

PROPOSAL FOR ENERGY AUDIT SERVICES

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1. Introduction

Energy costs account for a major portion of industrial production expenses. Inefficient energy usage leads to higher operational costs and environmental impact. The purpose of this Energy Audit is to identify areas of energy wastage, assess system efficiency, and recommend cost-effective corrective actions to reduce energy consumption and improve sustainability.

This proposal outlines the methodology, roadmap, and deliverables for conducting a detailed energy audit in your industrial facility.

2. Objectives of the Energy Audit

- To analyze current energy consumption patterns.
- To identify energy losses and inefficiencies in electrical and thermal systems.
- To quantify potential energy and cost savings.
- To recommend practical energy conservation measures.
- To support compliance with NEPRA and ISO 50001 standards.

3. Scope of Work

- Electrical Systems – Transformers, motors, MCCs, drives, cables, and lighting.
- Thermal Systems – Boilers, furnaces, heat exchangers, steam and condensate systems.
- Compressed Air System – Compressors, air dryers, pipelines, and leak detection.
- Utilities – HVAC, refrigeration, water pumps, and cooling towers.
- Production Processes – Energy consumption per process/unit of production.
- Renewable Energy Opportunities – Solar PV integration and waste heat recovery.

4. Stepwise Roadmap for Energy Audit

The energy audit is conducted in the following structured phases:

1. Step 1: Preliminary Assessment (Pre-Audit Phase)

- Conduct initial meeting, collect utility bills, review diagrams, and plan site visit.

2. Step 2: On-Site Detailed Energy Audit (Field Data Collection)

- Measure key parameters, observe equipment operation, identify leaks and inefficiencies.
3. Step 3: Data Analysis and Benchmarking
 - Analyze collected data, benchmark against standards, and identify gaps.
 4. Step 4: Recommendation & Action Plan Development
 - Develop prioritized energy-saving recommendations with payback analysis.
 5. Step 5: Draft Energy Audit Report Preparation
 - Prepare draft report and review findings with client's team.
 6. Step 6: Final Report & Presentation
 - Submit final report, conduct management presentation, and suggest implementation roadmap.
 7. Step 7: Post-Audit Support (Optional)
 - Provide support for implementation and training; verify energy savings.

5. Tools & Instruments Required

- Digital Power Analyzer (3-phase)
- Clamp Meters / Multimeters
- Infrared Thermography Camera
- Ultrasonic Leak Detector
- Lux Meter & Tachometer
- Flow and Pressure Gauges
- Data Loggers for voltage/current
- Thermal Imager

6. Duration and Team Composition

Pre-Audit Assessment – 2–3 Days

Field Data Collection – 5–7 Days

Analysis & Reporting – 7–10 Days

Presentation & Closure – 1 Day

Team Composition:

- Lead Energy Auditor (Electrical)
- Mechanical Engineer (Thermal Systems)
- Data Analyst / Technician

7. Deliverables

- Executive Summary (Management Overview)
- Detailed Technical Audit Report
- Energy Saving Opportunity List (with Payback Analysis)
- System Loss Diagrams & Visuals
- Implementation Roadmap
- Training & Awareness Material

8. Expected Benefits

- Reduction of total energy cost by 10–25%.
- Improved equipment life and reliability.
- Enhanced productivity and power quality.
- Compliance with national & international standards.
- Contribution toward sustainable and green operations.

9. Commercial Proposal (Indicative)

Detailed Energy Audit – PKR 400,000–500,000 (depending on plant size & complexity)

Post-Implementation Verification – PKR 50,000–100,000 (optional)

Final quotation will be based on actual site details.

10. Contact Information

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