Solar energy · Global

A solar power producer cut repeated inverter faults by 61% in five months

A multi-MW independent power producer put preventive maintenance, inverter fault logs and spare parts for every plant in one system, and used fault history to stop the same failures coming back.



61%
fewer repeated inverter faults within 5 months

6 weeks
phased rollout across all solar plants

AT A GLANCE

INDUSTRY
Solar independent power producer

PLANTS
Utility-scale solar farms in several states

ASSETS
Thousands of modules, string and central inverters

PREVIOUSLY
WhatsApp, Excel and paper registers

FEATURES USED
Maintenance · Work · Stores

01 The client

The client is a multi-MW independent power producer running utility-scale solar farms across several states. Its plants hold thousands of modules, string and central inverters, HT/LT electrical equipment and SCADA monitoring.

It sells power under long-term agreements, so revenue depends on plant availability, inverter reliability and steady generation.

02 The challenge

The producer had experienced teams on the ground, yet the same inverter faults kept returning. Maintenance records were scattered, so nobody could see which equipment failed most or why.

- Repeated fan failures, communication faults, DC insulation issues and string dropouts.
- Preventive maintenance missed or done differently across contractors and sites.
- Technicians closing jobs without documentation or inspection evidence.
- Logs split across WhatsApp, Excel sheets and handwritten registers.
- No single record of each inverter's service history or fault recurrence.

03 What they set up in Asset Infinity

The producer ran plant maintenance in Asset Infinity, with every inverter in one register and technicians recording PM and repairs in the mobile app.

Maintenance

One PM standard for every site

Standard checklists cover filter cleaning, fan operation, torque checks, thermal scans, AC/DC readings and firmware validation. Overdue PM triggers reminders and escalation.

Work

Every fault logged against its inverter

Technicians record each fault in the mobile app with photos, readings and cause-of-failure notes, against the inverter's record with its make, model and location.

Maintenance

Root cause by fault category

Repeated faults are grouped by category, such as DC overcurrent, AC imbalance, string dropout, thermal derating and communication failure, so engineers can investigate patterns.

Stores

Spares traced to each repair

Fans, PCBs, communication cards, fuses and connectors are issued to the work order, which shows high-consumption parts and poor-quality spares.

04 How it works day to day

Here is how inverter maintenance runs across the producer's plants now.

SYSTEM

Raises PM when it is due

Preventive plans create work orders for each inverter on schedule, with the standard checklist attached, and remind the team before they fall overdue.

TECHNICIAN

Completes the PM checklist

In the mobile app, the technician records filter cleaning, fan checks, torque values, thermal scans and AC/DC readings. Required fields cannot be skipped.

TECHNICIAN

Logs a fault with evidence

When an inverter trips, the technician logs it against that inverter with photos, readings and the cause of failure.

STOREKEEPER

Issues spares to the job

Fans, PCBs, cards and fuses are issued to the work order, so every replacement is tied to an inverter and a repair.

SUPERVISOR

Reviews and closes the work

Supervisors check the evidence before sign-off, so no job closes without a record of what was found and done.

SYSTEM

Escalates overdue PM

PM that slips past its date is escalated to the cluster head, so missed maintenance is noticed the same day.

CLUSTER HEAD

Looks for repeat offenders

Dashboards show PM compliance and faults by inverter, make, block and category, pointing engineers to the equipment that keeps failing.

05 Before and after

	BEFORE	WITH ASSET INFINITY
Preventive maintenance	Missed or done differently by each contractor	Standard checklists with reminders and escalation
Fault records	WhatsApp, Excel and paper registers	Logged in the app against each inverter
Job closure	Closed without evidence	Photos, readings and cause of failure required
Spare parts	Not linked to repairs	Issued to each work order and traced
Fault patterns	Hard to see across blocks and makes	Grouped by category, inverter and cluster
Repeated faults	Kept coming back	61% fewer within five months

06 How it rolled out

1

Phased over six weeks. All solar plants moved to the new way of working in a phased six-week rollout.

2

Teams trained. Technicians, cluster leads and O&M supervisors were trained on site and online.

3

SCADA alerts connected. Fault alerts from plant SCADA were connected through the API, so notifications and work stayed in step.

07 The results

- Higher plant availability and fewer breakdown-driven outages
- PM compliance improved sharply across all sites and vendors
- Lower emergency breakdown costs and fewer repeated spare replacements
- Inverter performance stabilized across blocks and clusters
- Inverter health history now supports capex forecasting and life-cycle planning

08 Why it worked

One standard across contractors

Every site and vendor follows the same PM checklist, so compliance can be measured and compared.

Faults tied to assets

Each fault sits on the inverter's own record, which makes repeat offenders and weak makes easy to find.

Evidence before closure

Photos, readings and failure notes are captured at the inverter, so root cause work starts from facts.

09 Looking ahead

By putting preventive maintenance, inverter fault logs and spare parts in one system, the producer broke the cycle of repeated faults and cut them by 61% within five months.

The same fault history now feeds long-term planning. Engineers can see which inverters, makes and blocks keep failing, and plan replacements and budgets from evidence rather than memory.

See it on your own assets

A 30-minute demo, set up for a solar IPP or O&M team.

The client's name is withheld for confidentiality. Results are as reported by the client.

Book a demo

Start a 14-day free trial