



# Energy Storage System Performance Checklist Template

## System Status & Diagnostics

Initial assessment of system health and error logs.

### System Uptime (Hours)

Enter a number...

### Error Log Summary

Write something...

### System Operating Mode

- ☐ Standby
- ☐ Charging
- ☐ Discharging
- ☐ Grid Support

### Last System Restart Date

Enter date...

**Time of Last System Restart**

**Total Fault Events**

Enter a number...

**Notes/Observations**

Write something...

## Battery Performance Metrics

Monitoring voltage, current, temperature, and state of charge.

**State of Charge (SOC) (%)**

Enter a number...

**Battery Voltage (V)**

Enter a number...

**Battery Current (A)**

Enter a number...

### Internal Resistance (mΩ)

Enter a number...

### Cell Temperature (°C)

Enter a number...

### Depth of Discharge (DoD) (%)

Enter a number...

### Battery Capacity Degradation Status

- ☐ Within Specification
- ☐ Slight Degradation
- ☐ Moderate Degradation
- ☐ Significant Degradation

### Last Full Charge Date

Enter date...

## Inverter Efficiency & Output

Evaluating inverter power conversion efficiency and harmonic distortion.

### DC Input Voltage (V)

Enter a number...

### AC Output Voltage (V)

Enter a number...

### AC Output Current (A)

Enter a number...

### Peak Efficiency (%)

Enter a number...

### Total Harmonic Distortion (THD) (%)

Enter a number...

### Operating Mode

- ☐ Grid-Connected
- ☐ Off-Grid
- ☐ Islanded

### Last Firmware Update Date

Enter date...

### Any Abnormalities Noted

Write something...

# Thermal Management System

Checking cooling system operation and temperature distribution.

## Cooling System Inlet Temperature (°C)

Enter a number...

## Cooling System Outlet Temperature (°C)

Enter a number...

## Cooling System Flow Rate (L/min)

Enter a number...

## Cooling Method

- ☐ Air Cooled
- ☐ Liquid Cooled
- ☐ Hybrid

## Pump Status

- ☐ Operational
- ☐ Degraded
- ☐ Failed

## Last Cooling Fluid Change Date

Enter date...

### Observations & Comments (e.g., noise, leaks)

Write something...

## Safety Systems & Controls

Verification of emergency shutdown procedures and safety interlocks.

### Emergency Shutdown System Status

- ☐ Operational
- ☐ Needs Repair
- ☐ Out of Service

### Fire Suppression System Pressure (PSI)

Enter a number...

### Last Fire Drill Date

Enter date...

### Ventilation System Operational?

- ☐ Yes
- ☐ No
- ☐ N/A

### Safety Inspector Signature

### Safety Interlock Functionality Verified?

- ☐ Yes
- ☐ No

## Communication & Data Logging

Checking data transmission accuracy and data logging functionality.

### Data Transmission Rate (Mbps)

### Communication Protocol Used

- ☐ Modbus
- ☐ DNP3
- ☐ TCP/IP
- ☐ IEC 61850

### Last Data Sync Date

### Last Data Sync Time

### Data Encryption Method

- ☐ AES
- ☐ RSA
- ☐ None

### Notes on Communication Issues

Write something...

### Communication Log File

 Upload File

## Grid Integration & Compliance

Ensuring adherence to grid codes and performance standards.

### Grid Code Adherence (Latest Version)

- ☐ Fully Compliant
- ☐ Partially Compliant
- ☐ Non-Compliant

### Frequency Deviation (Maximum)

Enter a number...

### Voltage Flicker Severity

Enter a number...

### Last Grid Compliance Audit Date

Enter date...

### Notes from Grid Operator

Write something...

### Reactive Power Support Compliance

- ☐ Meets Requirements
- ☐ Minor Deviation
- ☐ Significant Deviation

### Supporting Documentation (e.g., Grid Connection Agreement)

 Upload File

## Physical Inspection & Maintenance

Assessment of physical components and scheduled maintenance tasks.

### Last Visual Inspection Date

Enter date...

### Battery Module Temperature (°C)

Enter a number...

### Inverter Operating Noise Level (dB)

Enter a number...


### Condition of Wiring and Connections

- ☐ Excellent
- ☐ Good
- ☐ Fair
- ☐ Poor

### Detailed Description of Any Issues Found

Write something...

### Photos/Documentation of Inspection

 Upload File

### Next Scheduled Maintenance Date

Enter date...

### Inspector Signature

## Environmental Conditions

Monitoring ambient temperature, humidity, and ventilation.

### Ambient Temperature (°C)

Enter a number...

### Relative Humidity (%)

Enter a number...

### Ventilation Rate (CFM)

Enter a number...

### Noise Level (dB)

Enter a number...

### Weather Conditions

- ☐ Clear
- ☐ Cloudy
- ☐ Rain
- ☐ Snow
- ☐ Fog

### Date of Observation

Enter date...

### Time of Observation

## Performance Trends & Degradation

Analysis of long-term performance data and potential degradation patterns.

### Capacity Fade Rate (%)

Enter a number...

### Round-Trip Efficiency Decline (%)

Enter a number...

### Date of Last Significant Performance Drop

Enter date...

### Internal Resistance Increase ( $m\Omega$ )

Enter a number...

### Observed Performance Anomalies / Notes

Write something...

### Degradation Pattern Identified?

- ☐ Linear
- ☐ Exponential
- ☐ Sudden
- ☐ None Observed

**Attach Performance Graphs/Data**

 Upload File