AS/NZS 3598.2:2014

Australian/New Zealand Standard™

Energy audits

Part 2: Industrial and related activities

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EN-001, Energy Auditing. It was approved on behalf of the Council of Standards Australia on 9 September 2014 and on behalf of the Council of Standards New Zealand on 21 August 2014.
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The following are represented on Committee EN-001:

Association of Building Sustainability Assessors
Australian Chamber of Commerce and Industry
Australian Industry Group
Australian Institute of Refrigeration Air Conditioning and Heating
Bureau of Steel Manufacturers of Australia
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This Standard was issued in draft form for comment as DR AS/NZS 3598.2.

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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 provide essential information to determine how efficiently energy is being consumed, identify energy and cost saving opportunities and highlight potential process and productivity improvements. In most cases, implementing energy audit recommendations will achieve notable cost savings.

This Standard will assist organizations to decide on the appropriate type of audit for their industrial operations, provide a guide when commissioning energy audits and present a uniform basis for preparing and comparing energy audit proposals for industrial and related operations. 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 of industrial and related operations. 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 3598.3, *Energy audits*, Part 3: *Transport 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—Energy management systems Measurement and verification of energy performance of organizations—General principles and guidance*.

Acknowledgment 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 manufacturing site, mine site or water treatment plant. 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, including greenhouse gas (GHG) emissions abatement.

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 appropriate energy audit 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 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.

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 industrial energy audits that identify opportunities for cost effective investments to improve energy performance of industrial facilities (including quarries, mines and upstream petroleum operations). These energy audits encompass all forms of energy used in organizations and are undertaken by appropriately competent personnel either internal or external to the organization.

On an industrial site, an energy audit is an important tool to facilitate an organization to manage its energy performance. It can be part of a site wide energy management system.

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 business needs.

Energy consumed in an industrial process or service site is generally linked to the operation of production services, utility services supporting the production activities, and other ancillary operations. There are differences in processes and utilities used and energy uses for different operations. An industrial site can include one or more production lines, laboratories, research centres, packaging and warehouse sections with specific operational conditions.

Conveying of materials or products within the process and other stationary material handling systems will normally be within the scope of the audit. The use of vehicles within the process may or may not be within the scope of the audit. The audit boundary may include mobile on-site transport equipment and transport or storage external to the site. Organizations are referred to AS/NZS 3598.3 for audits of major on-site vehicle transport operations, such as off-road mine haulage, as well as transport operations using public transport infrastructure.

Requirements for commercial building energy audits are provided in AS/NZS 3598.1, while requirements for transport fleet energy audits are specified in AS/NZS 3598.3.

Where auditing buildings associated with the industrial site, the energy auditor may choose to apply AS/NZS 3598.1. If on-site transport on an industrial site is included in the scope of the energy audit, the energy auditor may choose to apply AS/NZS 3598.3 to this activity.

The energy audit process is presented as a simple chronological sequence, but this does not preclude repeated iterations of certain steps. It applies to industrial and public-sector organizations, but not individual private dwellings.

Energy audits should be undertaken every 3 to 5 years or subsequent to any significant plant, equipment or process upgrades. In most cases, implementing energy audit recommendations will achieve cost savings.

This Standard does not deal with energy audit program/scheme properties such as program administration, training of energy auditors, and energy auditors' tools.