BS EN 17669:2022

BSI Standards Publication

Energy Performance Contracts — Minimum requirements

Documents
Document Sharing Hub

Full document details: BS EN 17669:2022

National foreword

This British Standard is the UK implementation of EN 17669:2022.

The UK participation in its preparation was entrusted to Technical Committee SEM/1, Energy Management.

A list of organizations represented on this committee can be obtained on request to its committee manager.

Contractual and legal considerations

This publication has been prepared in good faith, however no representation, warranty, assurance or undertaking (express or implied) is or will be made, and no responsibility or liability is or will be accepted by BSI in relation to the adequacy, accuracy, completeness or reasonableness of this publication. All and any such responsibility and liability is expressly disclaimed to the full extent permitted by the law.

This publication is provided as is, and is to be used at the recipient's own risk.

The recipient is advised to consider seeking professional guidance with respect to its use of this publication.

This publication is not intended to constitute a contract. Users are responsible for its correct application.

© The British Standards Institution 2023
Published by BSI Standards Limited 2023

ISBN 978 0 539 25911 7

ICS 27.015; 27.015

Compliance with a British Standard cannot confer immunity from legal obligations.

This British Standard was published under the authority of the Standards Policy and Strategy Committee on 28 February 2023.

Amendments/corrigenda issued since publication

Date	Text affected

Documents
Document Sharing Hub

Full document details: BS EN 17669:2022

EUROPEAN STANDARD **EN 17669**

NORME EUROPÉENNE

EUROPÄISCHE NORM November 2022

ICS 27.015

English version

Energy Performance Contracts - Minimum requirements

Contrat de performance énergétique - Exigences minimales

Energiespar-Contracting - Mindestanforderungen

This European Standard was approved by CEN on 2 October 2022.

CEN and CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CEN and CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN and CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

CEN and CENELEC members are the national standards bodies and national electrotechnical committees of Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and United Kingdom.

CEN-CENELEC Management Centre:
Rue de la Science 23, B-1040 Brussels

© 2022 CEN/CENELEC All rights of exploitation in any form and by any means reserved worldwide for CEN national Members and for CENELEC Members.

Ref. No. EN 17669:2022 E

AVA Documents Document Sharing Hub

Full document details: BS EN 17669:2022

Contents

Page

European foreword 3
Introduction 4
1 Scope 6
2 Normative references 6
3 Terms and definitions 6
4 Scope and boundaries of the EPC 9
5 EPC's energy targets ..... Error! Bookmark not defined.
6 Contractual energy baseline 11
7 Specification and description of the EPIA(s) 12
8 Methodology for the evaluation of the energy efficiency improvement (ex-post) 13
9 Methodology for the evaluation of other improvement measures (ex post) 14
10 Energy service provider obligations 14
11 Beneficiary and energy service provider obligations for EPIAs on assets owned by the beneficiary 15
12 Additional obligations of the energy service provider 16
13 Beneficiary obligations 16
14 Financing mechanisms 16
15 Guaranteed savings 17
16 Reporting for other improvement measures 18
17 Duration 18
18 Payment mechanisms - Invoicing 19
19 Risk assessment, mitigation and allocation 20
20 Insurance 20
21 Exclusions 21
Annex A (informative) Statistical analysis to determine baseline EnPI and EnPIv 22
Annex B (informative) Business plan of an EPC without energy supply in its scope 26
Annex C (informative) Example of Risk allocation matrix 36
Bibliography 37

Documents
Document Sharing Hub

Full document details: BS EN 17669:2022

European foreword

This document (EN 17669:2022) has been prepared by Technical Committee CEN/CLC/JTC 14 “Energy management and energy efficiency in the framework of energy transition”, the secretariat of which is held by UNI.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by May 2023, and conflicting national standards shall be withdrawn at the latest by May 2023.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN shall not be held responsible for identifying any or all such patent rights.

Any feedback and questions on this document should be directed to the users’ national standards body. A complete listing of these bodies can be found on the CEN website.

According to the CEN-CENELEC Internal Regulations, the national standards organisations of the following countries are bound to implement this European Standard: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Republic of North Macedonia, Romania, Serbia, Slovakia, Slovenia, Spain, Sweden, Switzerland, Türkiye and the United Kingdom.

AVA Documents
Document Sharing Hub

Full document details: BS EN 17669:2022

Introduction

Energy efficiency improvement is one of the pillars of the energy transition. It is considered as one of the most cost-effective ways of addressing the growing demand for energy, climate change mitigation, energy security and increased competitiveness.

