



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

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

Case Study

Project Overview

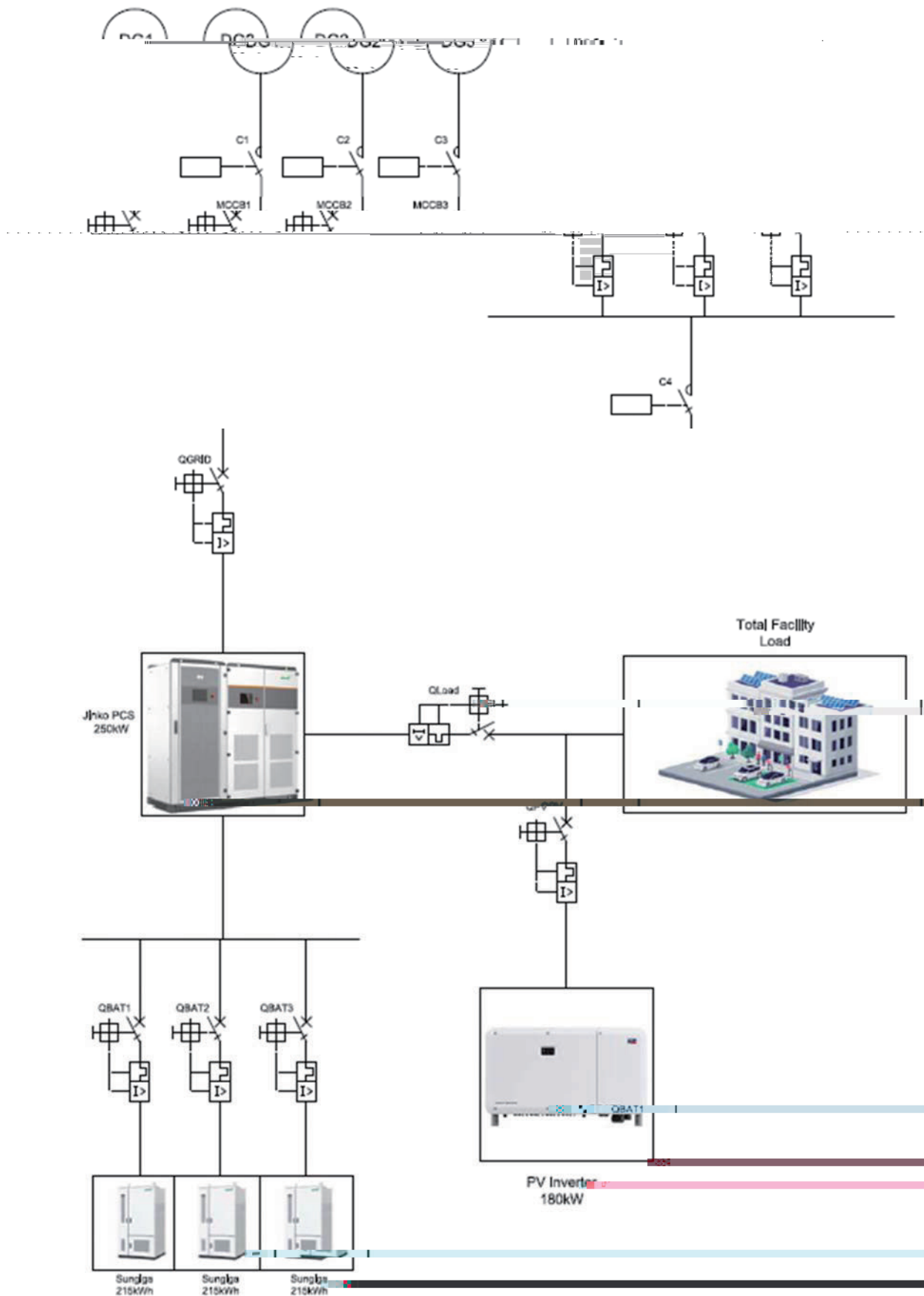


Fig. 1 Single Line Diagram of Micro-grid AC-Coupled System

Battery Rack

