



RMK-12: ENERGY EFFICIENCY PROJECTS

ENERGY AUDIT CONDITIONAL GRANT

2021-2025

**ENERGY AUDIT REPORT GUIDELINE
(INDUSTRIAL)**

ENERGY AUDIT REPORT GUIDELINE

The report should contain the following structure and key contents including text, table, chart and photos. Auditor can add necessary information, sketches where necessary.

1. TITLE AND COVER

- The title of the Energy Audit exercise with full name and address of the factory facilities.
- Location of facility or factory.
- Date of report.
- The auditor's full name.

2. EXECUTIVE SUMMARY

- Objectives, scope and type of audit.
- Key systems and equipment audited.
- Brief summarized description of energy saving recommendations and their cost-effectiveness.

**This chapter is mainly addressed to the top management and the decision makers and is therefore the most important chapter with regard to follow up and implementation.*

3. MANAGEMENT OF ENERGY

- Policy and targets.
- Energy data, documentation and monitoring.
- Compliance with towards the regulations.
- Energy management team.
- Energy audit team.

4. OPERATIONAL REVIEW OF THE FACTORY

- Brief outline of the companies' profile products as well as the energy consumption for the base-year.
- Present the specific energy consumption figures.
- Compare the figures with benchmarks and make a first rough assessment of potential ESM.
- Energy profiles and breakdown.

5. TECHNOLOGICAL DESCRIPTION OF THE PROCESSES

- Process flow diagram and major components of operations.
- Identification of inefficient energy usage.

6. ENERGY SUPPLY AND DEMAND INFORMATION

- Total electricity supplied and consumption trends.
- Sources and types of energy supplied.
- Cost of energy supply (price, tariff).

7. UTILITY SYSTEM DESCRIPTION

- Description of each utility system and major equipment.
- Current energy performance/energy efficiency status (energy intensity) for plant, processes and major energy using equipment.

8. ENERGY CONSUMPTION INFORMATION

- Trends on energy consumption and load profile over specified period with relevant charts.
- Estimated annual energy consumption in energy unit (electricity/fuel) and the percentage (%) of load distribution such as HVAC, lighting and etc.
- Operating hours of the installation and major energy using system/equipment.

9. ENERGY SUPPLY AND CONSUMPTION ANALYSIS

- Remarks and conclusions from supply and consumption profiles and trends from energy bills and measurements.
- Suitability of energy supply types and tariff/prices.
- Current energy performance status (energy intensity) for factory, processes and major energy using equipment.

10. ENERGY SAVING POTENTIALS AND MEASURES

Summary of energy saving potentials and measures identified according to:

- No cost/low cost: housekeeping, minor repairs.
- High cost/major investment required: major repair/replacement/introduction of new technologies.
- Potential of energy savings in energy units and currency.
- Energy saving measurements and calculation methods.
- Potential returns from the costs to implement energy saving measures (Simple Payback Period/Investment Rate Return).
- Financing options/Government Incentives available.
- Guides on how to implement proposed energy saving measures.
- Proposed action plan and estimated time required to implement each measure.

11. ENERGY SAVING MEASUREMENT AND VERIFICATION

- Proposed types of baseline data to be used to measure results for each energy saving measure.
- Measurements and calculation methods.
- Proposed measurement and verification methods.

12. SUMMARY

- Summary of recommendations, estimated annual kWh, estimated cost savings, estimated investment cost and payback (in table form) within three (3) years implementation period.

13. SUSTAINABILITY PLAN

- Approach to be taken to put in place an energy management system for the company.

14. FINANCIAL PLAN

- Description on how the company intends to finance the implementation of the recommended ESMs (internal or external funds).

15. VERIFICATION

This Energy Audit Report is prepared by:		
prepared by:	checked by:	received by SEDA Malaysia
Name:	Name:	Name:
Position:	Position:	Position:
Date:	Date:	Date:

16. APPENDICES

- Measured energy data.
- Photos from site assessment.
- References such as Standards documents and best practices.

General Instruction and recommendations

1. It is highly recommended that a standard format is retained.
2. Try not to exceed 150 pages. Keep technical descriptions comprehensive and concise. Consider that in most cases decision makers are not necessarily engineers.
3. Pay special attention to a well-written and structured executive summary. The executive summary must be a stand-alone document. Try not to exceed four pages. The brief technical description of the measures must be easily understandable for non-technical people.
4. All tables and figures must be stand-alone documents as well. They must provide complete information without the need to read the respective text in the report. This applies to both the executive summary and the main part of the audit part.
5. Tables, which include calculations, should contain all the necessary base data so that calculations can be repeated or verified by others.
6. Consider when writing reports that a lot of editing will be necessary after the first version is

completed. Editing long reports is usually time consuming and it is recommended that the structures of tables and figures are kept simple.

7. Make use of standard text blocks from other audits. Consider that some of the measures are repeated in several audits. Try to make use of text blocks, tables and figures in new audits.
8. Structure the text of the report. Keep paragraphs short. Make a line break after each paragraph. Do not make line breaks within a paragraph.
9. Keep titles of tables and figures as short and concise as possible.
10. Avoid mentioning figures of results from calculations and from tables in the text. It is almost sure that if you change figures in the table you will forget to make the corresponding changes in the text. Instead, make references to the tables or graphs when explaining the details.