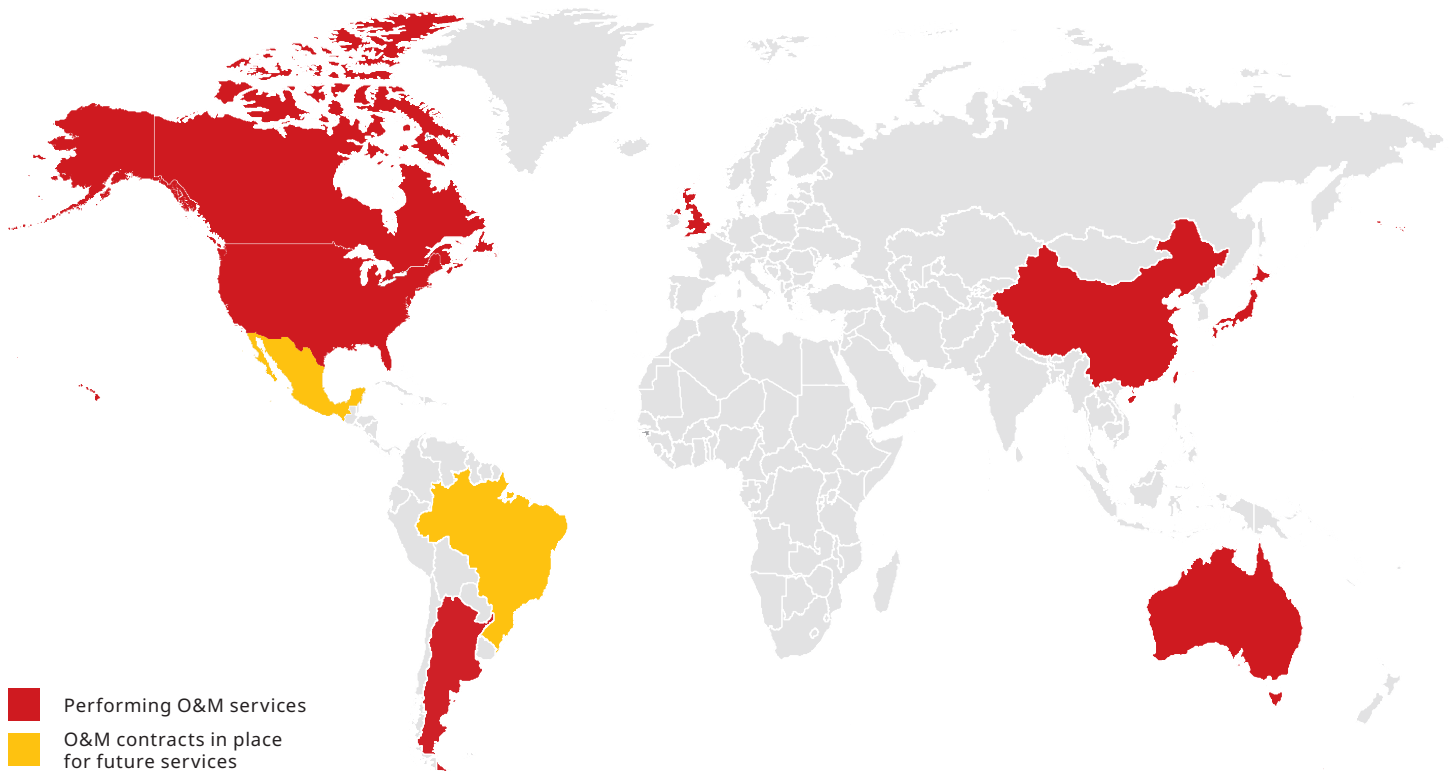
SAFETY

At Canadian Solar, safety is of paramount importance. We ensure the safety of all maintenance activities performed at the site. To date, we have zero lost time due to any safety issues.



CANADIAN SOLAR O&M EXPERIENCE

- Over 2 GW under operation and 1 GW additionally contracted worldwide
- 100+ plants, including ground mount utility scale and commercial rooftops
- Experience with leading inverter technologies, including SMA, Power Electronics, Sungrow, Huawei, General Electric, TMEIC, Hitachi, Advanced Energy, Siemens, ABB & Satcon



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