Fig. 2 BMS Communication Topology

Battery Management System

Liquid Cooling System

Fire Suppression System

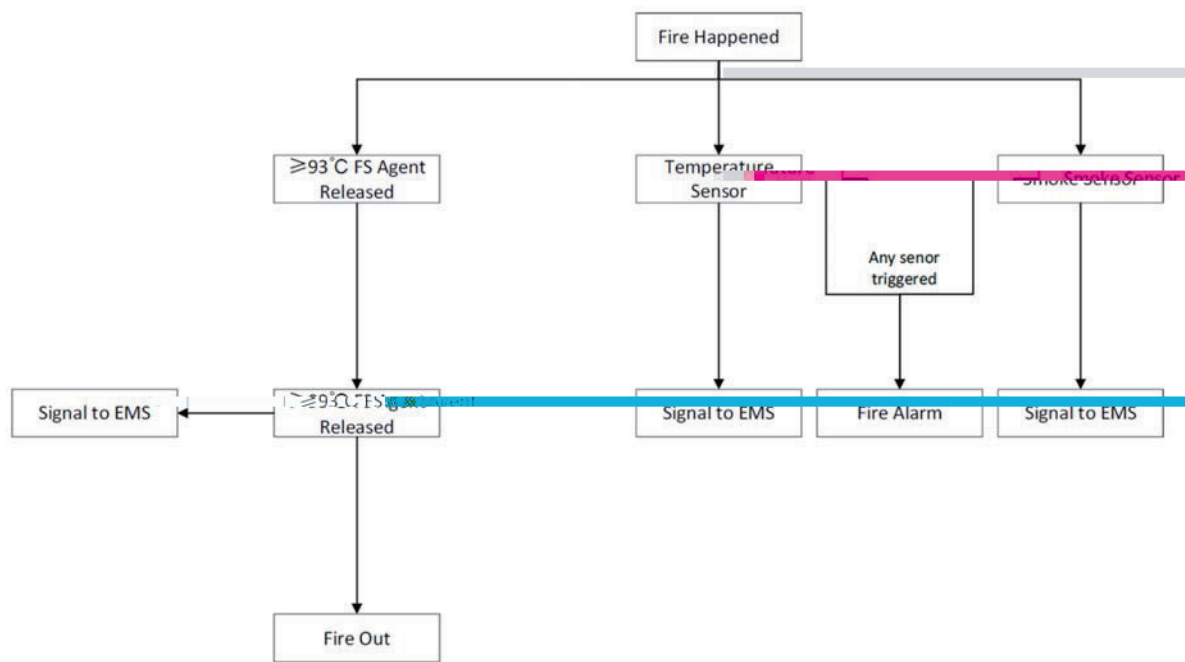


Fig. 3 FSS Workflow

Power Conversion System (PCS)



Fig. 4: PCS Single Line Diagram

Energy Management System (EMS)

