AS/NZS 3598.3:2014

Australian/New Zealand Standard™

Energy audits

Part 3: Transport related activities

STANDARDS Australia

STANDARDS NEW ZEALAND PAEREWA AOTEAROA

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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EN-001, Energy Auditing, to supersede, in part, AS/NZS 3598:2000, *Energy audits*.

Energy audits are an integral part of the energy management process. They determine how efficiently energy is being consumed, identify energy and cost saving opportunities and can highlight potential process and productivity improvements. Implementing energy audit recommendations usually achieves significant cost savings.

This Standard will assist organizations to decide on the appropriate type of audit for their fleets, provide a guide when commissioning energy audits and present a uniform basis for preparing and comparing fleet energy audit proposals. It also aims to establish best practice for energy auditors, support the establishment of energy management systems and contribute to the quality of existing energy and other management systems.

This Standard covers the general requirements for energy audits in the transport sector. Requirements for other types of operation are provided in the following Standards:

(a) AS/NZS 3598.1, *Energy audits*, Part 1: *Commercial buildings*

(b) AS/NZS 3598.2, *Energy audits*, Part 2: *Industrial and related activities*.

In the preparation of this Standard reference was made to the following:

(i) ISO 50002, *Energy audits—Requirements with guidance for use*.

(ii) ISO 50015, *Energy management systems—Measurement and verification of energy performance of organizations—General principles and guidance*.

Acknowledgement is made of the assistance received therefrom.

The terms ‘normative’ and ‘informative’ have been used in this Standard to define the application of the appendix to which they apply. A ‘normative’ appendix is an integral part of a Standard, whereas an ‘informative’ appendix is only for information and guidance.

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FOREWORD

Energy audits are investigations of energy use for a defined audit object, such as a trucking fleet, railway network or an airline fleet. They enable the identification of energy use and costs, from which energy cost and consumption control measures can be implemented and reviewed. An energy audit is an important step for an organization, regardless of its size, type or area of operation. Organizations may commission energy audits to improve their energy performance, reduce energy consumption and achieve financial and environmental benefits.

An energy audit is best undertaken within the context of an energy management system that complies with an appropriate industry Standard, such as ISO 50001, *Energy management systems—Requirements with guidance for use*.

This Standard defines the attributes of an energy audit that is appropriate for a transport system, to enable the organization commissioning the audit, and the energy auditor selected to conduct the audit, to reach a common understanding of the audit's scope, process and deliverables. It states the minimum requirements for energy audits and corresponding obligations within the energy auditing process necessary for compliance with the Standard.

This Standard recognizes that there are differences in approach to energy auditing of transport fleets in terms of scope, boundary and objective, but seeks to harmonize common aspects of energy auditing in order to bring more clarity and transparency to the market for energy auditing services for transport systems.

This Standard does not address the requirements for auditing an organization's energy management system, which are covered by ISO 50003*, *Energy management systems—Requirements for bodies providing audit and certification of energy management systems*.

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STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard
Energy audits

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1 SCOPE

This Standard sets out minimum requirements for commissioning and conducting three prescribed types of transport system energy audits that identify opportunities for cost effective investments to improve energy performance. It covers all forms of energy used in all transport fleets.

Requirements for each specified type of audit are designed to meet the organization's business needs and provide sufficient analytical rigour to provide a degree of confidence in the results that is appropriate to meet these transport business needs. The energy audit process is presented as a simple chronological sequence, but this does not preclude repeated iterations of certain steps.

This Standard outlines requirements for transport system energy audits.

This Standard applies both to organizations for which transport is the core activity, and to organizations for which transport is a support activity to other operations, such as mining or construction. Organizations may apply this Standard to on-site operations, such as off-road mine haulage, as well as transport operations using public transport infrastructure.

This Standard also applies to all modes of transport, as well as the different ranges (from local to long distance) and what is transported (i.e. freight and people). The Standard advises on the optimization of energy in single mode or multi-modal transport fleets.

Fixed on-site materials handling systems such as conveyors are not covered by this Standard. These are covered by AS/NZS 3598.2. Warehousing and distribution centre operations, including refrigeration systems, are covered in AS/NZS 3598.1.

Clauses 6 to 12 of this Standard establish the procedures for energy auditing in transportation systems, focusing on aspects that are common to every transport mode. In order to state the energy auditing features of particular transport modes, there is specific guidance for each of them at Appendix E, Paragraph E7.

2 OBJECTIVES

The objectives of this Standard are to—

(a) provide a specification for organizations when commissioning energy audits for transport fleets to identify opportunities for cost effective investments to improve energy performance;

(b) provide a framework for the evaluation of fleet data, energy management systems and operational procedures as a precursor to a detailed energy audit to quantify opportunities;

(c) assist organizations to decide what type of audit is appropriate for their needs;

(d) provide auditors with a uniform basis for preparing and comparing energy audit proposals for different fleets;

(e) establish best practice for energy auditors to provide effective and professional service to transport fleet operators;