IEC TR 62933-2-200

Edition 1.0 2021-09

TECHNICAL REPORT

colour inside

Electrical energy storage (EES) systems – Part 2-200: Unit parameters and testing methods – Case study of electrical energy storage (EES) systems located in EV charging station with PV

IEC TR 62933-2-200:2021-09(en)

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ICS 13.020.30; 27.160; 43.120

ISBN 978-2-8322-1021-0

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICAL ENERGY STORAGE (EES) SYSTEMS –

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FOREWORD

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IEC 62933-2-200 has been prepared by IEC technical committee TC 120: Electrical Energy Storage (EES) Systems. It is a Technical Report.

The text of this Technical Report is based on the following documents:

Draft	Report on voting
120/231/DTR	120/238/RVDTR

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 Technical Report 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/standardsdev/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- withdrawn,
- replaced by a revised edition, or
- amended.

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ELECTRICAL ENERGY STORAGE (EES) SYSTEMS –

Part 2-200: Unit parameters and testing methods – Case study of electrical energy storage (EES) systems located in EV charging station with PV

1 Scope

This part of IEC 62933, which is a Technical Report, presents a case study of electrical energy storage (EES) systems located in electric vehicle (EV) charging stations with photovoltaic (PV) power generation (PV-EES-EV charging stations) with a voltage level of 20 kV and below. EES systems are highlighted in this document because they are a desired option to make the charging stations (especially the high-power fast charging stations) grid-friendly, improve the self-consumption of clean energy generation, and increase the revenue of stations. In this application, EES systems show excellent performance by running in a variety of available operating modes, such as peak shaving, power smoothing, load tracing, time-of-use (TOU) price arbitrage, and ancillary services. The general duty cycle is recommended based on the summary of the operation characteristics of the EES systems.

This document includes the following elements:

– overview of general PV-EES-EV charging stations;

– operational analysis of EES systems in typical project cases;

– summary and recommendation of EES systems' operation modes.

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

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62933-1 apply.

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

- IEC Electropedia: available at http://www.electropedia.org/
- ISO Online browsing platform: available at http://www.iso.org/obp

3.2 Abbreviated terms

AC Alternating current

BAMS Battery array management system

BCMU Battery cluster measurement unit

BMU Battery measurement unit