Jinko ESS Liquid Cooling Solution of Micro-grid AC- coupled System

250kW/645kWh Li-ion BESS Project in Lebanon

Case Study

Project Overview

The project is situated in a rural area of Lebanon, characterized by extensive land and low population density where grid power is not available, and the facility is running only on diesel generators.

This project focuses on implementing an AC-coupled Energy Storage System (ESS) for a chicken farm. The solution aims to enhance energy efficiency, reduce electricity costs, and improve power reliability by integrating battery storage and PV with the existing power infrastructure.

Jinko has developed a comprehensive solution comprising PV, DGs, and battery energy storage systems (BESS) to ensure stable power supply, while DGs only serve as backup power sources.

The facility has achieved a remarkable reduction of 93% in diesel consumption by decreasing the DGs running hours from 24H to 1.5H per day.

The system is designed to operate for over 10 years, with more than 300 days of potential support from purely green energy.

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JinKO ESS

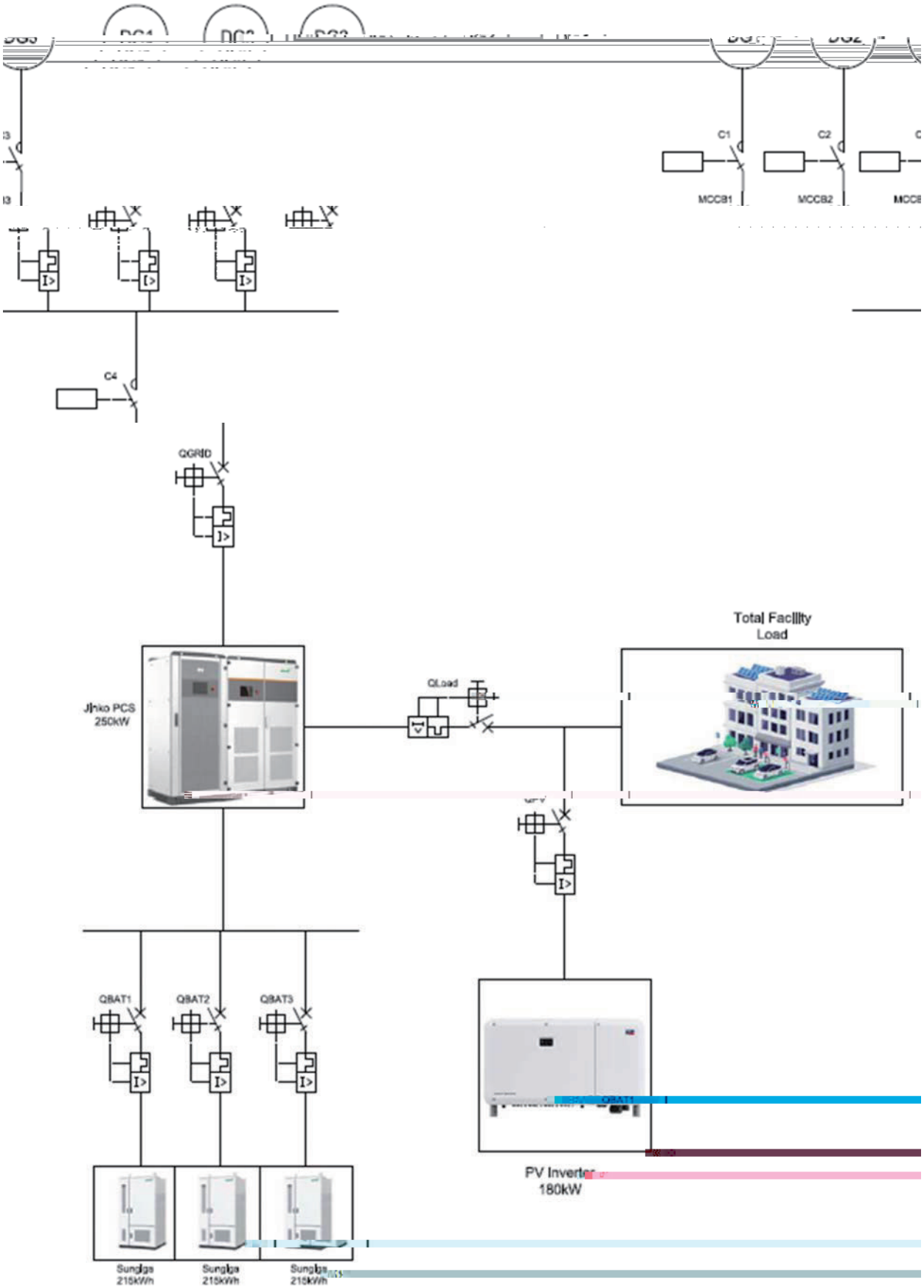


Fig. 1 Single Line Diagram of Micro-grid AC-Coupled System

Fig. 2 BMS Communication Topology

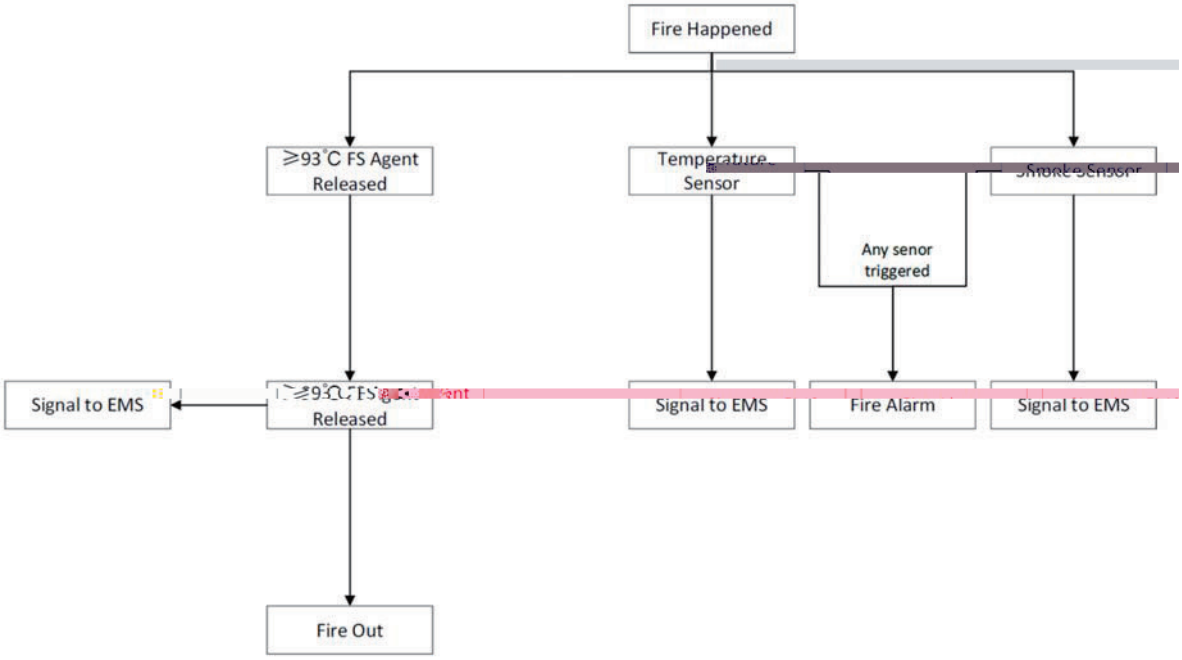


Fig. 3 FSS Workflow

Fig. 4: PCS Single Line Diagram

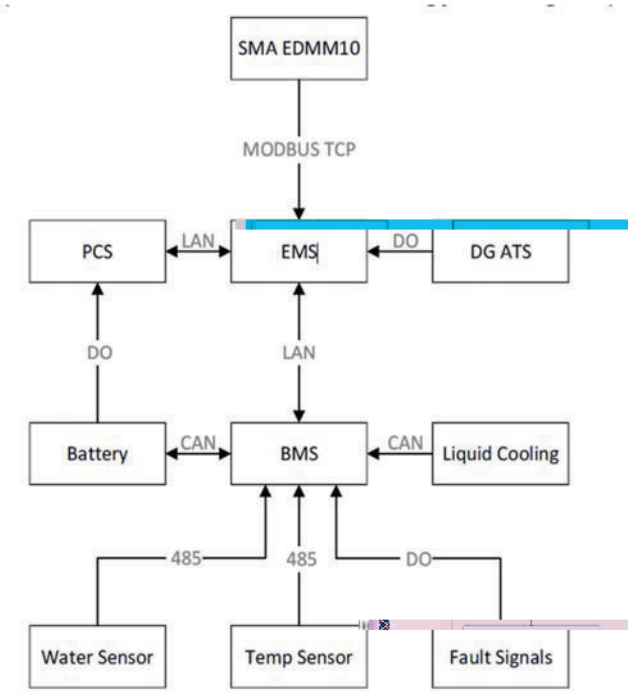


Fig. 5: EMS Communication Topology

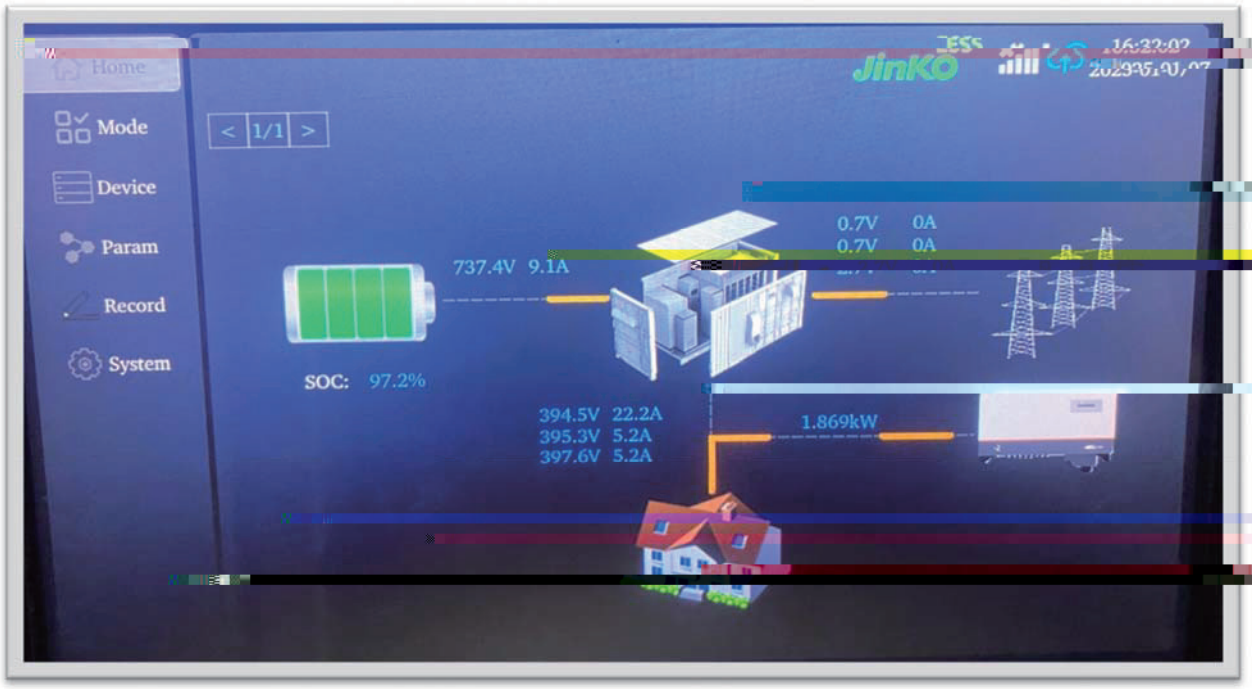


Fig. 5: EMS HMI Display

Fig. 6: EMS PV Inverters Power Limit Thresholds.

