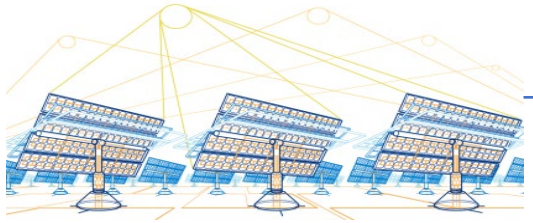
Generative AI for Predictive Maintenance

Bhagawan Gnanapa

PROCESSES

smarttrak
POSITIONED TO POWER YOUR FUTURE

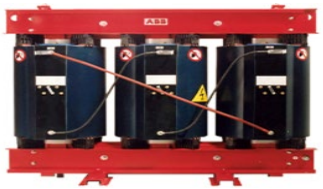
Solar Trackers



Industrial devices

Analog Sensors

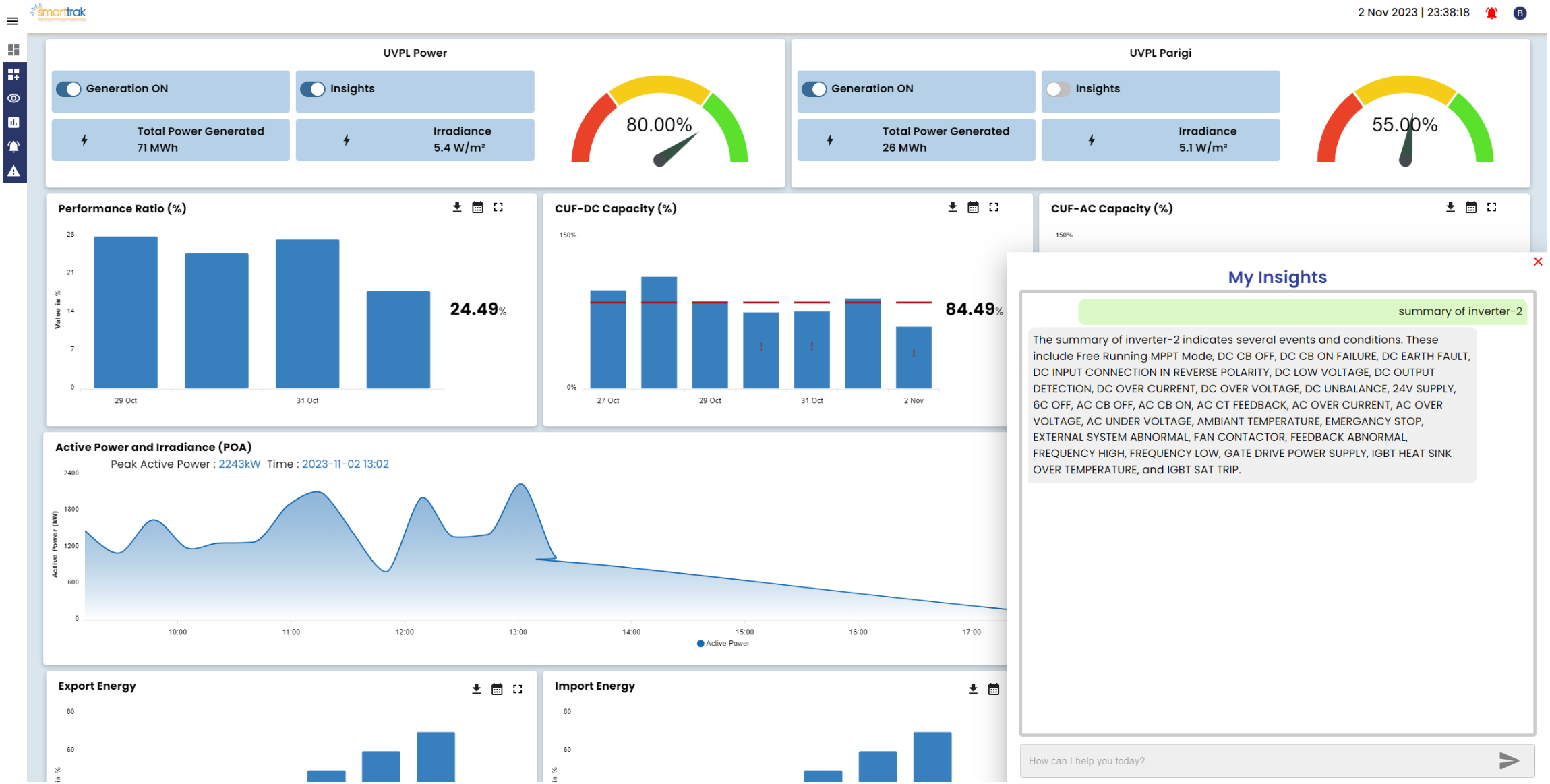
Power Monitoring Sensors



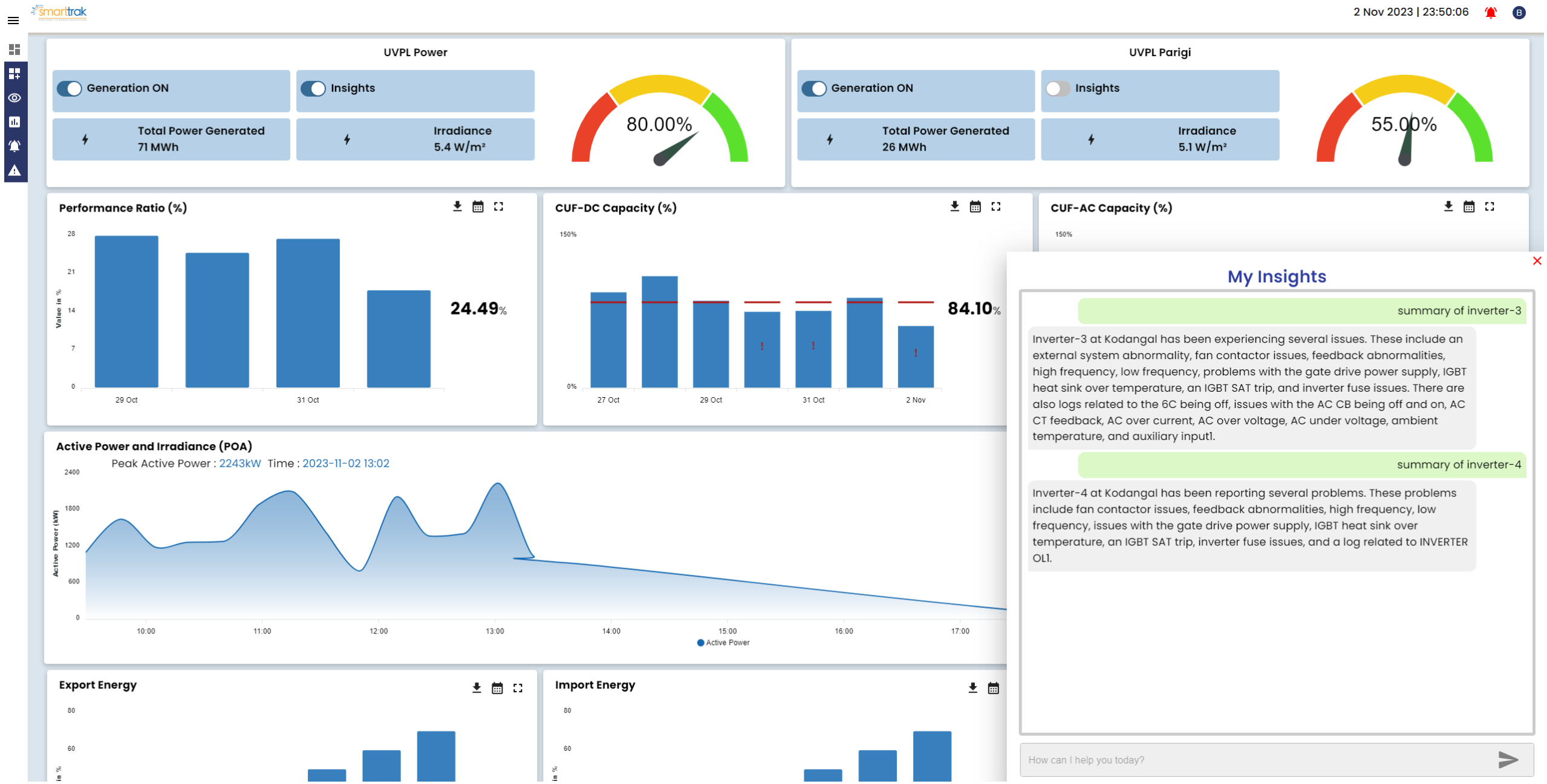
Trained and Deployed AI Model

- Solar Trackers
- String Monitoring
- Inverters
- Transformers
