



BSI Standards Publication

Electrical energy storage (EES) systems

Part 3-2: Planning and performance assessment of electrical energy storage systems — Additional requirements for power intensive and renewable energy sources integration related applications

National foreword

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**Electrical energy storage (EES) systems –
Part 3-2: Planning and performance assessment of electrical energy storage
systems – Additional requirements for power intensive and renewable energy
sources integration related applications**

INTERNATIONAL
ELECTROTECHNICAL
COMMISSION

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

ELECTRICAL ENERGY STORAGE (EES) SYSTEMS –**Part 3-2: Planning and performance assessment of electrical energy storage systems – Additional requirements for power intensive and renewable energy sources integration related applications**

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The language used for the development of this Technical Specification 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.

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INTRODUCTION

This part of IEC 62933 should be used as a reference when planning, designing, controlling and operating power intensive and renewable energy sources integration related applications of EES systems.

ELECTRICAL ENERGY STORAGE (EES) SYSTEMS –

Part 3-2: Planning and performance assessment of electrical energy storage systems – Additional requirements for power intensive and renewable energy sources integration related applications

1 Scope

This part of IEC 62933 provides the requirements for power intensive and renewable energy sources integration related applications of EES systems, including grid integration, performance indicators, sizing and planning, operation and control, monitoring and maintenance. The power intensive applications of EES systems are usually used to improve the dynamic performance of the grid by discharging or charging based on corresponding control strategies. The renewable energy sources integration related applications of EES systems are usually used to mitigate short-term fluctuation and/or to keep long-term stability. This document includes the following applications of EES systems:

- frequency regulation/support;
- grid voltage support ($Q(U)$) (“volt/var support”);
- voltage sag mitigation;
- renewable energy sources integration related applications;
- power oscillation damping (POD).

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 TS 62786, *Distributed energy resources connection with the grid*

IEC TS 62933-1:2018, *Electrical energy storage (EES) systems – Part 1: Vocabulary*

IEC TS 62933-3-1, *Electrical energy storage (EES) systems – Part 3-1: Planning and performance assessment of electrical energy storage systems – General specification*

IEC TS 62933-3-3, *Electrical energy storage (EES) systems – Part 3-3: Planning and performance assessment of electrical energy storage systems – Additional requirements for energy intensive and backup power applications*

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

IEC TS 62933-5-2, *Electrical energy storage (EES) systems – Part 5-2: Safety requirements for grid-integrated EES systems – Electrochemical-based systems*