Standard Operating Procedure (SOP)

Energy Usage Monitoring and Benchmarking Procedures

This SOP details **energy usage monitoring and benchmarking procedures**, covering the systematic tracking of energy consumption, data collection methods, analysis techniques, performance comparison against industry standards, identification of energy-saving opportunities, and regular reporting. The goal is to optimize energy efficiency, reduce operational costs, and support sustainability initiatives by establishing consistent monitoring and benchmarking practices.

1. Purpose

To ensure accurate, timely, and consistent tracking of energy consumption and to benchmark performance for continuous improvement in energy efficiency.

2. Scope

This SOP applies to all facilities, equipment, and processes that consume energy within the organization.

3. Responsibilities

Role	Responsibility
Facility Manager	Oversees the implementation of energy monitoring and benchmarking activities.
Energy Officer/Team	Collects, records, and analyzes energy data; prepares reports.
Maintenance Staff	Supports meter reading and ensures proper functioning of monitoring equipment.
Department Heads	Facilitate access and provide necessary data from their departments.

4. Procedure

1. **Identification of Energy Sources:**
   - List all sources of energy used (electricity, gas, oil, etc.).
2. **Metering and Sub-Metering:**
   - Install meters/sub-meters at strategic points if not already present.
   - Verify accuracy of all meters.
3. **Data Collection:**
   - Record energy consumption data from meters regularly (daily, weekly, monthly as appropriate).
   - Log data using standardized forms or digital monitoring systems.
   - Store and backup data securely.
4. **Data Validation & Quality Check:**
   - Verify data for anomalies or missing values.
   - Investigate any inconsistencies in meter readings.
5. **Analysis & Benchmarking:**
   - Aggregate energy data and analyze usage patterns.
   - Benchmark performance against:
     - Historical organizational data.
     - Industry standards or best practices (e.g., ENERGY STAR, ISO 50001).
6. **Identification of Opportunities:**
   - Highlight areas of high or unusual consumption.
   - Identify and propose energy-saving measures.

7. **Reporting:**
    - Prepare regular energy usage reports (monthly/quarterly/annual).
    - Share reports with relevant stakeholders.
8. **Corrective Actions:**
    - Implement improvements based on analysis and monitoring outcomes.
9. **Review and Continuous Improvement:**
    - Periodically review procedures for effectiveness.
    - Update processes as needed to reflect best practices.

5. Documentation

- Energy Usage Logs
- Data Collection Forms
- Meter Calibration Records
- Analysis and Benchmarking Reports
- Corrective Action Plans

6. References

- ISO 50001: Energy Management System Standard
- ENERGY STAR Guidelines
- National/Regional Energy Benchmarking Tools

7. Revision History

Date	Version	Description of Change	Author
2024-06-15	1.0	Initial Release	Energy Officer