Directive 2012/27/EU on energy efficiency defines the term "Energy Performance Contracting" as “a contractual arrangement between the beneficiary and the provider of an energy efficiency improvement measure, verified and monitored during the whole term of the contract, where investments (work, supply or service) in that measure are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criterion, such as financial savings”.

NOTE Sometimes in English the term "Energy Performance Contracting" is used with the same meaning of "Energy Performance Contract" although "contracting" can refer to the process of establishing and delivering an energy performance contract.

The new energy efficiency directive (EU) 2018/2002 highlights that reaching an ambitious energy efficiency target requires barriers to be removed to facilitate investment in energy performance improvement actions (EPIAs). One step in that direction is the clarification provided by Eurostat on how to record energy performance contracts for the public sector in national accounts, which offers opportunities to remove uncertainties and facilitate the use of such contracts.

The lack of broadly accepted best practices or guidelines for Energy Performance Contracts (EPCs) demands the development of a standard specifying the minimum requirements of the contractual agreement that matches the needs of:

- policy makers to provide tools for quality, transparency and effectiveness in EPIAs;
- building owners, public or private organizations and energy service providers to adopt a contractual framework for energy services that provides clear and transparent risk allocation and guaranteed energy efficiency improvement and other agreed energy performance criteria;
- financial institutions and banks to have a reference contractual framework between user and energy service provider that clearly specify value generation (including multiple benefits or co-benefits of energy efficiency improvements) and risk allocation;
- property valuators to help assessing the value of the asset in relation to its energy efficiency and sustainability performance for the project lifetime.

This standard addresses the multiple domains of the EPCs: technical, financial, legal and provides a common framework of methods to integrate the minimum requirements of energy efficiency improvement.

Because an EPC usually has an impact on the risk allocation between the energy service provider, the financial institution and the beneficiary of the energy efficiency improvement services, the requirements have implication on the economic evaluation, legal, fiscal and accounting procedures for both public and private organizations.

This document can be used in conjunction with the following:

- management system standards,
- energy management standards,
- risk management standards,
- asset management standards,

Documents
Document Sharing Hub
Full document details: BS EN 17669:2022

- underwriting procedures of financial institutions (European Bank Authority – EBA),
- international accounting standards (International Financial Reporting Standards - IFRS),
- Eurostat statistical treatment of EPC,
- Environmental Social and Governance (ESG) requirements, or
- Action plan for Sustainable Finance.

The production of renewable energy on site does not necessarily achieve energy efficiency improvement. Even if energy consumption across the boundary decreases, there may be no measurable improvement in energy efficiency related to the energy use as a result of the change.

However, renewable energy production may be a component of an EPC and is therefore considered to be in the scope of this document when combined with an EPIA.

Documents
Document Sharing Hub
Full document details: BS EN 17669:2022

1 Scope

This document specifies the minimum requirements for Energy Performance Contracts (EPCs). The energy performance improvement actions (EPIAs) are intended to achieve a guaranteed level of energy efficiency improvement and other agreed energy performance related criteria irrespective of the quantity, use, or types of energy consumed.

This document is applicable to EPIA(s) on existing assets.

The requirements are set in order to provide:

- transparency throughout the whole process of establishing an EPC,
- cost effectiveness in relation to the benefits generated by the EPIA,
- a quality assurance, risk mitigation, and risk allocation toolkit,
- material information necessary for financial and technical calculations for both the beneficiary and the energy service provider.

The document is applicable to energy service providers and beneficiaries regardless of their type, size, complexity, or geographical location.

This document may be used by financial institutions and other stakeholders of the process.

NOTE This document could be used in conjunction with Eurostat or International Accounting Standards Board (IASB) guidance or other standards to comply with taxonomy and non-financial reporting directive or Corporate Sustainability reporting if applicable.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

EN 17463 *Valuation of Energy Related Investments (VALERI)*

3 Terms and definitions

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

3.1
energy consumption
quantity of energy applied

[SOURCE: EN ISO 50001:2018, 3.5.2]

3.2
energy efficiency
ratio or other quantitative relationship between an output of performance, service, goods, commodities, or energy, and an input of energy

EXAMPLE Conversion efficiency, energy required/energy consumed

Note 1 to entry: Both input and output should be clearly specified in terms of quantity and quality and be measurable.

[SOURCE: EN ISO 50001:2018, 3.5.3]

Documents
Document Sharing Hub
Full document details: BS EN 17669:2022

3.3
energy performance
measurable result(s) related to energy efficiency, energy use, and energy consumption

Note 1 to entry: Energy performance can be measured against the organization's objectives, energy targets and other energy performance requirements.

