
**Energy services — Guidelines for the
assessment and improvement of the
energy service to users**

*Services énergétiques — Lignes directrices pour l'évaluation et
l'amélioration du service énergétique aux utilisateurs*



This document is a preview generated by EBS



COPYRIGHT PROTECTED DOCUMENT

© ISO 2017, Published in Switzerland

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized otherwise in any form or by any means, electronic or mechanical, including photocopying, or posting on the internet or an intranet, without prior written permission. Permission can be requested from either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Ch. de Blandonnet 8 • CP 401
CH-1214 Vernier, Geneva, Switzerland
Tel. +41 22 749 01 11
Fax +41 22 749 09 47
copyright@iso.org
www.iso.org

Contents

Page

Foreword	v
Introduction	vi
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Components of the energy service relating to users' needs and expectations	10
4.1 General	10
4.2 Access to energy service	11
4.3 Provision of energy service	12
4.3.1 Time to establish new service provisions	12
4.3.2 Maintenance and repairs	12
4.3.3 Price of energy service	13
4.3.4 Quality and quantity of overall energy supply	13
4.3.5 Continuity of energy supply	14
4.3.6 Coverage and availability of energy services	14
4.3.7 Withdrawal or interruption of energy services	14
4.4 Energy efficiency services	14
4.4.1 General	14
4.4.2 Energy efficiency services to the user	15
4.4.3 Energy efficiency services in the market	15
4.5 Clean renewable energy services	15
4.6 Contract management and billing	15
4.6.1 Availability of a clear service agreement	15
4.6.2 Accuracy of billing	16
4.6.3 Clarity of billing	16
4.6.4 Response to billing complaints	16
4.6.5 Methods of payment	17
4.7 Promoting a good relationship with the users	17
4.7.1 General	17
4.7.2 Availability of service information	17
4.7.3 Contacts with users	18
4.7.4 Complaints and requests	19
4.7.5 Consumers in vulnerable circumstances	19
4.7.6 Notification of restrictions and interruptions	19
4.7.7 Community activities	19
4.7.8 Participation of users	20
4.8 Protection of the environment	20
4.8.1 General	20
4.8.2 Sustainable use of natural resources	20
4.8.3 Environmental impact	20
4.9 Safety and emergency management	21
5 Assessment criteria for energy service to users	21
5.1 General	21
5.2 Access to energy service	22
5.3 Provision of energy service	22
5.3.1 Time to establish new service provisions	22
5.3.2 Repairs	22
5.3.3 Price of service	23
5.3.4 Quality and quantity of energy service	23
5.3.5 Continuity of energy supply	23
5.3.6 Coverage and availability of energy service	23
5.4 Energy Efficiency services	24

5.4.1	External conditions pertaining to energy efficiency services.....	24
5.4.2	Information on efficiency provided to the energy services user by the energy service provider.....	24
5.4.3	Incentives for efficiency provided to the energy services user by the energy services provider.....	24
5.5	Clean renewable energy services.....	24
5.5.1	External conditions pertaining to on-site generation and grid.....	24
5.5.2	Energy service provider actions pertaining to on-site generation and grid.....	25
5.6	Contract management and billing.....	25
5.6.1	Availability of a clear service agreement.....	25
5.6.2	Accuracy of billing.....	25
5.6.3	Clarity of billing.....	25
5.6.4	Methods of payment.....	26
5.7	Promoting a good relationship with users.....	26
5.7.1	General.....	26
5.7.2	Contact with users.....	26
5.7.3	Visits to the user.....	26
5.7.4	Response to complaints and requests.....	27
5.7.5	Notification of restrictions and interruptions.....	27
5.7.6	Availability of service information.....	27
5.7.7	Community activities.....	27
5.7.8	Participation of the users.....	27
5.8	Protection of the environment.....	28
5.8.1	Sustainable use of natural resources.....	28
5.8.2	Environmental impact.....	28
5.8.3	Safety and emergency management.....	28
6	Assessment of energy service.....	29
6.1	General.....	29
6.2	Assessment policy.....	29
6.3	Objective and scope of an assessment.....	30
6.4	Parties involved in an assessment.....	30
6.5	Methodology of assessment.....	30
6.6	Service assessment criteria.....	31
6.7	Resources to conduct the assessment.....	31
6.8	Production of output and recommendations for its use.....	31
7	Performance indicators.....	31
7.1	General.....	31
7.2	Performance indicator systems.....	32
7.2.1	General.....	32
7.2.2	Performance indicators.....	32
7.2.3	Variables.....	33
7.2.4	Context information.....	33
7.3	Quality of the information.....	34
7.4	Example of a performance indicator.....	34
8	Performance improvement.....	34
8.1	General.....	34
8.2	Performance measurements and monitoring.....	34
8.3	Testing and exercises.....	35
8.4	Keeping the performance indicator system up to date.....	35
8.5	Performance system audits and assessment.....	36
	Annex A (informative) Further guidance on energy service assessment.....	37
	Bibliography.....	41

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 voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see the following URL: www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 301, *Energy management and energy savings*.

Introduction

0.1 Energy issues: global context and policy framework

Energy services are critically important to sustainable development in light of the following:

- the importance of access to sustainable energy as a basic human need for the world's population as recognized by the United Nations General Assembly in 2011, by the UN Director General and the 2011 UNDP Human Development Report;
- the scale of the population (1,5 billion people without access to electricity) resulting in widespread resort to unsustainable, expensive, polluting and unsafe practices;
- the extent of poor service characterized by interruptions, fluctuations in supply and widespread network deterioration;
- the need for development of a service that is physically, environmentally and financially sustainable;
- global commitments to reduce emissions, noting that providing universal service for the poor population will have only a marginal impact on total emissions beyond existing commitments.