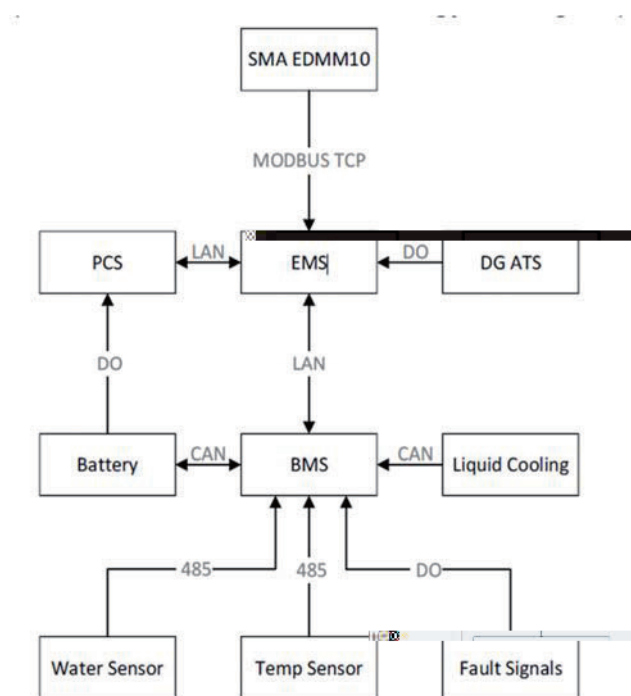


Fig. 5: EMS Communication Topology



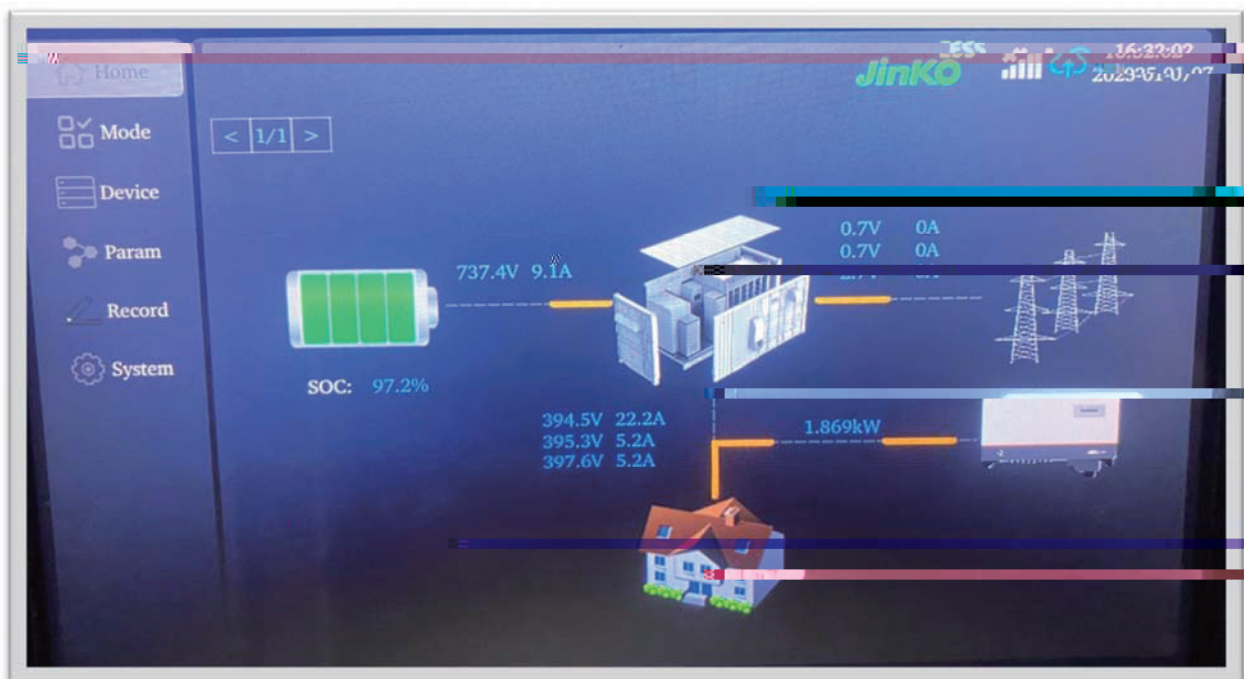


Fig. 5: EMS HMI Display



Fig. 6: EMS PV Inverters Power Limit Thresholds.