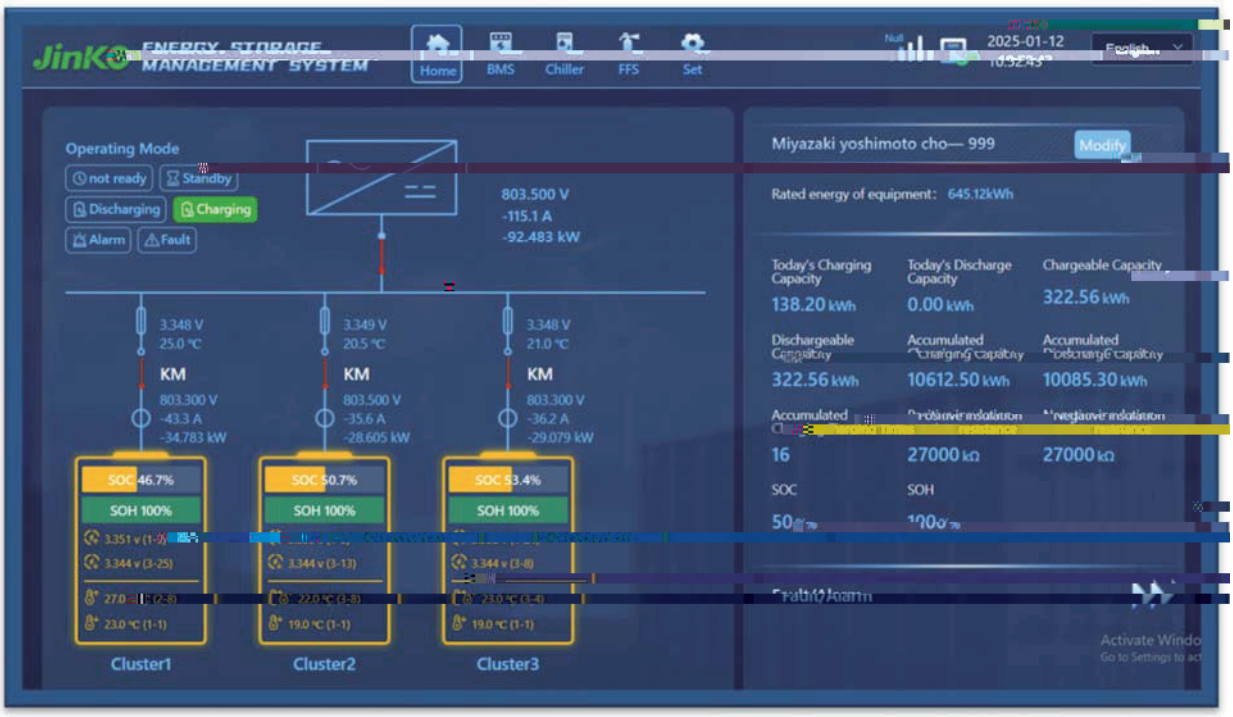


Fig. 6: SCU Cloud Monitoring Display

Fig. 7: System IoT Router

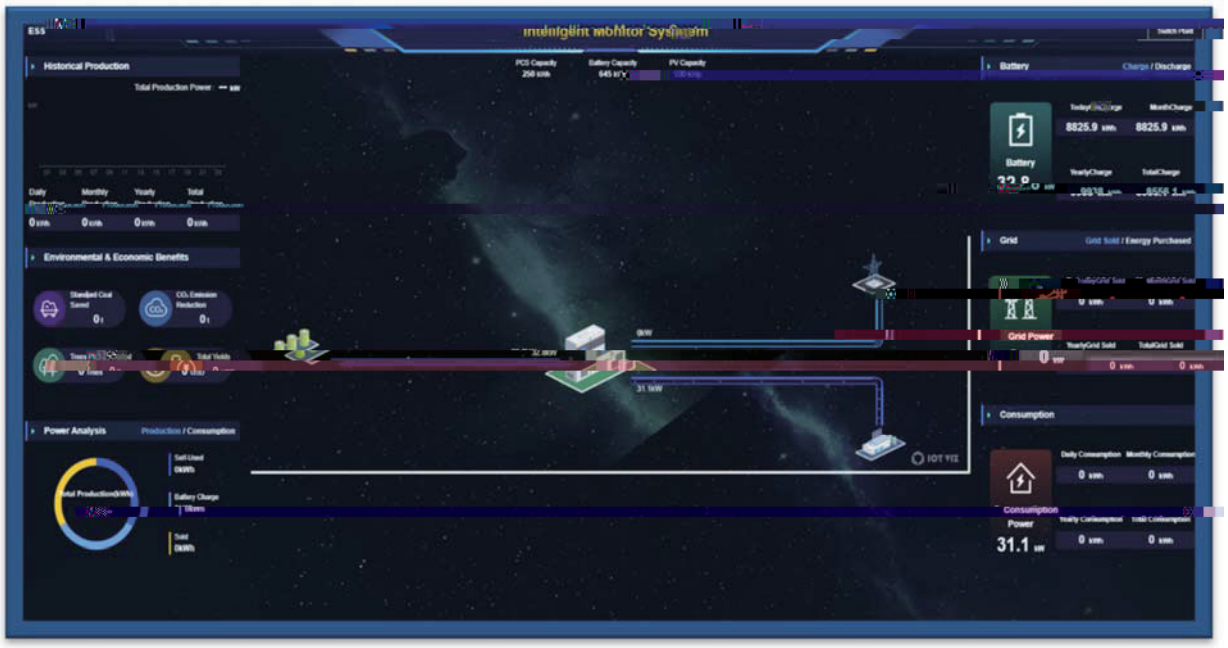


Fig. 8: EMS Cloud Monitoring Platform

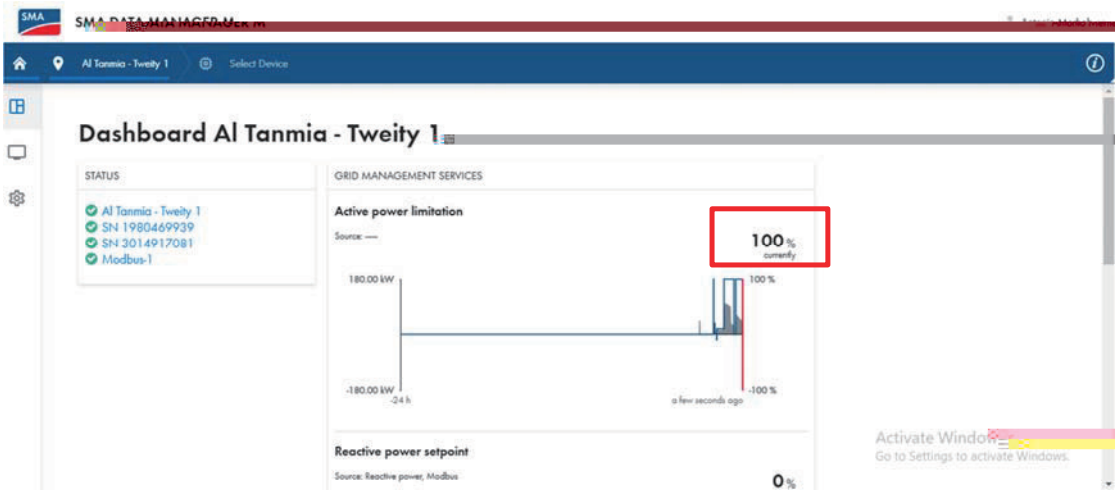


