



Energy Load Balancing & Peak Shaving Checklist 2026

Pre-Audit Data Collection & Baseline Establishment

Identify historical load profiles, peak demand periods, and baseline energy consumption metrics required for comparison.

Baseline Data Start Date

Baseline Data End Date

Average Monthly Peak Demand (kW)

Primary Energy Source

- ☐ Grid Electricity
- ☐ Solar PV
- ☐ Wind
- ☐ Diesel Generator
- ☐ Natural Gas

Historical Utility Bills/Interval Data

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Included Load Types

- ☐ HVAC
- ☐ Lighting
- ☐ Manufacturing Equipment
- ☐ Refrigeration
- ☐ EV Charging Stations

Data Discrepancy Notes

Write something...

Load Profile Analysis & Forecasting

Analyze interval data to identify predictable peak loads and implement forecasting models for future demand spikes.

Analysis Period Start Date

Analysis Period End Date

Historical Load Profile Data (CSV/Excel)

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Primary Load Pattern Type

- ☐ Constant/Baseload
- ☐ Diurnal (Day/Night Cycle)
- ☐ Seasonal
- ☐ Erratic/Intermittent

Identified Peak Demand (kW/MW)

Forecasting Variables Used

- ☐ Weather/Temperature Data
- ☐ Production Schedule
- ☐ Day of Week/Holiday Calendar
- ☐ Market Pricing Forecasts

Forecasting Model Discrepancy Notes

Write something...

Peak Shaving Strategy Development

Define specific protocols for discharging energy storage, adjusting controllable loads, and triggering demand response events.

Primary Peak Shaving Method

- ☐ Battery Energy Storage Discharge
- ☐ Load Shedding (Non-Critical)
- ☐ Thermal Energy Storage Utilization
- ☐ Demand Response Program Participation

Target Peak Load Reduction (kW)

Enter a number...

Trigger Threshold Criteria

Write something...

Strategy Implementation Date

Enter date...

Identified Peak Demand Assets

- ☐ HVAC Systems
- ☐ Industrial Compressors
- ☐ EV Charging Stations
- ☐ Lighting Arrays
- ☐ Pumping Stations

Strategy Approval Signature

Demand Side Management (DSM) Configuration

Verify the automation of HVAC, lighting, and heavy machinery settings to respond to real-time load balancing signals.

Primary DSM Control Strategy

- ☐ Automated Load Shedding
- ☐ Peak Clipping
- ☐ Load Shifting
- ☐ Demand Response Participation

Identified Controllable Loads

- ☐ HVAC Systems
- ☐ Industrial Compressors
- ☐ Electric Vehicle (EV) Charging Stations
- ☐ Water Heating Units
- ☐ Lighting Systems
- ☐ Pumping Stations

Maximum Allowable Peak Threshold (kW)

Enter a number...

Automation Trigger Logic Description

Write something...

Configuration Last Validated Date

Enter date...

DSM Logic & Programming Documentation

 Upload File

Engineer Approval for Configuration

Energy Storage System (ESS) Readiness

Assess the state of charge, discharge rates, and-response latency of battery or thermal storage assets for peak deployment.

Last Battery Health Inspection Date

Enter date...

Current State of Charge (SoC) Percentage

Enter a number...

Storage Technology Type

- ☐ Lithium-Ion
- ☐ Flow Battery
- ☐ Thermal Storage
- ☐ Flywheel

Verified Operational Components

- ☐ BMS (Battery Management System)
- ☐ Inverters/PCS
- ☐ Thermal Management/Cooling
- ☐ Fire Suppression System

Discharge Readiness Notes

Write something...

Upload Maintenance Log/Report

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Load Shedding Hierarchy & Priority Mapping

Establish a tiered list of non-critical loads to be disconnected during peak pricing or grid instability events.

Critical Load Identifier

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Priority Level

- ☐ Priority 1 - Mission Critical (Never Shed)
- ☐
- ☐ Priority 3 - Important (Shed during Peak Demand)
- ☐ Priority 4 - Non-Essential (First to be Shed)

Estimated Power Consumption (kW)

Enter a number...

Shedding Trigger Triggers

- ☐ Peak Pricing Event
- ☐ Grid Frequency Instability
- ☐ Internal Capacity Limit Reached
- ☐ Demand Response Request

Shedding Impact Assessment

Write something...

Compliance Officer Approval

Real-Time Monitoring & IoT Sensor Integration

Validate the connectivity and accuracy of smart meters, CT sensors, and telemetry for real-time load visibility.

Sensor Calibration Date

Enter date...

Smart Meter Connectivity Status

- ☐ Online
- ☐ Offline
- ☐ Intermittent

Sensor Latency (ms)

Enter a number...

Monitored Infrastructure Components

- ☐ Smart Meters
- ☐ Current Transformers (CT)
- ☐ Temperature Sensors
- ☐ Power Quality Analyzers
- ☐ Inverters

Sensor Network Topology Map

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Signal Interference Observations

Write something...

Technician Verification

Automated Demand Response (ADR) Testing

Execute simulated demand response events to ensure hardware and software trigger load reductions without manual intervention.

Test Execution Date

Enter date...

Test Start Time

Enter time...

ADR Scenario Tested

- ☐ Price-Based Signal (Critical Peak Pricing)
- ☐ Event-Based Signal (Grid Stress)
- ☐ System Failure Simulation

Responsive Assets Verified

- ☐ HVAC Systems
- ☐ Industrial Compressors
- ☐ EV Charging Stations
- ☐ Lighting Controllers
- ☐ Battery Storage (BESS)

Measured Peak Load Reduction (kW)

Enter a number...

Test Discrepancy Notes

Write something...

Load Profile Log Report

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Lead Engineer Verification

Operational Personnel Training & Emergency Protocols

Review staff training modules for manual override procedures and emergency load balancing during grid failure.

Training Modules Completed

- ☐ Peak Shaving Protocol Basics
- ☐ Emergency Load Shedding Procedures
- ☐ Smart Meter & Sensor Troubleshooting
- ☐ Demand Response Automation Management

Last Training Session Date

Enter date...

Emergency Protocol Gaps Identified

Write something...

Training Attendance Logs

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Supervisor Verification

Post-Event Performance Review & Optimization

Analyze the effectiveness of completed peak shaving events and adjust strategies based on cost-savings and load-reduction accuracy.

Date of Load Balancing Event

Enter date...

Total Peak Demand Reduction (kW)

Enter a number...

Estimated Cost Savings Achieved (\$)

Enter a number...

Event Success Rating

- ☐ Highly Successful
- ☐ Partially Successful
- ☐ Unsuccessful

Identified Optimization Areas

- ☐ Software/Algorithm Tuning
- ☐ Hardware/Sensor Maintenance
- ☐ Staff Training/Procedural Updates
- ☐ Load Priority Re-classification

Summary of Deviations from Planned Load Profile

Write something...

Detailed Post-Event Analytics Report

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Energy Manager Approval

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✓ Finish

 Generate Sample Report