MAURITIAN STANDARD

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Energy efficiency and savings calculation for countries, regions and cities

PREVIEW

ICS: 27.010

Mauritius Standards Bureau
Moka

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National foreword

This Mauritian Standard is identical with the International Standard **ISO 17742:2015(E),** *Energy efficiency and savings calculation for countries, regions and cities.* It was adopted by the Mauritius Standards Bureau on the recommendation of the **Energy Management Standards Committee** and approval of the Standards Council on 8 April 2015. It was notified in the Government Gazette on **2 May 2015. ***

For the purposes of this standard the following change should be made:

- wherever the word '*International standard*' appears, referring to this standard, it should be read as '*Mauritian Standard'*.

*** General Notice No. 771 of 2015**

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 257, *Evaluation of energy savings*.

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Introduction

Due to the recognized role of savings in international climate and energy policy, e.g. expressed by International Energy Agency,[9] there is a need for harmonized methods at the international level. In addition, many countries that have formulated policies and targets have a need for evaluating the energy savings achieved, or the impact of implemented policies, and need these calculation methods as well.

This International Standard concerns savings at the level of countries, regions, and cities. The practical application can be different due to specific restrictions, such as the availability of data at lower levels.

This International Standard is meant to calculate both realized savings (ex-post evaluation) as well as expected savings (ex-ante evaluation). The latter is only possible if detailed data on future energy developments is available.

This International Standard can be used by any stakeholder (decision makers, companies, NGO, etc.) that wants to quantify the energy savings over a specific period.

This International Standard is part of a set of International Standards developed in TC 257 (see Figure 1) and builds on the general principles outlined in ISO 17743, including reporting and system boundaries.

