Electric energy storage (EES) systems - Part 4-2: Guidance on environmental issues - Assessment of the environmental impact of battery failure in an electrochemical based storage system

EESTI STANDARDIMIS- JA AKREDITEERIMISKESKUS
ESTONIAN CENTRE FOR STANDARDISATION AND ACCREDITATION

EESTI STANDARDI EESSÕNA

NATIONAL FOREWORD

See Eesti standard EVS-EN IEC 62933-4-2:2025 sisaldab Euroopa standardi EN IEC 62933-4-2:2025 ingliskeelset teksti.	This Estonian standard EVS-EN IEC 62933-4-2:2025 consists of the English text of the European standard EN IEC 62933-4-2:2025.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas.	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation and Accreditation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 18.04.2025.	Date of Availability of the European standard is 18.04.2025.
Standard on kättesaadav Eesti Standardimis-ja Akrediteerimiskeskusest.	The standard is available from the Estonian Centre for Standardisation and Accreditation.

Tagasisidet standardi sisu kohta on võimalik edastada, kasutades EVS-i veebilehel asuvat tagasiside vormi või saates e-kirja meiliaadressile standardiosakond@evs.ee.

ICS 13.020.30, 27.010

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 62933-4-2

April 2025

ICS 13.020.30; 27.010

English Version

Electric energy storage (EES) systems - Part 4-2: Guidance on environmental issues - Assessment of the environmental impact of battery failure in an electrochemical based storage system (IEC 62933-4-2:2025)

Systèmes de stockage de l'énergie électrique (EES) - Partie 4-2: Recommandations relatives aux problèmes environnementaux - Évaluation de l'impact environnemental d'une défaillance de batterie dans un système de stockage d'énergie électrochimique
(IEC 62933-4-2:2025)

Elektrische Energiespeichersysteme (EES) - Bewertung der Umweltauswirkungen eines Batterieausfalls in einem elektrochemischen Speichersystem
(IEC 62933-4-2:2025)

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European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Rue de la Science 23, B-1040 Brussels

European foreword

The text of document 120/387/FDIS, future edition 1 of IEC 62933-4-2, prepared by TC 120 "Electrical Energy Storage (EES) systems" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 62933-4-2:2025.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2026-04-30
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In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 60896-21:2004	NOTE	Approved as EN 60896-21:2004 (not modified)
IEC 60896-22:2004	NOTE	Approved as EN 60896-22:2004 (not modified)
IEC 61427-1:2013	NOTE	Approved as EN 61427-1:2013 (not modified)
IEC 61427-2:2015	NOTE	Approved as EN 61427-2:2015 (not modified)
IEC 62485-2:2010	NOTE	Approved as EN IEC 62485-2:2018 (not modified)
IEC 62485-3:2014	NOTE	Approved as EN 62485-3:2014 (not modified)
IEC 62485-5:2020	NOTE	Approved as EN IEC 62485-5:2021 (not modified)
IEC 62619:2022	NOTE	Approved as EN IEC 62619:2022 (not modified)
IEC 62620:2014	NOTE	Approved as EN 62620:2015 (not modified)
IEC 62675:2014	NOTE	Approved as EN 62675:2014 (not modified)
IEC 62932-1:2020	NOTE	Approved as EN IEC 62932-1:2020 (not modified)
IEC 62932-2-1:2020	NOTE	Approved as EN IEC 62932-2-1:2020 (not modified)
IEC 62933 series	NOTE	Approved as EN IEC 62933 series
IEC 62933-1:2024	NOTE	Approved as EN IEC 62933-1:2024 (not modified)
IEC 62933-5-2:2020	NOTE	Approved as EN IEC 62933-5-2:2020 (not modified)

IEC 62984-1:2020	NOTE	Approved as EN IEC 62984-1:2020 (not modified)
IEC 62984-2:2020	NOTE	Approved as EN IEC 62984-2:2020 (not modified)
IEC 62984-3:2020	NOTE	Approved as EN IEC 62984-3:2020 (not modified)
IEC 63056:2020	NOTE	Approved as EN IEC 63056:2020 (not modified)
IEC 63115-1:2020	NOTE	Approved as EN IEC 63115-1:2020 (not modified)
IEC 63115-2:2021	NOTE	Approved as EN IEC 63115-2:2021 (not modified)

IEC 62933-4-2

Edition 1.0 2025-02

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Electric energy storage (EES) systems – Part 4-2: Guidance on environmental issues – Assessment of the environmental impact of battery failure in an electrochemical based storage system

Systèmes de stockage de l'énergie électrique (EES) – Partie 4-2: Recommandations relatives aux problèmes environnementaux – Évaluation de l'impact environnemental d'une défaillance de batterie dans un système de stockage d'énergie électrochimique

IEC 62933-4-2:2025-02(en-fr)

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IEC 62933-4-2

Edition 1.0 2025-02

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

COMMISSION ELECTROTECHNIQUE INTERNATIONALE

ICS 13.020.30, 27.010

ISBN 978-2-8327-0147-8

CONTENTS

INTERNATIONAL ELECTROTECHNICAL COMMISSION

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ELECTRICAL ENERGY STORAGE (EES) SYSTEMS –

Part 4-2: Guidance on environmental issues – Assessment of the environmental impact of battery failure in an electrochemical based storage system

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IEC 62933-4-2 has been prepared by IEC technical committee 120: Electrical Energy Storage (EES) Systems. It is an International Standard.

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

Draft	Report on voting
120/387/FDIS	120/403/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.

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.

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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ELECTRICAL ENERGY STORAGE (EES) SYSTEMS –

Part 4-2: Guidance on environmental issues – Assessment of the environmental impact of battery failure in an electrochemical based storage system

1 Scope

This part of IEC 62933 defines the requirements for evaluating and reporting the negative impact on the environment caused by the failure of a cell, flow cell, battery or flow battery in the accumulation subsystem of a battery energy storage system (BESS).

The batteries within this scope used in a BESS are classified according to the type of their electrolyte. These electrolyte types are aqueous, non-aqueous or solid.

The environmental impacts directly caused by the failure of other components of the BESS are not within the scope of this document.

2 Normative references

There are no normative references in this document.

3 Terms, definitions and abbreviated terms

3.1 Terms and definitions

For the purposes of this document, the following terms and definitions apply.

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

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

3.1.1
cell
basic functional unit, consisting of an assembly of electrodes, electrolyte, container, terminals and usually separators, that is a source of electric energy obtained by direct conversion of chemical energy

[SOURCE: IEC 60050-482:2004, 482-01-01, modified – the Note has been deleted.]

3.1.2
flow cell
secondary cell characterized by the spatial separation of the electrodes and the movement of the energy storage fluids

[SOURCE: IEC 62932-1:2020, 3.1.14, modified – the Note has been deleted.]