

Petroleum and natural gas industries — Life cycle costing —

Part 1: Methodology

The European Standard EN ISO 15663-1:2006 has the status of a
British Standard

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National foreword

This British Standard was published by BSI. It is the UK implementation of EN ISO 15663-1:2006. It is identical with ISO 15663-1:2000.

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A list of organizations represented on PSE/17 can be obtained on request to its secretary.

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This British Standard, having been prepared under the direction of the Engineering Sector Committee, was published under the authority of the Standards Committee and comes into effect on 15 April 2001

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1: Methodology (ISO 15663-1:2000)

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Methodik (ISO 15663-1:2000)

This European Standard was approved by CEN on 12 November 2006.

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Foreword

The text of ISO 15663-1:2000 has been prepared by Technical Committee ISO/TC 67 "Materials, equipment and offshore structures for petroleum and natural gas industries" of the International Organization for Standardization (ISO) and has been taken over as EN ISO 15663-1:2006 by Technical Committee CEN/TC 12 "Materials, equipment and offshore structures for petroleum, petrochemical and natural gas industries", the secretariat of which is held by AFNOR.

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of an identical text or by endorsement, at the latest by June 2007, and conflicting national standards shall be withdrawn at the latest by June 2007.

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Endorsement notice

The text of ISO 15663-1:2000 has been approved by CEN as EN ISO 15663-1:2006 without any modifications.

INTERNATIONAL STANDARD

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Petroleum and natural gas industries — Life cycle costing —

Part 1: Methodology

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

Partie 1: Méthodologie



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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.

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Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

Attention is drawn to the possibility that some of the elements of this part of ISO 15663 may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights.

International Standard ISO 15663-1 was prepared by Technical Committee ISO/TC 67, *Materials, equipment and offshore structures for petroleum and natural gas industries*.

ISO 15663 consists of the following parts, under the general title *Petroleum and natural gas industries — Life cycle costing*:

- *Part 1: Methodology*
- *Part 2: Guidance on application of methodology and calculation methods*
- *Part 3: Implementation guidelines*

Introduction

The purpose of this part of ISO 15663 is to provide guidance on the use of life-cycle costing techniques within the petroleum and natural gas industry. The principal objective is to speed the adoption of a common and consistent approach to life-cycle costing within the oil industry. This will happen faster and more effectively if a common approach is agreed internationally.

Life-cycle costing is the systematic consideration of the difference between costs and revenues associated with the acquisition and ownership of alternative options required to fulfil an asset need. It is an iterative process of estimating, planning 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 can be achieved in the early project stages of evaluating major configuration options, it is equally applicable to all stages of the life cycle, and at many levels of detail.

Life-cycle costing is distinct from investment appraisal in that it is not concerned with determining the financial viability of a development. It is concerned only with determining the differences between competing options and establishing which options best meet the owners' business objectives.

In the past, the petroleum and natural gas industry has assessed the financial viability of project options on the basis of minimum capital expenditure: operating expenditures have played little part in the decision-making process. This has ignored a potentially large cost and in many cases has resulted in reduced asset value.

This omission is now recognized by the industry. As the number of new large developments has declined, the emphasis has moved towards the maintenance and update of existing assets; naturally this has focused more attention on operating expenditures. In addition, external pressures, such as a low and static oil price, have further added to the pressures to minimize costs.

Life-cycle costing techniques are used by a number of companies within the industry. However, the development of such techniques has been pursued independently and their application has been patchy, with little participation by the contractors and vendors — contracting for equipment supply is still largely on a basis of minimum capital expenditure. All participants in the process — operators, contractors and vendors — can have a substantial impact on the life-cycle costs of ownership, and it is not until all are involved that the benefits sought from the use of life-cycle costing will be realised. If this is to be achieved, a common, consistent, industry-wide approach is required.

Where the life-cycle costing approach was applied, life-cycle costing methods were developed and valuable experience was gained. However, the approaches were diverse with variable success.

This diversity has caused confusion amongst contractors and vendors. It also has resulted in higher engineering and supply costs. Experience indicated that this could potentially result in low quality information being used to support management decisions, in order to maintain project schedules and avoid delay. Therefore, in a project context, a clear, well defined methodology is needed to define how, when, where and why life-cycle costing needs to be applied.

It has also been recognized that project and asset management staff need a clear and unambiguous definition of the overall economic objectives of a project and how to apply the same business criteria when making major engineering decisions. It is further recognized that long term management commitment to life-cycle costing is crucial for its successful implementation in the project execution of an asset.

The principal benefits associated with the systematic application of life-cycle costing may include any or all of the following.

- **Reduce ownership costs**

Operating costs in other industries such as aircraft, defence and automotive have been significantly reduced in the last decade. When users begin to consider operating expenditures before making decisions, the whole supply industry takes a different approach to quality and service.