- HT/LT Panels
- Power Plant

GET A QUICK STATUS



Q&A IN NATURAL LANGUAGE



DETAILED REPORT INSIGHTS

2 Nov 2023 | 23:52:39

PLANT INFORMATION:

Plant Name:	UVPL Power	**Install Date:**	14-12-2022
Report #:	201746565	**Installed/Run Days:**	344
Report Completed By:	Admin	**Report Date:**	23-10-2023
		Fault Type:	Electrical Overload

NOTES

The inverter has detected an electrical overload and has shut down.

CAUSE OF FAILURE — CLASSIFICATION: H

Despite advanced protections, electrical overload can still occur if there's a sudden surge in power from the solar array, possibly due to faults in individual panels or a failure in the MPPT process.

RECOMMENDATIONS

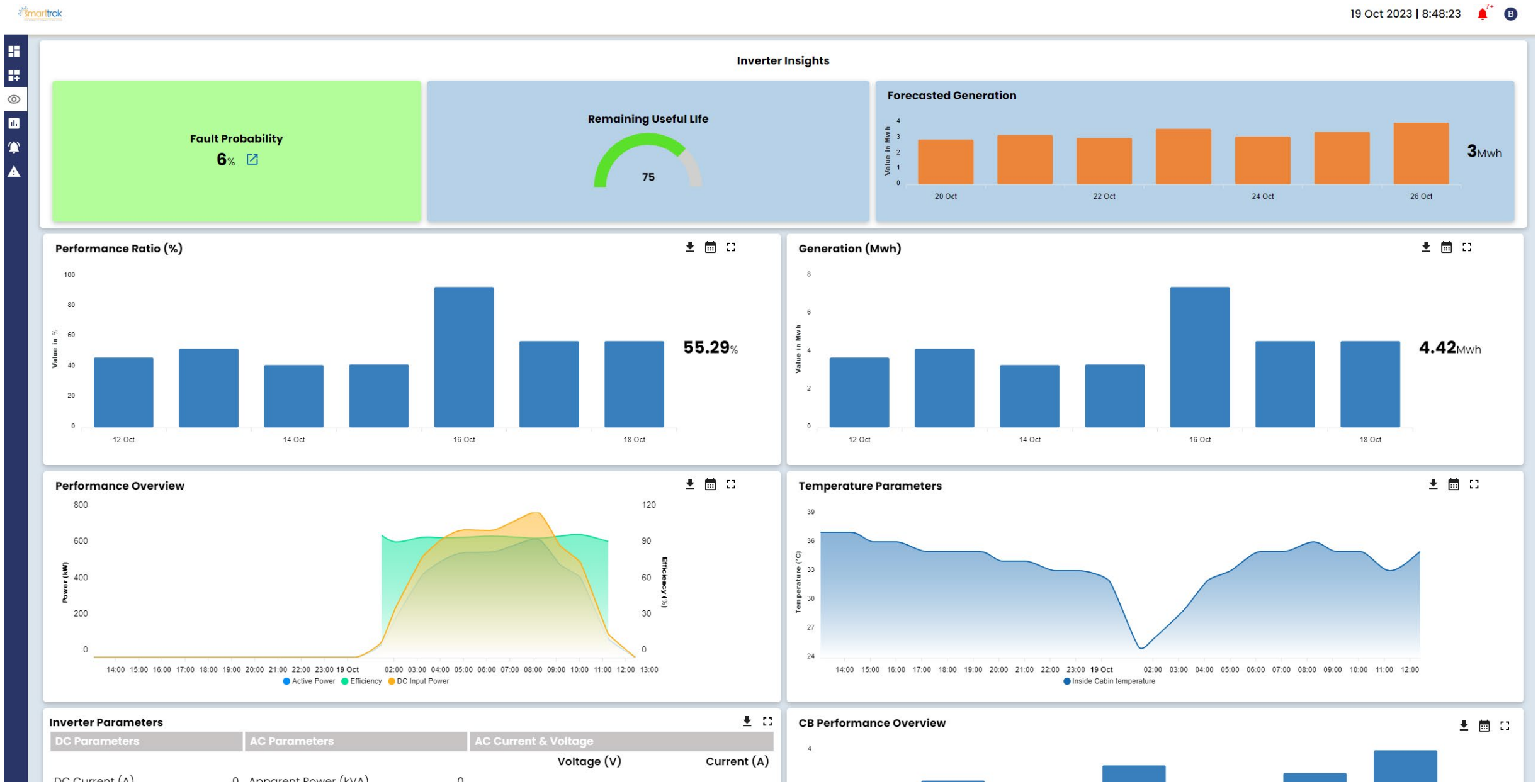
- Isolate and inspect the solar panel array to identify faulty panels or wiring.
- Ensure that the inverter's MPPT algorithms are tuned to respond rapidly to changing conditions.

