

PowerMind AI - Optimization Layer Summary

Objective:

- Analyze and improve electricity usage based on real-time monitoring data.

Optimization Goals:

- Minimize power waste and overuse
- Avoid peak hour overconsumption
- Ensure voltage and current stay within safe limits

Threshold Rules Used:

- Max Current: 10A
- Max Power: 500W
- Min Voltage: 10V
- Peak Hours: 18:00 to 22:00

Engine Features:

- Reads live voltage, current, and power data from CSV
- Applies rule-based optimization logic
- Logs alerts for any anomalies to 'optimization_alerts.log'

Script:

- File: optimization_engine.py
- Status: Ready and expandable for future AI integration

Next Phase:

- Move into Control Layer to automate power switching, device control, or energy source decisions.