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Electrical energy storage (EES) systems -
Part 3-1: Planning and performance assessment of electrical energy storage systems - General specification

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Electrical energy storage (EES) systems - Part 3-1: Planning and performance assessment of electrical energy storage systems - General specification

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IEC 62933-3-1 has been prepared by IEC technical committee TC 120: Electrical Energy Storage (EES) systems. It is an International Standard.

This first edition cancels and replaces the first edition of IEC TS 62933-3-1 published in 2018. This edition constitutes a technical revision.

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

a) improvements regarding design and sizing of an EES system;
b) adding "EES system decommissioning";
c) adding "Inspection and test aspects";
d) adding "Feasibility and permission";

e) adding "Basic planned activities for feasibility study";

f) adding "Aspects considered with regard to EES system decommissioning".

The text of this International Standard is based on the following documents:

Draft	Report on voting
120/426/FDIS	120/442/RVD

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at www.iec.ch/members_experts/refdocs. The main document types developed by IEC are described in greater detail at www.iec.ch/publications.

A list of all parts in the IEC 62933 series, published under the general title *Electrical energy storage (EES) systems*, can be found on the IEC website.

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

– reconfirmed,

– withdrawn, or

– revised.

INTRODUCTION

IEC 62933-2-1 should be used as a reference when selecting testing items and their corresponding evaluation methods as well as principal parameters. The principal terms used in this document are defined in IEC 62933-1. Environmental issues are covered by IEC TS 62933-4-1. The personnel safety issues are covered by IEC 62933-5-1.

1 Scope

This part of IEC 62933 is applicable to EES systems designed for grid-connected indoor or outdoor installation and operation. This document considers:

– necessary functions and capabilities of EES systems;
– sizing and design of EES system;
– operation of EES system;
– test items and performance assessment methods for EES systems;
– requirements for monitoring and acquisition of EES system operating parameters;
– exchange of system information and control capabilities required;
– maintenance of EES system.

Stakeholders of this document comprise personnel involved with EES systems, which include:

– planners of electric power systems and EES systems;
– owners of EES systems;
– operators of electric power systems and EES systems;
– constructors;
– suppliers of EES systems and its equipment;
– aggregators.

Use-case-specific technical documentation, including planning and installation specific tasks such as system design, monitoring, measurement, tests, operation and maintenance, are very important and can be found throughout this document.

NOTE This document has been written for AC grids, however parts can also apply to DC grids.

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.

IEC 60721-1, *Classification of environmental conditions - Part 1: Environmental parameters and their severities*

IEC 61850 (all parts), *Communication networks and systems for power utility automation*

IEC 62351 (all parts), *Power systems management and associated information exchange - Data and communications security*

IEC 62443 (all parts), *Industrial communication networks - Network and system security*

IEC 62933-1:2024, *Electrical energy storage (EES) systems - Part 1: Vocabulary*

IEC 62933-2-1:2017, *Electrical energy storage (EES) systems - Part 2-1: Unit parameters and testing methods - General specification*

IEC 62933-5-1, *Electrical energy storage (EES) systems - Part 5-1: Safety considerations for grid-integrated EES systems - General specification*

ISO/IEC 27000, *Information technology - Security techniques - Information security management systems - Overview and vocabulary*