SLOVENSKI STANDARD
SIST EN ISO 15663:2021

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Nadomešča:
SIST EN ISO 15663-1:2007

Petrokemična industrija ter industrija za predelavo nafte in zemeljskega plina - Stroški življenjskega cikla (ISO 15663:2021)

Petroleum, petrochemical and natural gas industries - Life cycle costing (ISO 15663:2021)

Erdöl- und Erdgasindustrie - Betriebsdauerkosten (ISO 15663:2021)

Industries du pétrole et du gaz naturel - Estimation des coûts globaux de production et de traitement (ISO 15663:2021)

Ta slovenski standard je istoveten z: **EN ISO 15663:2021**

ICS:

13.020.60	Življenjski ciklusi izdelkov	Product life-cycles
75.020	Pridobivanje in predelava nafte in zemeljskega plina	Extraction and processing of petroleum and natural gas

SIST EN ISO 15663:2021 **en,fr,de**

EUROPEAN STANDARD

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Petroleum, petrochemical and natural gas industries - Life cycle costing (ISO 15663:2021)

Industries du pétrole et du gaz naturel - Estimation des coûts globaux de production et de traitement (ISO 15663:2021)

Erdöl- und Erdgasindustrie - Betriebsdauerkosten (ISO 15663:2021)

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EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

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

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European foreword

This document (EN ISO 15663:2021) has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries" in collaboration with Technical Committee CEN/TC 12 “Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries” the secretariat of which is held by NEN.

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of an identical text or by endorsement, at the latest by September 2021, and conflicting national standards shall be withdrawn at the latest by September 2021.

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.

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Endorsement notice

The text of ISO 15663:2021 has been approved by CEN as EN ISO 15663:2021 without any modification.

INTERNATIONAL STANDARD

ISO 15663

First edition
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Petroleum, petrochemical and natural gas industries — Life cycle costing

Industries du pétrole et du gaz naturel — Estimation des coûts globaux de production et de traitement

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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).

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

For an explanation of 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 www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, in collaboration with the European Committee for Standardization (CEN) Technical Committee CEN/TC 12, *Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries*, in accordance with the Agreement on technical cooperation between ISO and CEN (Vienna Agreement)

This first edition cancels and replaces ISO 15663-1:2000, ISO 15663-2:2001 and ISO 15663-3:2001, which have been technically revised. The main changes compared to the previous editions are as follows:

— Clause 3: several new terms, definitions, symbols and abbreviations;

— Clause 4: a new clause has been introduced;

— Clause 5 and Clause 6: new clauses describing life cycle costing management and methodology which have been restructured from previous editions;

— Annex A: contains restructured text from ISO 15663-3:2001;

— Annex C: new annex describing life cycle costing techniques which also includes text from ISO 15663-2:2001;

— Annex B, Annex D, Annex E and Annex F are new annexes, but contain also some elements from the previous editions.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Introduction

Cost management within the petroleum, petrochemical and natural gas industries is important and will benefit from the adoption of a common and consistent approach to life cycle costing.

Life cycle costing is the systematic consideration of costs and revenues associated with alternative options required to fulfil the objectives of the business. It is an iterative process of planning, estimating and monitoring costs and revenue differences throughout an asset's life. It is used to support the decision-making process by evaluating alternative options and performing trade-off studies. While the largest benefits are typically achieved in the early life cycle phases, it is equally applicable to all life cycle phases and at many levels of detail.

The petroleum, petrochemical and natural gas industries have historically assessed the financial viability of project options based on minimum capital expenditure and achieving project schedule, whilst operating expenditures and lost revenue have received less focus in the decision-making process. This has ignored potentially large cost factors and has in some cases resulted in selecting non-optimal solutions.

Recognizing this situation, life cycle costing is increasingly being applied by a variety of organizations within the industry. All participants in the process — operators, contractors and vendors — can have a substantial impact on the life cycle cost, and it is not until all are involved that the benefits sought from the use of life cycle costing will be realized.

Petroleum, petrochemical and natural gas industries — Life cycle costing

1 Scope

This document specifies requirements for and gives guidance on the application of life cycle costing to create value for the development activities and operations associated with drilling, exploitation, processing and transport of petroleum, petrochemical and natural gas resources. This document covers facilities and associated activities within different business categories (upstream, midstream, downstream and petrochemical).

The life cycle costing process as described in this document is applicable when making decisions between competing options that are differentiated by cost and/or economic value. This document is not concerned with decision-making related to the economic performance of individual options or options differentiated by factors other than cost or economic value.