0.2 Energy services: general objectives

This document aims to address the following objectives:

- reducing arbitrary and irregular interruptions of supply;
- increasing information about, and promotion of, sustainable sources of supply;
- reducing aggregate demand, while providing the same or a higher level of energy services;
- improving on previously inadequate information about energy service development and conditions, especially energy efficiency and energy performance;
- improving the balance of contractual rights between provider and user;
- improving payment methods to make it easier for consumers to pay their bills;
- improving consumer responsibility and public participation in energy policy.

There is a broad array of bodies that can play a role in the improvement of energy services. These bodies can be publicly or privately owned. Examples of bodies responsible (in whole or in part) for oversight related to energy services include governments or public agencies (international, national, regional or local) acting with legal authority as legislators and regulators (relevant authorities) or as bodies charged with ensuring service delivery (responsible bodies).

The responsible bodies and relevant authorities are expected to consult with, and take into account, the interests of relevant stakeholders, which can include:

- associations of energy service providers (e.g. international, regional/multinational and national professional associations);
- non-governmental organizations (NGOs) and other autonomous bodies;
- users and associations of energy users;
- manufacturers of energy-using equipment, renewable energy sources and advanced technologies or methods.

Standardization and technical self-regulation are possible ways to ensure stakeholder involvement. It is beneficial if stakeholders are involved in both setting service objectives and assessing the adequacy and efficiency of service.

Energy service providers are expected to meet the requirements of relevant authorities and the expectations specified by responsible bodies, while ensuring the long-term sustainability of the service. In a context of scarcity of resources, including financial resources, it is important that the investments made in installations are appropriate and that necessary attention is paid to proper maintenance and effective use of the installations. It is also important that tariffs generally aim at meeting cost-recovery principles and at promoting efficiency in the use of the resources and sustainability in terms of energy sources, while striving to maintain affordable basic access to energy services.

0.3 Objectives, content and implementation of this document

This document is intended to encourage good practice in the provision of energy service, especially where there is no adequate legislation, or where regulation or common practice falls short. Good practice as set out in this document covers areas such as service contracts, payment methods, price determinations, tariffs and subsidies, equitable supply management and the needs of poor and/or vulnerable consumers. This document outlines the evolution of energy services from simple provision of energy to more sophisticated concepts. These concepts include the provision of energy informational advice and services to guide users to manage costs and to promote efficiency and conservation.

This document is applicable to developed, developing and transitional economies, to complete and incomplete/intermittent networks and to integrated and non-integrated energy supply systems.

This document covers the following areas:

- definitions of scope and terms;
- description of guidelines on how to meet users' service needs and expectations;
- service assessment criteria in accordance with the guidelines;
- examples of performance indicators linked to the assessment criteria, which can be used for assessing service performance.

Because the delivery, ownership and regulation of energy service is organized based on the legal and institutional frameworks specific to each country, this document does not prescribe the respective roles of the different bodies, nor does it define required internal organization for local, regional or national bodies that can be involved in energy services provision. This document is applicable to publicly and privately owned and operated energy service providers alike, and does not favour any particular ownership or operational model.

This document is appropriate for fixed energy distribution networks of greater or lesser extent, as well as for networks or sites where on-site alternatives are appropriate. This document recognizes the need for flexibility in terms of engineering and hardware. This document's recommendations, such as consultation mechanisms, are intended to apply universally.

This document is consistent with management system standards such as ISO 50001, ISO 9001 and ISO 14001, but it is not dependent on the adoption of a management system standard. It is also consistent with the requirements on network services billing in ISO 14452.

The organizations within the scope of this document are energy service providers. However, in order to address users' needs and expectations pertaining to relevant authorities, responsible bodies and operators, this document is written from the perspective of the energy user rather than that of the energy service provider.

In this document, the following verbal forms are used:

- "shall" indicates a requirement;
- "should" indicates a recommendation;
- "may" indicates a permission;
- "can" indicates a possibility or a capacity.

Energy services — Guidelines for the assessment and improvement of the energy service to users

1 Scope

This document addresses the relevant elements of energy service provided by energy suppliers to users. It envisages energy service as including two broad categories:

- energy supply/generation and distribution;
- advice on and improvement to energy efficiency.

This document provides best practice guidelines for energy service providers in order to continually improve their practices and quality of interaction with users.

The following are within the scope of this document:

- definition of a language common to the different stakeholders;
- definition of key components and characteristics of the energy service to users, with respect to their needs and expectations;
- guidelines for satisfying users' needs and expectations;
- assessment criteria for energy service to users;
- introduction to performance indicators;
- examples of performance indicators;
- performance improvement;
- education or training for users to understand the energy service provided by the energy service providers.

The following are outside the scope of this document:

- topics relating to individual energy service, such as energy efficiency service provided to individual users of energy or services provided by energy service companies (ESCOs);
- methods of design and construction of energy production, transmission and distribution systems;
- management structure and methodology of operation and management of activities relating to energy services, including contracting with other energy service providers;
- topics relating to energy services in systems inside buildings.

2 Normative references

There are no normative references in this document.

3 Terms and definitions

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