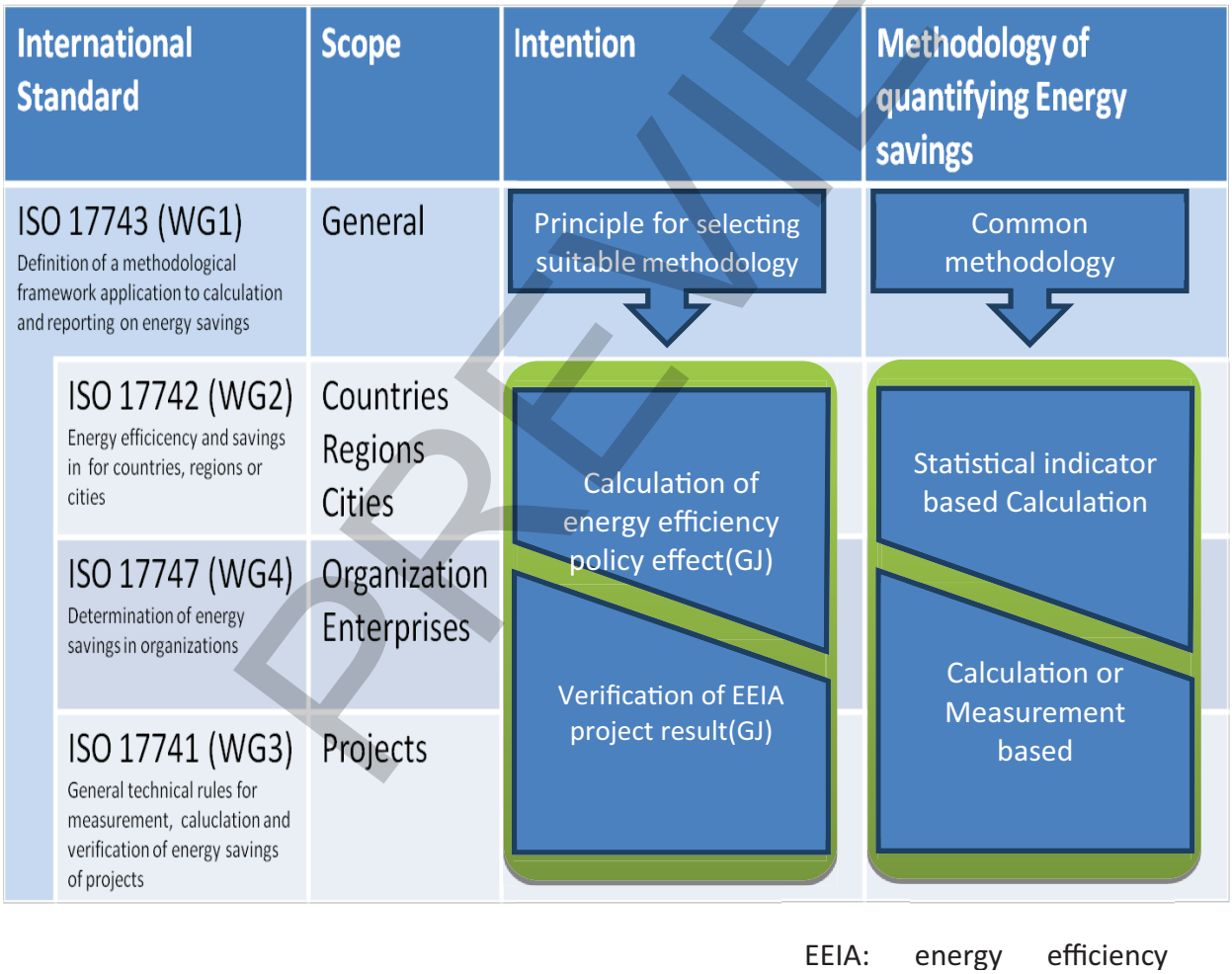

Figure 1 — Work program of ISO 257

This International Standard covers both indicator-based and measure-based calculation methods. The indicator method is based on energy indicators (e.g. mean gas consumption per dwelling) which are

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often calculated from statistical data. The measure-based method considers the saving effect of policy measures or measures taken by other stakeholders to enhance energy efficiency.

The indicator-based and measure-based calculation methods are presented as two separate calculation methods. Using a combination of indicator-based and measure-based methods is not part of this International Standard. However, the differences and application of both methods are highlighted.

This International Standard provides a general framework for calculating energy savings. For the indicator-based methods, examples of specific calculations per indicator are presented separately in Annex A.

When applying this International Standard, the user can choose between different variants of the indicator- or measure-based method. In order to be transparent on the way results have been obtained, the user of this International Standard has to specify the variant used when presenting the results.

In order to ensure the credibility of the results, all savings calculations have to be documented to the point of allowing them to be duplicated or reproduced by an independent analyst. The requirements are specified in detail when this International Standard is elaborated for concrete calculation applications (see also ISO 17743).

After Clause 2 and Clause 3, the energy-saving types to be calculated, and the characteristics of the indicator-based and measure-based methods, are presented in Clause 4. The standard on the indicator-based calculation method is described in Clause 5 and that on the measure-based calculation methods in Clause 6. Annex A provides some example indicators that can be used in indicator-based calculations. Annex B shows the levels of detail at which measure-based methods can be applied.

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Energy efficiency and savings calculation for countries, regions and cities

1 Scope

This International Standard provides a general approach for energy efficiency and energy savings calculations with indicator-based and measure-based methods for the geographical entities countries, regions, and cities.

This International Standard considers all end-use sectors, such as households, industry, tertiary (services, etc.), agriculture, and transport. It does not incorporate calculation of energy efficiency and energy savings in energy supply sectors, such as power plants, refineries, and coal mines.

Energy consumption does not include feedstock energy, such as oil products for the production of plastics.

This International Standard is not intended to be used for calculating energy savings of individual households, organizations, companies, or other end users.

Energy from renewable energy sources "behind-the-meter" (e.g. from solar water heating panels) decreases the amount of supplied energy and can be part of the calculated energy savings. Users of this International Standard should be aware that this energy from renewable energy sources behind-the-meter can also be claimed as part of the total energy from renewable sources.

2 Normative references

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

No normative references, useful International Standards are listed in the Bibliography.

3 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

NOTE The main references are Reference [13] and ISO 17743.

3.1
adjustment factor
quantifiable parameter affecting energy consumption

Note 1 to entry: In this International Standard, adjustment factors for indicator-based methods are restricted to corrections for variations in weather conditions.

Note 2 to entry: In this International Standard, adjustment factors for measure-based methods include production throughput, weather conditions, working hours, behaviour related parameters (e.g. indoor temperature and light level), etc.

Note 3 to entry: Factors at high aggregation level that affect the savings attributed to policies or programs (e.g. free rider effect or rebound effect) are not part of the adjustment factors.

[SOURCE: ISO 17743, modified — with notes instead of examples.]

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