PD IEC/TS 62257-6:2015

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# Recommendations for renewable energy and hybrid systems for rural electrification

## Part 6: Acceptance, operation, maintenance and replacement

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## National foreword

This Published Document is the UK implementation of IEC/TS 62257-6:2015. It supersedes DD IEC/TS 62257-6:2005 which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee GEL/82, Photovoltaic Energy Systems.

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

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

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# TECHNICAL SPECIFICATION

## Recommendations for renewable energy and hybrid systems for rural electrification –
## Part 6: Acceptance, operation, maintenance and replacement

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

# RECOMMENDATIONS FOR RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION –

## Part 6: Acceptance, operation, maintenance and replacement

## FOREWORD

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Technical specifications are subject to review within three years of publication to decide whether they can be transformed into International Standards.

IEC 62257-6, which is a technical specification, has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

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This second edition cancels and replaces the first edition issued in 2005. It constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

– redefine the maximum AC voltage from 500 V to 1 000 V as well as the maximum DC voltage from 750 V to 1 500 V; and
– removal of the limitation of the 100 kVA system size. Hence the removal of the word “small” with regard to the title and related references in this document.

This technical specification is to be used in conjunction with the IEC 62257 series.

The text of this technical specification is based on the following documents:

| Enquiry draft | Report on voting |
|---|---|
| 82/951/DTS | 82/1002A/RVC |

Full information on the voting for the approval of this technical specification can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

A list of all parts in the IEC 62257 series, published under the general title *Recommendations for renewable energy and hybrid systems for rural electrification*, can be found on the IEC website.

Future standards in this series will carry the new general title as cited above. Titles of existing standards in this series will be updated at the time of the next edition.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- transformed into an International standard,
- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version of this publication may be issued at a later date.

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# INTRODUCTION

The IEC 62257 series intends to provide to different players involved in rural electrification projects (such as project implementers, project contractors, project supervisors, installers, etc.) documents for the setting up of renewable energy and hybrid systems with AC voltage below 1 000 V and DC voltage below 1 500 V.

These documents are recommendations:

- to choose the right system for the right place;
- to design the system;
- to operate and maintain the system.

These documents are focused only on rural electrification concentrating on, but not specific to, developing countries. They should not be considered as all inclusive to rural electrification. The documents try to promote the use of renewable energies in rural electrification; they do not deal with clean mechanisms developments at this time ($CO_2$ emission, carbon credit, etc.). Further developments in this field could be introduced in future steps.

This consistent set of documents is best considered as a whole with different parts corresponding to items for safety as well as sustainability of systems aiming at the lowest life cycle cost as possible. One of the main objectives is to provide the minimum sufficient requirements, relevant to the field of application, that is: renewable energy and hybrid off-grid systems.

The purpose of this technical specification is to propose a methodology to achieve the best technical and economic conditions for acceptance, operation, maintenance and replacement of equipment and complete system life cycle.

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# RECOMMENDATIONS FOR RENEWABLE ENERGY AND HYBRID SYSTEMS FOR RURAL ELECTRIFICATION –

## Part 6: Acceptance, operation, maintenance and replacement

## 1 Scope

This part of IEC 62257, which is a technical specification, intends to describe the various rules to be applied for acceptance, operation, maintenance and replacement (AOMR) of decentralized rural electrification systems (DRES) which are designed to supply electric power for sites which are not connected to a large interconnected system, or a national grid, in order to meet basic needs.

The majority of these sites are:

- isolated dwellings;
- village houses;
- community services (public lighting, pumping, health centers, places of worship or cultural activities, administrative buildings, etc.);
- economic activities (workshops, micro-industry, etc.).

This technical specification proposes a methodology to achieve the best technical and economic conditions for acceptance, operation, maintenance and replacement of equipment and complete system life cycle.

It does not substitute for technical manuals provided by manufacturers for each equipment. The complexity of the system and application will dictate the level of required AOMR documentation.

## 2 Normative reference

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.

IEC 62257 (all parts), *Recommendations for renewable energy and hybrid systems for rural electrification*

IEC TS 62257-1, *Recommendations for renewable energy and hybrid systems for rural electrification – Part 1: General introduction to IEC 62257 series and rural electrification*

IEC TS 62257-2, *Recommendations for renewable energy and hybrid systems for rural electrification – Part 2: From requirements to a range of electrification systems*

IEC TS 62257-3, *Recommendations for renewable energy and hybrid systems for rural electrification – Part 3: Project development and management*

IEC TS 62257-4, *Recommendations for renewable energy and hybrid systems for rural electrification – Part 4: System selection and design*

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