[SOURCE: EN ISO 50001:2018, 3.4.3]

3.4
energy performance contract
EPC
contractual agreement between the provider of EPIA(s) and a beneficiary

Note 1 to entry: The investments necessary for the implementation of the actions are paid for in relation to the contractually agreed level of energy performance improvement and other agreed criteria.

Note 2 to entry: The energy performance improvement is verified and monitored during the whole duration of the contract.

Note 3 to entry: The definition is taken with modification from the definition of Energy Performance Contracting of Directive 2012/27/EU.

Note 4 to entry: Sometimes in English the term "Energy Performance Contracting" is used with the same meaning of "Energy Performance Contract" although "contracting" may refer to the process of establishing and delivering an energy performance contract.

3.5
energy performance contract boundary
physical, geographical, or organizational limit as agreed between the beneficiary and the energy service provider

EXAMPLE Industrial plant, building(s) or their parts (a production line, a group of processes, a boiler, air compressing equipment, lighting system, building envelope, building HVAC system, vehicles of a fleet of vehicles).

3.6
energy performance contract scope
set of facilities and/or activities that the EPC addresses

Note 1 to entry: The scope can include several boundaries.

Documents
Document Sharing Hub
Full document details: BS EN 17669:2022

3.7
energy performance improvement action
EPIA
action or measure or group of actions or measures, implemented or planned, intended to achieve energy performance improvement through technological, managerial, or operational, behavioural, economical, or other changes

[SOURCE: ISO 50015:2014, 3.5, and ISO 50046:2019, 3.11]

EXAMPLE A non-exhaustive list of EPIAs is the following:

- measures in order to reduce the energy consumption;
- replacement, modification or addition of equipment;
- more efficient operation;
- continuous optimization of operation of technical installations;
- improved maintenance;
- deployment of behavioural change programs;
- implementation of an energy management system.

Note 1 to entry: For the purpose of this document the term "energy performance improvement action/measure" is equivalent to "energy efficiency improvement action/measure" since the only kind of performance that can be normalized, as requested by this standard, is the energy efficiency.

3.8
energy performance indicator
EnPI
measure or unit of energy performance, as defined by the organization

Note 1 to entry: EnPI(s) can be expressed by using a simple metric, ratio, or a model, depending on the nature of the activities being measured.

Note 2 to entry: See ISO 50006 for additional information on EnPI(s).

[SOURCE: EN ISO 50001:2018, 3.4.4]

3.9
energy performance indicator value
EnPIv
quantification of the EnPI at a point in or over a specified period of time

[SOURCE: EN ISO 50001:2018, 3.4.5]

3.10
energy service provider
a natural or legal person who delivers energy services or other energy efficiency improvement actions in a final customer's facility or premises

Note 1 to entry: An ESCO (Energy Service Company) is a type of energy service provider.

Documents
Document Sharing Hub
Full document details: BS EN 17669:2022

3.11
energy use
application of energy

EXAMPLE Ventilation; lighting; heating; cooling; transportation; data storage; production process

Note 1 to entry: Energy use is sometimes referred to as 'energy end-use'.

[SOURCE: EN ISO 50001:2018, 3.5.4]

3.12
materiality
quality of being relevant and significant to the parties involved in the EPC

Note 1 to entry: Material information is information which is critical to the decision making process of the parties involved in the EPC and if omitted, misstated or obscured could reasonably be expected to influence the decision of the beneficiary, the energy service provider or a third party.

Note2 to entry: Materiality relates to financial, technical, or other aspects.

EXAMPLE Examples of material information are, as a non exhaustive list, the following:

- EnPI adopted to measure energy efficiency improvement;
- baseline measured EnPI leading to the evaluation of guaranteed energy efficiency improvement, environmental impact reduction and economic saving;
- measured EnPI after the implementation of the EPIA(s);
- adjustment factors to determine energy efficiency improvement;
- investment (capex), operational costs (opex), emerging costs (stranded assets), and measurable benefits that have an economic value.

3.13
service level:
service targets agreed between energy service supplier and beneficiary

EXAMPLE The service level could be: comfort level, operating hours, maintenance frequency, and/or plan, production output, etc.