SCU Monitoring

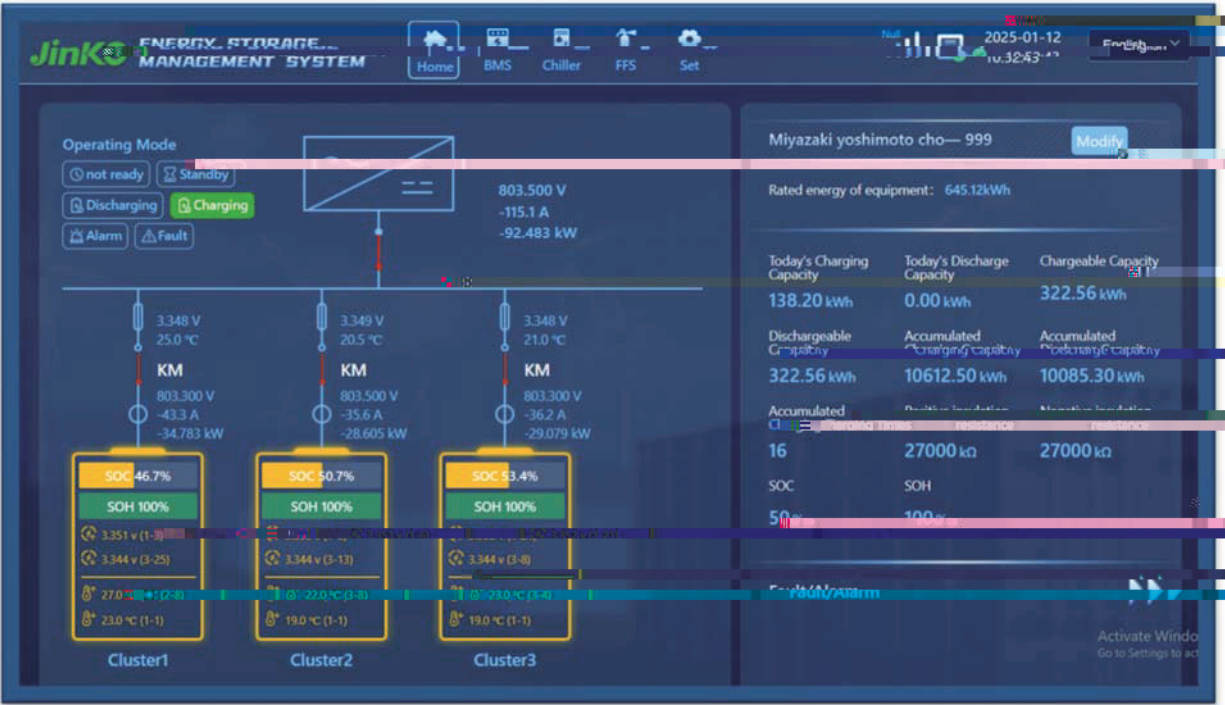


Fig. 6: SCU Cloud Monitoring Display

EMS Monitoring



Fig. 7: System IoT Router

N.B:

