



Préparer un rapport technique international

Preparing International technical reports

GUIDE



Agence de l'Environnement et de la Maîtrise de l'Énergie
Département Énergies Renouvelables

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Preparing International technical reports

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* *Équivalence des termes en Anglais et Français*

Avant-propos

Ce guide de recommandations destiné à la rédaction et à la présentation des rapports techniques internationaux a été initialement rédigé pour les experts des groupes de travail du programme photovoltaïque de l'Agence internationale de l'énergie par

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Les principes exposés dans ce guide sont aussi applicables à la rédaction des rapports techniques de l'ADEME et c'est pour cette raison que ce document est proposé aux personnels impliqués dans des activités internationales. Bien entendu, les recommandations sont applicables à toute note technique ou rapport écrit dans n'importe quelle langue.

L'anglais, langue courante des rapports internationaux, a été adopté dans ce guide. Il n'est pas paru utile dans un premier temps, de le traduire en français.

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NOTE – Un autre rapport interne intitulé « Écrire les nombres, les grandeurs, les unités et les symboles selon les Normes internationales – *Writing numerical values, quantities, units and symbols according to International Standards* » rappelle les principales règles de l'Organisation internationale de normalisation (ISO) et du Système international d'unités (SI). (Réf. AC19991020, valnuiso.doc).

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Introduction

Technical reports written by experts from various countries participating in the co-operative work of international organizations such as the International Energy Agency (IEA) do not always follow the same guidelines and basic principles to write, and present international reports.

These technical reports are diverse, both in the nature of their content and length, that universally applicable rules are difficult to establish.

It is possible, however, to state principles and offer suggestions that will encourage authors to present a body of technical information in a reasonably smooth and coherent form.

This document is a synthesis of existing guides providing recommendations in preparing, writing and editing international scientific publications and technical standards.

Résumé en français

Les experts des différents pays participant aux travaux de coopération d'organisations internationales comme l'Agence internationale de l'énergie (AIE) n'adoptent pas toujours les mêmes principes - sur le fond et sur la forme - pour écrire et présenter leurs rapports techniques.

Rester suffisamment clair et concis pour être lu et compris par une large audience internationale demande une approche réfléchie et logique.

Afin de faciliter l'échange d'information et la communication internationale, ce guide propose des principes généraux pour la rédaction et la présentation des rapports techniques.

Ce travail est une synthèse de deux sources de recommandations pratiques : la première décrit une méthode pour rédiger des publications scientifiques d'envergure internationale et la seconde propose une manière de préparer et de structurer des textes de normes techniques qui s'adressent à un grand nombre de lecteurs de cultures différentes.

Preparing International technical reports

1 Scope and objective

This document sets out recommendations for drafting technical reports which are intended to have a large International audience. It establishes general principles and guidance. The principles are intended to ensure that such technical reports are written and presented in as clean and concise a manner as practicable.

2 General principles

International technical reports, usually written in English, are read by many readers to whom English is a foreign language. To facilitate understanding by all readers, the style shall be as simple and concise as possible. As complex sentence structure and regional idiomatic usages tend to obscure the meaning, the use of "International English" will make them more readily understandable.

To achieve this, the technical report will

- be as complete as necessary to comply with its scope;
- be consistent, clear and accurate;
- take full account of the state of the art;
- provide a framework for the future technological development;
- be comprehensible to qualified persons who have not participated in its preparation.

2.1 References

This document is adapted from two types of recommendations.

The joint work of the International Organization for Standardization and the International Electrotechnical Commission

- ISO/IEC Directives – Part 3, *Rules for the structure and drafting of International Standards* (Third edition, 1997),

and the work of the American Institute of Physics:

- AIP: *Style manual for guidance in writing, editing and preparing physics manuscripts for publication* (Fourth Edition: 1990).

The following reference dictionaries are suggested:

- for English, *the Shorter Oxford English Dictionary* and *The Concise Oxford Dictionary*;
- for French, *Dictionnaires Robert, Larousse* and *Dictionnaire des difficultés de la langue française* (V. Thomas).

2.2 General writing principles

Adequate preparation can help ensure a logical, readable product and shorten the writing time. Writers will ask themselves at least four questions:

- what information is to be presented in the technical report?
- for what specific group of readers is the report written?
- what background information are these readers assumed to have?
- what is the most logical sequence in which the information should be presented to the readers?