Reports Insights

From the provided inverter data and alarm status, here are the key points: 1. Auxilary Input4 and Input5 failed and then recovered. 2. Auxilary Input6 and Input7 encountered failures. However, they also recovered. 3. An emergency stop was initiated but was later recovered. 4. Inverter Fuse and Fan Contactor experienced failures but they are now OK. 5. PCS was in Stop and Standby modes. 6. Issues were encountered with IGBT Heatsink Temperature, Gate Drive Power Supply, Relay IO Card Comm, and Keypad Card Comm, but they were all recovered. 7. There was a Precharge failure, which has been recovered. 8. Alarms were triggered due to 6C Off Failure, AC CB Off Fail, DC CB Off Fail, and Surge Suppressor Fail. All these issues are now recovered. 9. There were also failures due to wrong operation and ambient temperature, however, the document does not specify their current status. 10. There were some incidents of abnormal stop, which have been reset. Also, the AC Output Contactor has been switched on and off. 11. The inverter data also recorded some incidents such as Emergency Stop, External System Abnormal, Fan Contactor, Feedback Abnormal, Frequency High/Low, Gate Drive Power Supply, IGBT Heat Sink Over Temperature, and IGBT Sat Trip. Please note that some parts of the data are cut off, and complete recovery or the current status of some systems could not be confirmed.

How can I help you today?

FORECAST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19 Oct 2023 | 8:48:23
Inverter Insights
Fault Probability
6%
Remaining Useful LIfe
75
Forecasted Generation
Value in Mwh
20 Oct
22 Oct
24 Oct
26 Oct
3Mwh
Performance Ratio (%)
Value in %
12 Oct
14 Oct
16 Oct
18 Oct
55.29%
Generation (Mwh)
Value in Mwh
4.42Mwh
Performance Overview
Power (kW)
Efficiency (%)
Active Power
Efficiency
DC Input Power
Temperature Parameters
Temperature (°C)
Inside Cabin temperature
Inverter Parameters
DC Parameters
AC Parameters
AC Current & Voltage
Voltage (V)
Current (A)
CB Performance Overview