Guidance is provided on the management methodology and application of life cycle costing in support of decision-making across life cycle phases. The extent of planning and management depends on the magnitude of the costs involved, the potential value that can be created and the life cycle phase. It also provides the means of identifying cost drivers and provides a cost-control framework for these cost drivers, allowing effective cost control and optimization over the entire life of an asset.

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.

ISO 14224:2016, *Petroleum, petrochemical and natural gas industries — Collection and exchange of reliability and maintenance data for equipment*

ISO 19008:2016, *Standard cost coding system for oil and gas production and processing facilities*

ISO 20815:2018, *Petroleum, petrochemical and natural gas industries — Production assurance and reliability management*

3 Terms, definitions and abbreviated terms

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

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1 Terms and definitions

3.1.1
abatement cost
cost generated for the removal or reduction of an undesirable item

Note 1 to entry: An item can be several types of avoided emissions, e.g. emissions to air and water, but most commonly used for CO_2 emission reductions. See further information in Clause C.7.

Note 2 to entry: Abatement cost can be both CAPEX and OPEX cost elements.

3.1.2
asset
item, thing or entity that has potential or actual value to an organization

Note 1 to entry: Physical assets usually refer to equipment, inventory and properties owned by the organization. Physical assets are the opposite of intangible assets, which are non-physical assets such as leases, brands, digital assets, licenses, intellectual property rights, reputation or agreements.

Note 2 to entry: A grouping of assets referred to as an asset system (see ISO 55000:2014, 3.2.5) could also be considered as an asset.

[SOURCE: ISO 55000:2014, 3.2.1, modified — Note 1 to entry not included.]

3.1.3
best available techniques
BAT
latest stage of development (state of the art) of processes, of facilities or of methods of operation which indicates the practical suitability of a particular measure for limiting discharges, emissions and waste

[SOURCE: OSPAR Convention:1992, Appendix 1]

3.1.4
break-even price
U_{PV}
price which applied flat to the production sold gives N_{PV}=0

Note 1 to entry: The production can be related to material such as oil, equipment or services. See further information in C.6.3.8.

3.1.5
break-even volume
volume where a stream of revenues and cost balance results in N_{PV}=0

Note 1 to entry: The volume can be related to material such as oil, equipment or services that generates income. See further information in C.6.3.7.

3.1.6
capital efficiency index
CEI
I_{CE}
NPV of a project after tax divided by the absolute value of the NPV of cash flow after tax up to a defined end point

Note 1 to entry: The capital efficiency index illustrates value creation relative to capital exposure. See further information in C.6.3.9.

Note 2 to entry: The absolute value of the net present value of cash flow after tax applies until the point where annual cash flow becomes positive [see Formula (C.8)].

3.1.7
capital expenditure
CAPEX
investment used to purchase, install and commission an asset

Note 1 to entry: See further information regarding estimation of CAPEX in Clause C.2.

3.1.8
code of resource
COR
hierarchical structure of SCCS that classifies all project resources according to the type of contract/ resource that is involved in the activity and has an associated set of rates

Note 1 to entry: Specific code of resource structure exist, i.e. SCCS is described in ISO 19008:2016. COR codes can be found at https://standards.iso.org/iso/19008.

[SOURCE: ISO 19008:2016, 2.1]

3.1.9
committed costs
fixed costs that cannot be eliminated or even cut back without having a major effect on profits or on the organization's objectives

3.1.10
constraint
limit imposed externally or internally by the project that rules out the selection of an option if the limit is exceeded

3.1.11
cost breakdown structure
structure related to the methods that an organization employs to record and report costs

Note 1 to entry: Specific cost breakdown structure exists, i.e. SCCS is described in ISO 19008:2016. See https://standards.iso.org/iso/19008.

3.1.12
cost data
cost information associated with a defined cost element

Note 1 to entry: Cost data can be qualitative or quantitative cost information.

3.1.13
cost driver
major cost element which, if changed, will have a major impact on the life cycle cost of an option

3.1.14
cost element
subset at any level of the total cost for a cost breakdown structure

Note 1 to entry: The cost of an object/item, resource, activity or a combination of those.

Note 2 to entry: Specific cost element exists when ISO 19008:2016 is applied, i.e. the term 'cost item' as defined in 3.1.16.

3.1.15
cost issue
cost element which, if changed, will not have a major impact on the life cycle cost of an option

3.1.16
cost item
particular part/level that is coded/classified using the SCCS

[SOURCE: ISO 19008:2016, 2.2]