**ENERGY EFFICIENCY AND DEMAND SIDE MANAGEMENT Energy Audit Report Template**

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Table of Contents

[1 Energy Audits 3](#_Toc428170125)

[1.1 Steps for conducting the detailed audit 3](#_Toc428170126)

[1.2 List proposed efficiency measures 3](#_Toc428170127)

[1.3 Energy Audit Report 3](#_Toc428170128)

[1.3.1 Executive summary 3](#_Toc428170129)

[1.3.2 Background 4](#_Toc428170130)

[1.3.3 Facility description 4](#_Toc428170131)

[1.3.4 .Energy scenario 4](#_Toc428170132)

[1.3.5 Inventories 4](#_Toc428170133)

[1.3.6 Energy consumption baseline calculations, baseline parameters and adjustments 4](#_Toc428170134)

[1.3.7 Data collection 4](#_Toc428170135)

[1.3.8 System mapping 4](#_Toc428170136)

[1.3.9 List of energy efficiency potential projects 4](#_Toc428170137)

[1.3.10 Review of current operation & maintenance practices 4](#_Toc428170138)

[2 Energy Efficiency Project Business and Implementation Plan 5](#_Toc428170139)

[3 Monitoring, Reporting and Verifications of energy savings 5](#_Toc428170140)

[3.1 Monitoring and Evaluation by the Department of Energy 5](#_Toc428170141)

[3.2 Measurement and Verification (M&V) by Municipalities 5](#_Toc428170142)

[3.3 Reporting Frequency 6](#_Toc428170143)

# Energy Audits

The energy audits is to calculate baseline of energy use from all relevant information, such as operating conditions, measurements of various system equipment, log book trends, historical data, and any previous test reports on the existing operating conditions of the municipality.

## Steps for conducting the detailed audit

A detailed energy audit includes data collection, measurements of the systems, analysis of the historical and measured data, and detailed energy savings calculations for suggested municipal EEDSM projects.

## List proposed efficiency measures

The detailed energy audit carried out at the various facilities will help identify energy efficiency measures. The measures that have the best technical and economic potential will be funded through the municipal EEDSM grant.

## Energy Audit Report

The municipal energy audit report is not only the foundation for the EEDSM grant, but is the key document to be used by the Department of Energy to assess the energy savings and financial viability of the project.

***The minimum content of the report should be as follows:***

### 1.3.1 Executive summary

The session should provide a brief description of the systems and facilities covered, as well as overview of the existing conditions, measures, methodology, results and a summary table presenting the cost and savings estimates for each recommended energy efficiency measure. It should also include a summary of the recommended measures and costs as well as the financial indicators of the project.

### 1.3.2 Background

Extensive background about the municipality and project should be provided.

### 1.3.3 Facility description

Details of the existing facilities targeted, such as water treatment, street lighting, traffic signals, water pumping and waste water treatment, and municipal buildings including municipal hospitals.

### 1.3.4 .Energy scenario

Energy consumption details of all facilities included in the audit and their energy sources.

### 1.3.5 Inventories

This session should cover Inventories of all relevant systems, including pumping, lighting, water treatment, and traffic signals.

### 1.3.6 Energy consumption baseline calculations, baseline parameters and adjustments

Methodology followed in establishing the baseline including parameters and the criteria to be followed in adjusting it should be described. Provide all the baseline calculation sheets, parameters and the calculation procedure in an annex (***attached as energy audits sheets per facility***).

### 1.3.7 Data collection

List the various types of data collected and their sources. Include the data in the annex (as audit sheets, template are provided).

### 1.3.8 System mapping

Describe the methodology followed for system mapping and include the maps in the annex, where applicable.

### 1.3.9 List of energy efficiency potential projects

This session should list of all identified measures with estimates of the savings and payback periods on investments.

### 1.3.10 Review of current operation & maintenance practices

Provide detailed description of current operation and maintenance (O&M) practices within the Municipal facility. This should include discussion with operators, engineers and other staff, observing the day to day O&M and reviewing the log sheet during the field study. The municipality has to identify areas for improvement and suggest the strategy and methodology for implementing it.

# Energy Efficiency Project Business and Implementation Plan

The municipality shall develop a set of potential energy efficiency projects for consideration by the Department of Energy based on the technical energy audits (***business plan template will be provided***). The proposed business and implementation plan shall, among others, have the following:

1. Description of the energy baseline situation
2. Project scope
3. Technical constraint analysis
4. Project financials
5. Baseline calculation
6. Options for measurement and verification
7. Assessment of potential technical and financial risk and a risk mitigation plan
8. Energy Efficiency Awareness and Communication Plan
9. Skills development approach and plan

# Monitoring, Reporting and Verifications of energy savings

## Monitoring and Evaluation by the Department of Energy

The Department of Energy’s Energy Efficiency Directorate shall conduct quarterly inspections and technical audits to evaluate progress against reported milestones by municipalities, and also to confirm whether the implementation is in accordance with the contract specifications and standards.

## Measurement and Verification (M&V) by Municipalities

Measurement and verification shall involve the appointment of independent M&V Bodies, and will be to conduct measurement of energy savings in accordance with South African National Standards (SANS) 50010. The savings shall be calculated relative to the baseline, and the choice of M&V by the municipalities shall be consistent with the calculation of the baseline.

## Reporting Frequency

The municipalities shall provide monthly reports on/or before the 10th of every months, and quarterly reports every 20th day after the end of the quarter. The annual performance reports (close-up report) shall be submitted by municipalities every 3rd month after the end of the financial year.

Municipal Manager :

Signature :

Date :