Fig. 9: SMA Monitoring platform showing 100% setpoint received from EMS

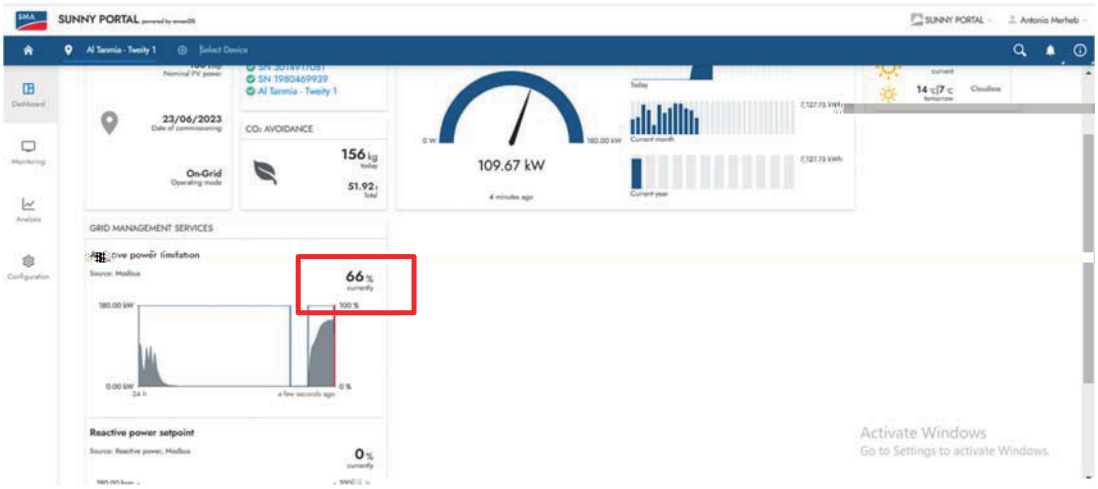


Fig. 10: SMA Monitoring platform showing 66% setpoint received from EMS

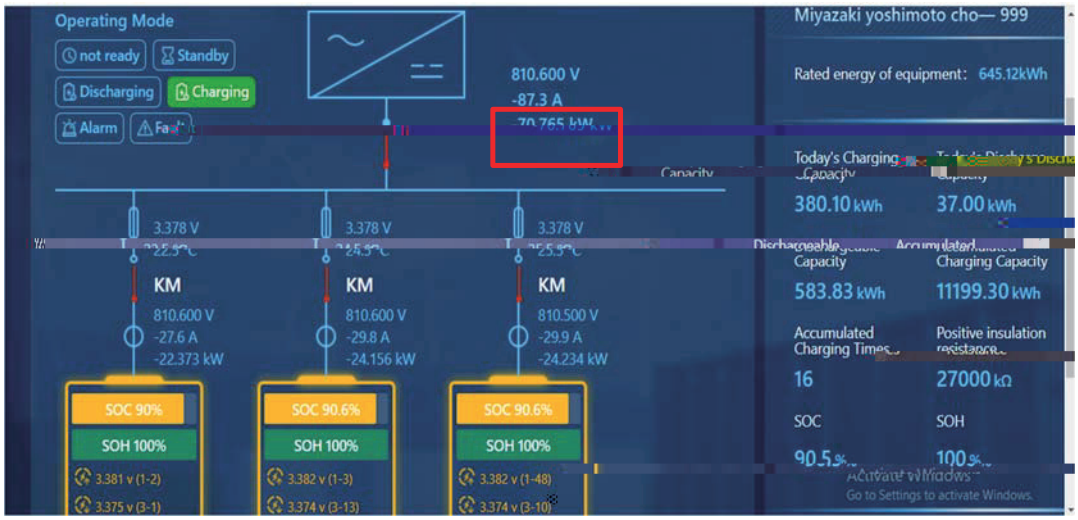


Fig. 11: SCU Monitoring showing charging power limit at 90% SOC