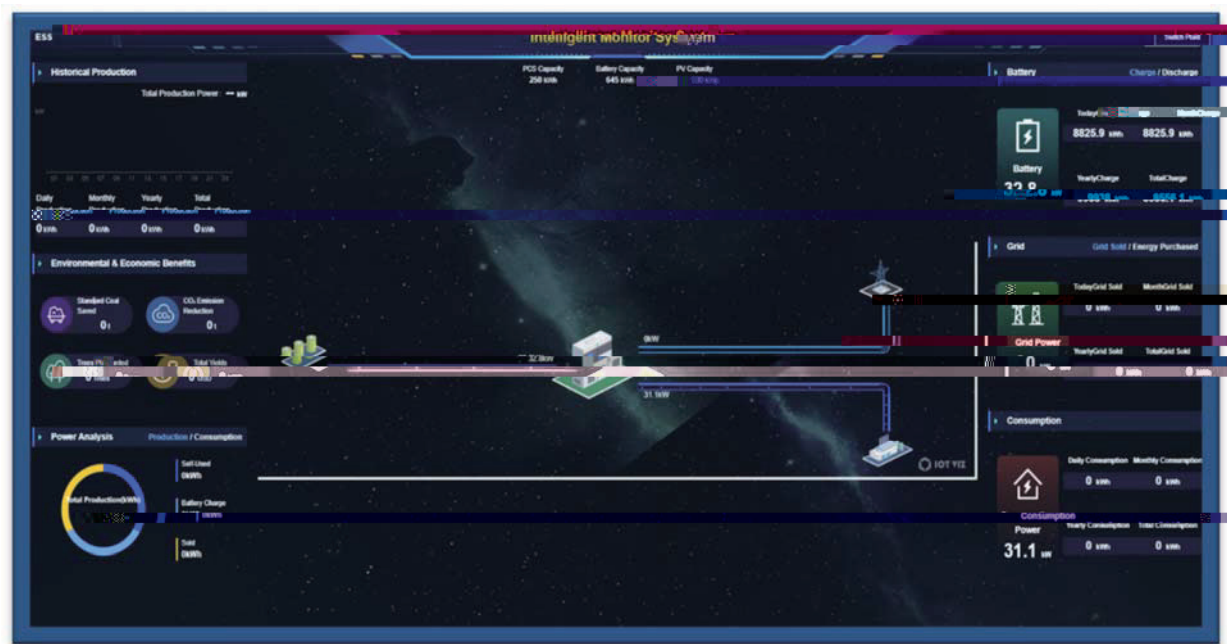


Fig. 8: EMS Cloud Monitoring Platform

20%SOC090

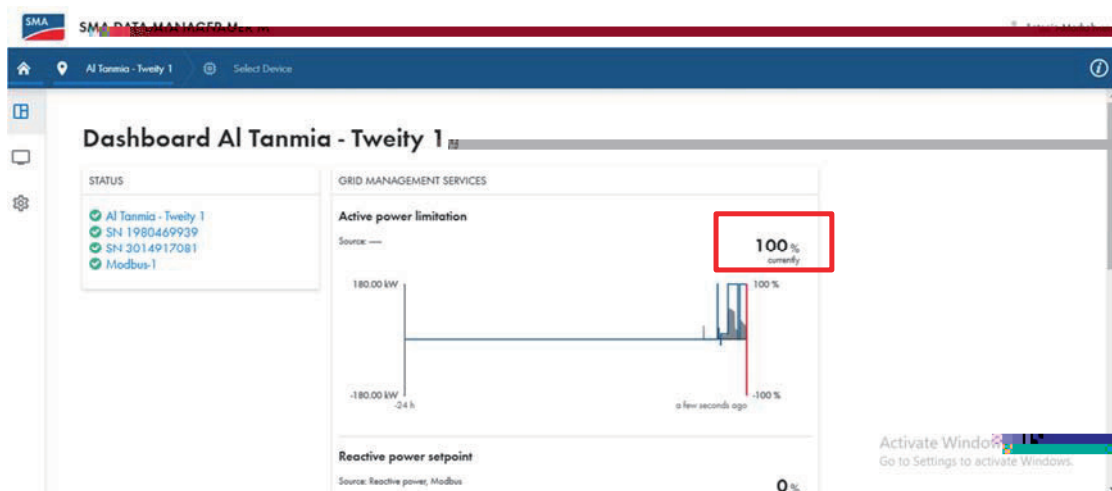


Fig. 9: SMA Monitoring platform showing 100% setpoint received from EMS

90%SOC095

$$\frac{109.67 \text{ kW}}{175 \text{ kW}} = 62\%$$

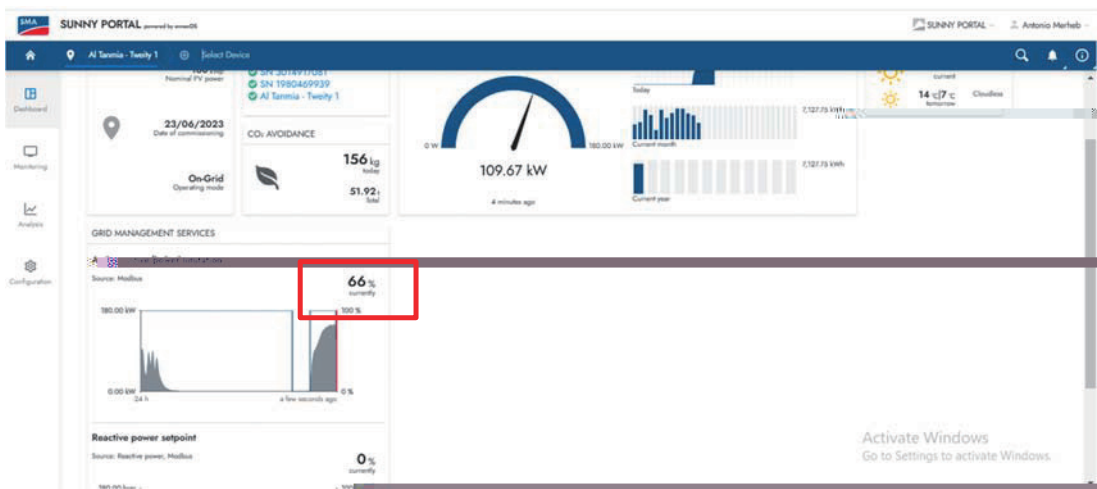
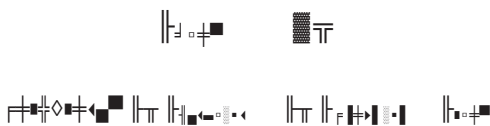