4 Scope and boundaries of the EPC

The EPC shall:

a) be appropriate and cost effective in relation to the benefits generated by the EPIA;

b) provide a risk mitigation and risk allocation framework both in technical and monetary terms;

c) deliver material information for the due diligence and underwriting procedures of financial institutions to support financeability;

d) provide material information for statistical treatment and financial accounting;

e) specify reporting guidelines for financial, non financial, sustainability disclosure, and property valuators;

Documents
Document Sharing Hub
Full document details: BS EN 17669:2022

f) meet the beneficiary energy performance requirements related to the expected service.

The scope and boundaries of the EPC shall be defined.

The scope of the EPC shall be described in an exhaustive and unequivocal way.

The boundaries within which the EPIAs shall be implemented shall be described including the energy types for each energy use and the detail of each individual action.

The energy efficiency improvement achieved by the implementation of the EPC shall be demonstrated through measurement and verification.

5 Energy targets of the EPC

The EPC shall specify the guaranteed energy targets to be achieved during the contract duration. Energy targets shall be measurable and associated to relevant EnPIs. Each EnPI should be related to a contractually agreed baseline.

Energy targets shall be expressed in the same units as the relevant EnPIs specified in the baseline. The change in an EnPIv can be expressed as an absolute value or as a percentage.

The energy targets shall include the service level to be achieved.

The EPC can also include other objectives such as (non-exhaustive example list):

- environmental: GHG emissions or other emissions reduction objectives;
- reduction in costs;
- improvement in safety measures;
- improvement of earthquake building code implementation.

EPC investments, operational costs, and economic profit for the energy service provider are paid for in relation to a contractually agreed level of energy efficiency improvement or other agreed energy performance criteria or financial savings.

The economic evaluation of an EPC is assessed using a global valuation method and over the long term (for example using EN 17463 Valuation of Energy Related Investments (VALERI)).

NOTE Additional objectives set in the EPC and that do not lead to savings directly connected to energy efficiency savings are generally paid in relation to other criteria specified in the EPC.

An EPC shall include, as a minimum:

a) a description of the EPIA(s);

b) the ex-ante EnPI related to the boundary of the EPIA(s);

c) the relevant variables and static factors and a statement on the need to update them during the contract lifetime;

d) an algorithm that correlates the EnPI(s) with the relevant variables and static factors;

e) the guaranteed energy efficiency improvement in relation to relevant variables and static factors for the whole contract duration;

f) the methodology for measurement and verification and the frequency (at least annually) and content of the reporting to assess the energy efficiency improvement over time;

Documents
Document Sharing Hub
Full document details: BS EN 17669:2022

g) the value of the investment committed for the implementation of the EPIA(s);

h) the responsibilities and payment allocation for the energy supply;

i) the ownership of the EPIA(s) asset(s);

j) the responsibilities and the allocation of costs for operation, maintenance and repairs for the whole contract duration of the EPC;

k) a description of compensations, penalties or remedies (financial, technical or other) where achieved savings fall short of the annual guaranteed energy saving, and one or more clauses dealing with any eventual early termination of the contract;

l) a description of bonuses or other benefits where achieved savings exceed the annual guaranteed energy saving;

m) the definition and beneficiary of any kind and form of applicable incentives (economic, financial, fiscal, etc.);

n) the identification of EPIA's implementation risks and their mitigation and allocation;

o) the contract duration;

p) a clause that allows the parties to manage justified changes in one or more of the previous items, if required.

6 Contractual energy baseline

The contractual energy baseline is a value for a reference period that appropriately represents the range of operating conditions ex-ante implementation of the EPIA(s). This enables changes in energy performance to be accurately represented by comparing EnPIv(s) for the reporting and baseline periods.

The type of information needed to establish an energy baseline is determined by the specific purpose of the EPIA(s), and by the effect of relevant variables on energy performance.

The EPC shall specify an exhaustive, qualitative, and quantitative assessment of the ex-ante energy efficiency performance within the scope of the agreement, indicating:

a. boundaries of the energy system;

b. period and duration of the measurement of the energy consumption. The period, frequency of measurement and number of measurements taken shall be representative and significative to compare energy performance in the reporting period.

   The energy service providers and the beneficiary shall select an adequate data collection frequency (e.g. hourly, daily, weekly) for each energy consumption and relevant variable included in the EnPI and the corresponding contractual energy baseline.

   The data collection period and frequency should be sufficient to capture operating conditions and provide an adequate number of data points for statistical analysis. For statistical analysis it is critical that energy consumption and associated relevant variables have the same time intervals. An example of statistical analysis to determine EnPI and EnPIv is reported in the informative Annex A;

c. measured energy consumption (direct or indirect measurement);

Documents
Document Sharing Hub
Full document details: BS EN 17669:2022