2.3 General recommendations for writing

When drafting technical reports, the following recommendations should be applied:

- be clear: consider the efficiency of the simple declarative sentence as a medium for communicating technical information. Avoid long, meandering sentences in which the meaning may be obscured by complicated or unclear construction;
- be concise: avoid vague and inexact usage. Be as quantitative as the subject matter permits. Make use of tables and diagrams. Avoid idle words; make every word count;
- be complete: do not assume that the readers have all the background information on the subject matter. Make sure arguments are complete, logical, and continuous. Use commonly understood

terms instead of local or highly specialised jargon. Define all non-standard symbols and abbreviations when they are introduced. On the other hand, omit information unnecessary for a complete understanding of the message;

- be constantly in the place of the reader. Be rigorously self-critical as first drafts are reviewed, and ask the following question "Is there any way in which this passage could be misunderstood by someone reading it for the first time?".

3 Framework, structure and contents

3.1 General arrangement

The first elements identify the technical report, introduce the content, explain the background, development and relationship with other technical reports. They include:

- title page;
- title of report;
- contents;
- foreword;
- introduction.

The second type of elements form the body of the technical report. They include all the different sections beginning with scope and objective, followed if required by definitions/symbols/abbreviations and references sections, and ending with a conclusion and/or a recommendation section.

Supplementary elements that provide additional information intended to assist the understanding or use of the technical report include short summary and/or extended summary and informative annexes.

NOTE – Manuscripts should be typed on good quality white paper, 210 mm × 297 mm (ISO A4) in size.

3.2 Title Page

The title page is prepared according to the recommendations of the organization or group publishing the technical report. The reference number is allocated by the organization as appropriate.

3.3 Title of report

The wording of the title of report should be established with the greatest care; while being as concise as possible, it should indicate, without ambiguity, the subject-matter of the technical report in such a way as to distinguish it from that of other reports, without going into unnecessary detail. Any necessary additional particulars should be given in the introduction and/or the scope and objective section.

The title must achieve a compromise between succinct brevity and overly complete description. Avoid non-standard abbreviations and acronyms.

Uniformity should be maintained in the terminology used in the titles of technical reports for indicating the same concept.

In the title no indication is needed to describe the nature of the document as an International report. The words "international" and "technical report" should therefore not be used in the title.

3.4 Contents

The contents is an optional element, but is necessary if it enables an overall view of the technical report to be obtained and facilitates its consultation.

The contents should normally list only the sections and annexes. All the elements listed shall be cited with their full titles. Lists of figures and tables with their full title are optional.

NOTE - Titles of divisions and subdivisions might determine if hurried readers need to read the entire report: therefore it is recommended to make them informative and logical.

3.5 Foreword

The foreword element should appear in every report; it consists of a general part giving information relating to the organization responsible and to International report in general, and a specific part giving as many of the following as are appropriate:

- an indication of the committee or working group which prepared the report and information regarding the approval of the report;
- an indication of author's names and affiliation;

- an indication of any other national or international organization that has contributed to the preparation of the report.

3.6 Introduction

The introduction is a preliminary element used, if required, to set the background and to give specific information or commentary about the technical content of the report and about the reasons prompting its preparation.

Specific information should include:

- a statement that the report cancels and replaces other documents in whole or in part;
- a statement of significant technical changes from the previous edition of the report;
- the relationship of the report to other reports or other documents.

The introduction can be followed by an acknowledgement element if required.

3.7 Scope and objective

The scope and objective element (often called Introduction in scientific papers) should appear at the beginning of the technical report, to define without ambiguity the precise subject, the scope of coverage and the objective of the report.

For best results, be sure to:

- make the precise subject of the report clear, inform the reader what the report is about;
- indicate the scope of coverage of the subject (state the limits within which the subject is treated, the range of parameters dealt with and any restrictions made upon the general subject covered);
- state clearly the objective of the report, how it is distinguished from other reports on the same general subject (added value!). Indicate the point of view and emphasis of the report and what is intended to be accomplished by it.

3.8 Definitions, symbols and abbreviations

This is an optional element giving definitions, symbols, abbreviations and perhaps units necessary for the understanding of certain terms used in the report.

3.9 Conclusion and recommendations

The final element should be the conclusion which summarises the main points and findings.

Typical function of the conclusion include:

- summing up (likely to be the major function of the final section of a purely informational technical report);
- a statement of conclusions (convictions based on evidence. They follow logically from data presented in the report, and they agree with what was promised in the introduction and/or scope and objective section);
- a statement of recommendations (as with the conclusions, recommendations should not disagree with what the reader is led to expect in the introduction and/or scope and objective section).

Some technical reports do not need a separate concluding section, particularly if the conclusions have been stated in the first clause.

3.10 Short and/or extended summary

A short summary (5 lines to 10 lines) is an optional preliminary element used to give an overview of the content of the report and to help prospective readers decide whether to read the whole technical report.