Fig. 10: SMA Monitoring platform showing 66% setpoint received from EMS

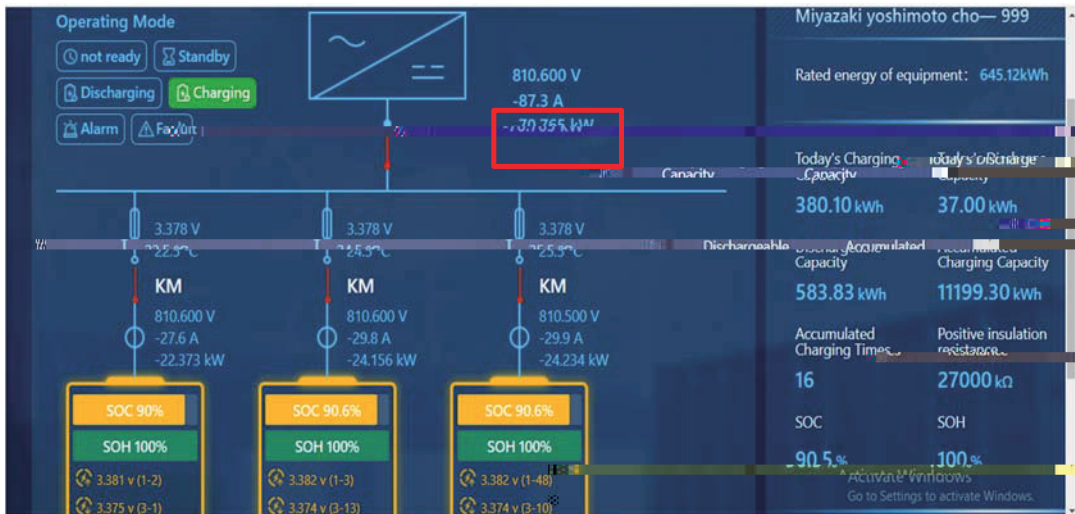


Fig. 11: SCU Monitoring showing charging power limit at 90% SOC

98%SOC

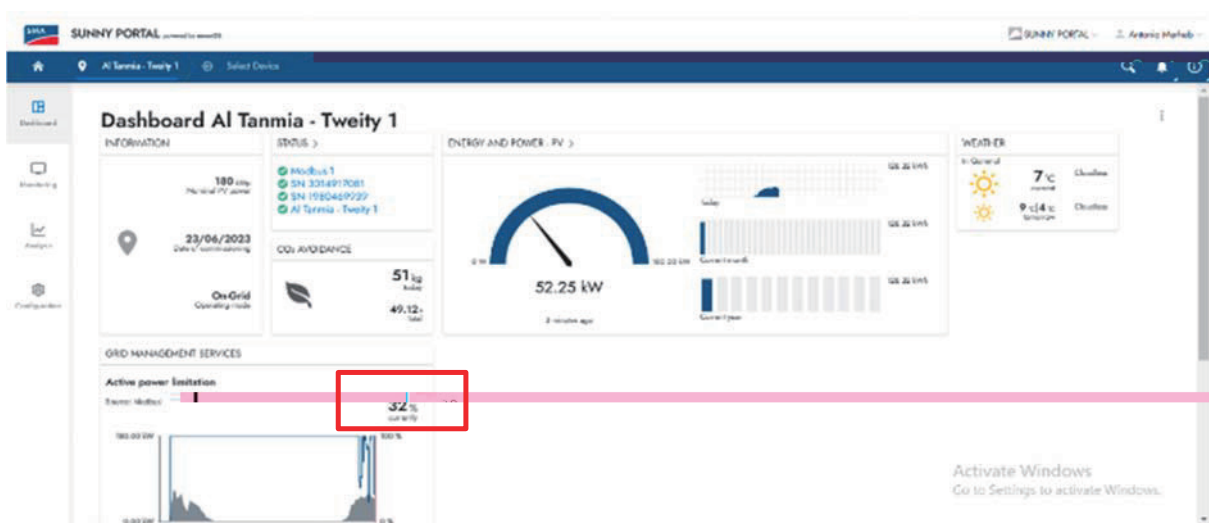
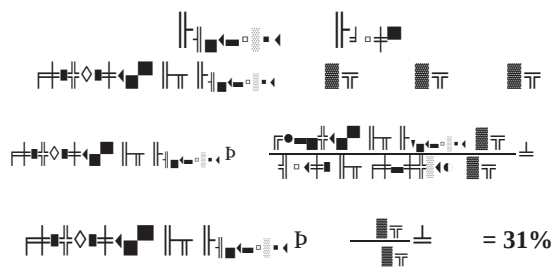