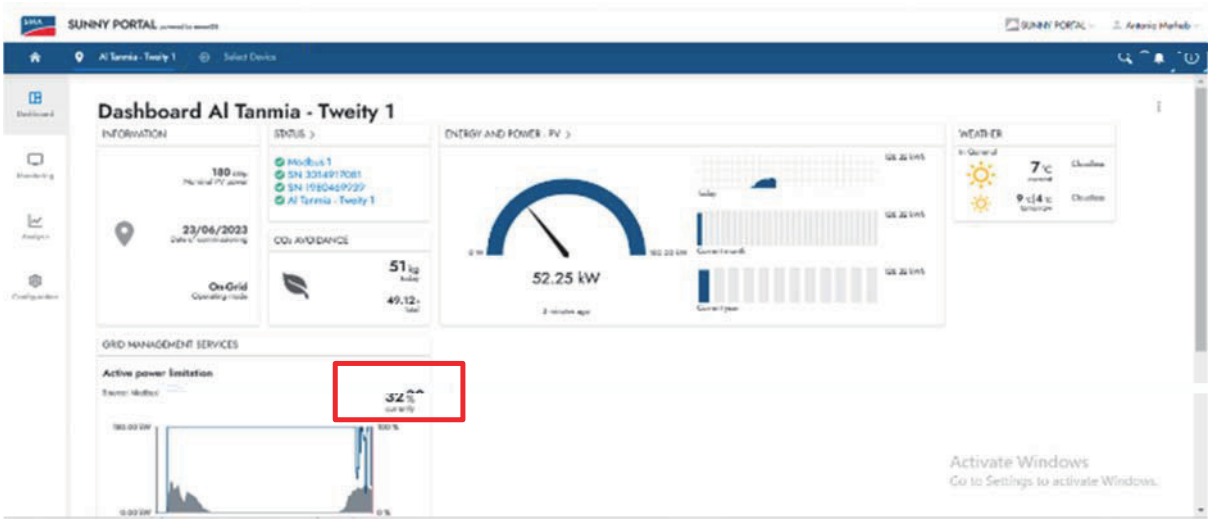


Fig. 12: SMA Monitoring platform showing 32% setpoint received from EMS

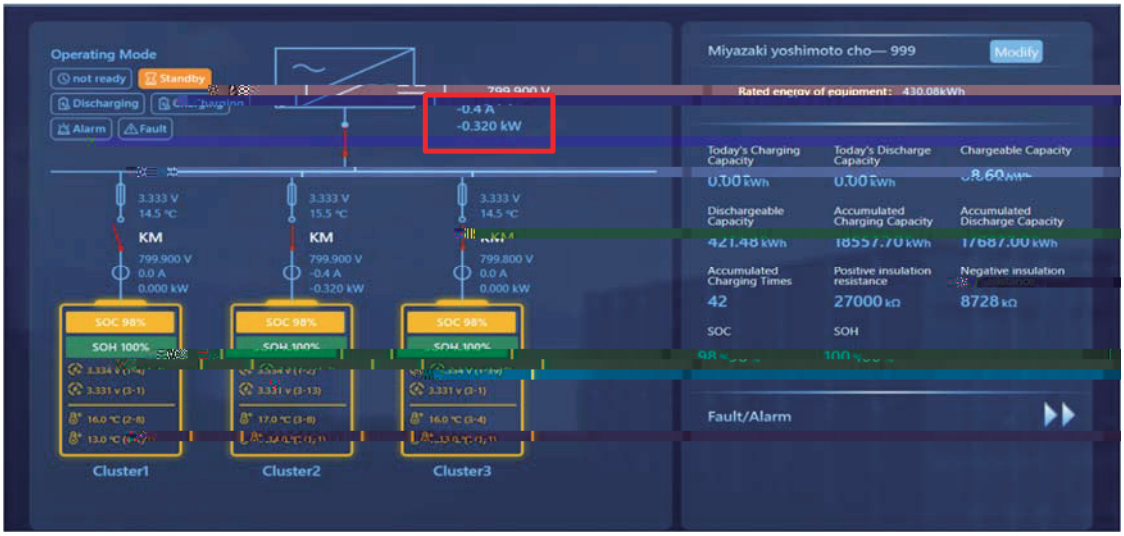
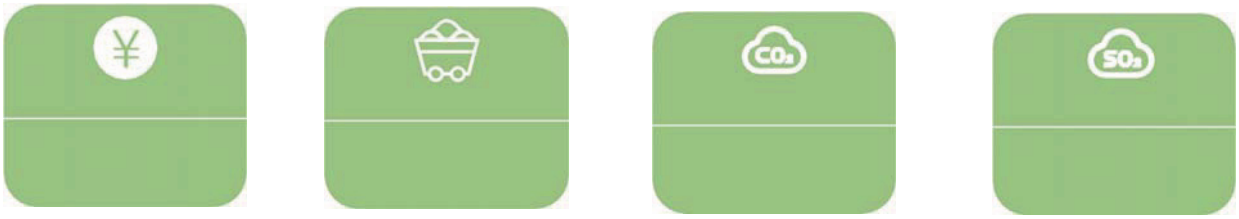


Fig. 14: SCU Monitoring showing charging power limit at 98% SOC



* The report serves as a general overview and is subject to updates by Jinko ESS. Jinko ESS reserves the right to modify the content and holds the final authority in its interpretation.

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Case Study