The extended summary (also called executive summary) is an optional preliminary element. It might be published, detached from the report. Therefore it must be complete and intelligible in itself; it should not be necessary to read the report in order to understand the extended summary. Note that the summary is not to be considered as part of the introduction and/or the scope section and also note that the text of report should not be written with the assumption that the summary has been read.

A translation of the summary into another language of the author's choice might be provided, and three to five keywords might be given.

3.11 Annexes

Annexes give additional information, and are placed after the report elements.

4 Divisions and subdivisions

Splitting-up reports into divisions and subdivisions is necessary to ensure that they are logically structured and therefore easy to understand. Taking into account that many readers will scan the titles of divisions and subdivisions to determine if they need to read the entire report it is recommended that they are informative and logical.

4.1 Names and description of divisions and subdivisions

The terms which shall be used to designate the divisions and subdivisions that a report may have are shown in table 1.

Table 1 – Names of divisions and subdivisions

Term (<i>French term</i>)	Example of numbering
part (<i>partie</i>)	526-1
clause or section ¹⁾ (<i>article, section</i>)	1
subclause (<i>paragraphe</i>)	1.1
subclause (<i>paragraphe</i>)	1.1.1
paragraph (<i>alinéa</i>)	[no number]
annex (<i>annexe</i>)	A
1) see 4.1.2	

4.1.3 Clause

A clause is the basic component in the subdivision of the text of a report numbered with arabic numerals, beginning with 1. The numbering shall be continuous up to but excluding any annexes.

4.1.4 Subclause

A subclause is a numbered subdivision of a clause. A primary subclause may be further subdivided into numbered secondary subclauses, and this process of further subdivision may be continued as far as is necessary. Excessive splitting-up this way should, however, be avoided. Subclauses shall be numbered with arabic numerals (1.1, 1.2, 1.3, etc.) and should preferably be given a title.

4.1.5 Paragraph

A paragraph is an unnumbered subdivision of a clause or subclause.

4.1.6 Annex

Annexes will be designated by the capital letters of the Latin alphabet, beginning with A. The word "Annex" will be followed by the letter designating its serial order and by the

4.1.1 Part

A part is one of a series of documents published separately under the same technical report number.

The number of a part shall be indicated by an arabic numeral following the technical report number and preceded by a hyphen; for example, 99-1, 99-2, etc.

4.1.2 Section

For practical reasons it may be desirable to subdivide a lengthy report into sections. In such case, the sections shall be numbered with arabic numerals, beginning with 1. The numbers of the clauses within a section shall include, as their first numeral, the number of the section.

title on a separate line. Numbers given to the clauses, subclauses, tables, figures and equations of an annex shall be preceded by the letter assigned to that annex (A1, A1.1, Table A.1, etc.). The numbering shall start afresh with each annex. A single annex shall be designated "Annex A" (the word annex is preferred to appendix).

4.2 Layout of divisions and subdivisions

In draft of reports at all stage of preparation, the numbers and the text of divisions and subdivisions shall be aligned on the left hand margin of the page.

NOTE — At all stage of report preparation double spaced, single column, with ample margins on one side of paper and lines numbered might help editorial comments of participating experts. For review purposes a font such as "Arial" 11 or 12 is a good choice for ensuring clarity and easy reading.

5 Editorial details

5.1 Text of report

5.1.1 Spelling and abbreviations of names of organizations

The spelling of the names of organizations, and their abbreviations, shall be as used by those organizations, in English or French.

5.1.2 Standardised terminology

The following references will be used:

- IEC 50: *International Electrotechnical Vocabulary (all parts)*
- IEC Multilingual dictionary of Electricity, Electronics and Telecommunications
- IEC 61836: 1997. *Glossary of terms and symbols used in solar photovoltaic energy systems.*

5.1.3 Lists

Lists may be introduced either by a complete grammatical proposition followed by a colon, or by the first part of a proposition completed by the items on the list.

Each item in a list will be preceded by a dash or, if necessary for identification, by a lower-case letter followed by a parenthesis: a) ..., b) ..., c) ..., etc. If it is necessary to subdivide further an item in such a list, arabic numerals followed by one parenthesis can be used: 1) ..., 2) ..., 3) ..., etc.

5.2 Tables

Tables should be used wherever appropriate to present information in an easily comprehensible form. Tables shall be numbered with arabic numerals, beginning with 1. This numbering shall be independent of the numbering of the sections or clauses and of any figures. Each table will be referred to explicitly in the text

The table title will be placed above the table and laid out as in the following example (Table 2):

Table 2 – Mechanical characteristics of PV modules

PV module type	Weight kg	Size cm × cm	Thickness mm

The first word in the heading of each column shall begin with a capital letter. The units used in a given column will be indicated at the bottom of the column heading.