Fig. 12: SMA Monitoring platform showing 32% setpoint received from EMS

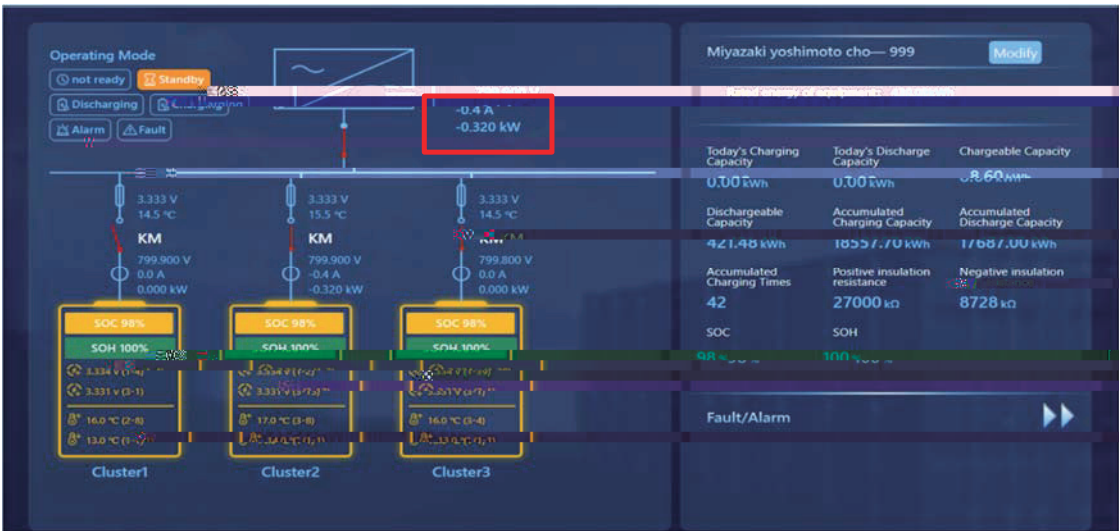


Fig. 14: SCU Monitoring showing charging power limit at 98% SOC



* 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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