When a table is continued over two or more pages, repeat the number of the table, followed by the appropriate word as in the following examples:

- "Table 1 (continued)" on intermediate pages;
- "Table 1 (concluded)" on the final page.

The column headings shall be repeated on pages after the first.

5.3 Figures and photographs

Figures and photographs should be used wherever appropriate to point information in an easily comprehensible form. Figures and

photographs will be numbered with arabic numerals, beginning with 1. This numbering will be independent of the numbering of the clauses and of any tables. Each figure will be referred to explicitly in the text.

The figure title will be placed below the figure.

The units in which any values are expressed must be indicated.

5.4 References

5.4.1 The relevant rules for bibliographical references set out in ISO 690: 1987 will be followed.

5.4.2 References to elements of text will have, for example, the following forms:

- "in accordance with clause 3", "according to 3.1", "see annex B";
- "details as given in 3.1.1": it is unnecessary to use the term "subclause".

5.4.3 References to tables and figures will be referred to in the text, using, for example, the following forms:

- "given in Table 2", "(see Table 2)";
- "shown in Figure 3", "(see Figure 3)".

5.5 Abbreviations

Abbreviations shall be used with care, and their use shall be limited to those cases where it cannot give rise to confusion.

If a list of abbreviations is not given in the report, then the first time that an abbreviation

is used, the full term shall be given with the abbreviation following in parentheses.

The general rule is that abbreviations consisting of the initial letters of words be printed in lower-case letters (for example, "a.c." for "alternating current") and a full stop be placed after each letter. When a sentence begins with an abbreviation consisting of several letters, all the letters of the abbreviation shall be in capital letters.

5.6 Representation of numerical values

The relevant rules for writing numerical values, quantities, units and symbols are set out in ISO 31, ISO 1000 and IEC 27. Main principles are described in another internal report: *Writing numerical values, quantities, units and symbols*. Other elements such as the representation of time, date, country names and currencies are also considered in the report. □

Alphabetical index

Terms are referred to division and subdivision numbers. The equivalent term in French is proposed.

English	French	(Sub)Division
Abbreviation(s)	Abréviation(s)	3.8, 5.5
Annex(es)	Annexe(s)	3.1, 3.11
Arrangement	Plan	3.1
Bibliographical references	Références bibliographiques	5.4.1
Clause(s)	Article(s)	4.1, 4.1.3
Conclusion	Conclusion	3.1, 3.9
Contents	Sommaire	3.1, 3.4
Continuation of tables	Fractionnement des tableaux	5.2.5
Definition(s)	Définition(s)	3.9
Dictionaries	Dictionnaires	2.1
Divisions of a report	Divisions d'un rapport	4
Figure(s)	Figure(s)	3.13, 5.3
Foreword	Avant-propos	3.1, 3.5
Framework of a report	Plan type de rapport	3
Heading	En-tête	5.2
International Systems of Units (SI)	Système international d'unités (SI)	5.6
Introduction	Introduction	3.1, 3.6
Layout	Disposition, Présentation	4.2
of figure title	d'un titre de figure	5.3
of table title	d'un titre de tableau	5.2
List(s)	Enumération(s)	5.1.3
Numbering of	Numérotage des	
annexes	annexes	4.1.6
clauses	articles	4.1.3
divisions and subdivisions	divisions et subdivisions	4.1
figures	figures	5.3
notes to tables and figures	notes des tableaux et des figures	3.13
parts	parties	4.1.1
sections	sections	4.1.2
subclauses	paragraphe(s)	4.1.4
tables	tableaux	5.2
Numerical value	Valeur numérique (nombre)	5.6
Paragraph(s)	Alinéa(s)	4.1, 4.1.5
Part(s)	Partie	4.1, 4.1.1
Quantities, units and symbols	Grandeurs, unités et symboles	5.6
Recommendations	Recommandations	3.1, 3.10
Reference to tables and figures	Renvoi aux tableaux et aux figures	5.4.3
Scope and objective	Objectif et domaine couvert	3.7
Section	Section	4.1.2
SI units	Unités du Système international (SI)	5.6
Spelling	Orthographe	2.1
Subclause(s)	Paragraphe(s)	4.1, 4.1.4
Subdivision(s)	Subdivision(s)	4
Summary	Résumé	3.1, 3.10
Tables	Tableaux	5.2
Title of report	Titre d'un rapport	3.1, 3.3
Title page	Page de titre	3.2