SLOVENSKI STANDARD
SIST EN IEC 63369-1:2026

01-september-2026

Izračun ogljičnega odtisa za industrijske litij-ionske baterije - 1.del: Splošne zahteve in metodologija

Carbon footprint calculation applicable to industrial lithium-ion batteries - Part 1: General requirements and methodology

Methodik zur Berechnung des Kohlenstoff-Fußabdrucks für industrielle Lithium-Ionen-Batterien - Teil 1: Allgemeine Anforderungen und Methodik

Calcul de l'empreinte carbone applicable aux batteries Lithium-ion industrielles - Partie 1: Exigences générales et méthodologie

Ta slovenski standard je istoveten z: **EN IEC 63369-1:2026**

ICS:

13.020.60	Življenjski ciklusi izdelkov	Product life-cycles
29.220.01	Galvanski členi in baterije na splošno	Galvanic cells and batteries in general

SIST EN IEC 63369-1:2026 **en**

EUROPEAN STANDARD

NORME EUROPÉENNE

EUROPÄISCHE NORM

EN IEC 63369-1

May 2026

ICS 13.020.60

English Version

Carbon footprint calculation applicable to industrial lithium-ion batteries - Part 1: General requirements and methodology (IEC 63369-1:2026)

Calcul de l'empreinte carbone applicable aux batteries Lithium-ion industrielles - Partie 1: Exigences générales et méthodologie
(IEC 63369-1:2026)

Methodik zur Berechnung des Kohlenstoff-Fußabdrucks für industrielle Lithium-Ionen-Batterien - Teil 1: Allgemeine Anforderungen und Methodik
(IEC 63369-1:2026)

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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

Ref. No. EN IEC 63369-1:2026 E

European foreword

The text of document 21A/948/FDIS, future edition 1 of IEC 63369-1, prepared by SC 21A "Secondary cells and batteries containing alkaline or other non-acid electrolytes" of IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN IEC 63369-1:2026.

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) 2027-05-31
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2029-05-31

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The text of the International Standard IEC 63369-1:2026 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standard indicated:

IEC 62619:2022	NOTE	Approved as EN IEC 62619:2022 (not modified)
IEC 62973-1:2018	NOTE	Approved as prEN IEC 62973-1:2025 (not modified) to be published
ISO 14067:2018	NOTE	Approved as EN ISO 14067:2018 (not modified)
IEC 62620:2014	NOTE	Approved as EN 62620:2015 (not modified)
IEC 61427-2:2015	NOTE	Approved as EN 61427-2:2015 (not modified)
IEC 61427-2:2015/AMD1:2024	NOTE	Approved as EN 61427-2:2015/A1:2024 (not modified)
IEC 60254-1:2005	NOTE	Approved as EN 60254-1:2005 (not modified)
ISO 14040:2006	NOTE	Approved as EN ISO 14040:2006 (not modified)

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

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.

NOTE 1 Where an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: www.cencenelec.eu.

Publication	Year	Title	EN/HD	Year
ISO 14021	2016	Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling)	EN ISO 14021	2016

IEC 63369-1

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Carbon footprint calculation applicable to industrial lithium-ion batteries - Part 1: General requirements and methodology

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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Carbon footprint calculation applicable to industrial lithium-ion batteries - Part 1: General requirements and methodology

FOREWORD

1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
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IEC 63369-1 has been prepared by subcommittee SC 21A: Secondary cells and batteries containing alkaline or other non-acid electrolytes, of IEC technical committee 21: Secondary cells and batteries. It is an International Standard.

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

Draft	Report on voting
21A/948/FDIS	21A/968/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 63369 series, published under the general title *Carbon footprint calculation applicable to industrial lithium-ion batteries*, 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.

1 Scope

This part of IEC 63369 addresses general requirements and methodology, whereas intended IEC 63369-2[1] and intended IEC 63369-3[2] address applications of the methodology and default values of the CFF parameters by geographic area (see Annex B).

This document provides a comprehensive methodology for the calculation of carbon footprint of industrial type Li-ion battery from cradle to grave.

NOTE Industrial-type Li-ion battery is described in IEC 62619 or IEC 62620.

Second life and/or usage that was not intended when the battery was put on the market is not taken into account in this document.

This document, along with the other parts of this series, does not apply to batteries for portable, SLI and electric road vehicle traction applications. The definition of the parameters used for the carbon footprint calculation allows for comparability of results for all rechargeable Li-ion chemistries. Classes of representative products are defined in this document to allow comparison inside each class.

This methodology, based on the data provided by the battery manufacturer, is mainly intended to allow a carbon footprint assessment of several battery solutions over the Cumulated Requested Service (CRS). This assessment can be used in the selection process of the battery purchaser.

The methodology can also be used for a variety of purposes such as battery system development, eco-design and participation in voluntary or mandatory programs.

The methodology in this document is based exclusively on attributional life cycle assessment (LCA).

The carbon footprint calculation of charging equipment and power conversion equipment not necessary for battery functions is not covered in this document.

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.

ISO 14021:2016, *Environmental labels and declarations - Self-declared environmental claims (Type II environmental labelling)*

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1 Under consideration.

2 Under consideration.

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
primary data
foreground data
company-specific data
quantified value of a process or an activity obtained from a direct measurement, or a calculation based on direct measurements

[SOURCE: ISO 14067:2018, 3.1.6.1, modified – The terms "foreground data" and "company-specific data" have been added, and notes to entry omitted.]

3.1.2
secondary data
background data
data which do not fulfil the requirements for primary data

Note 1 to entry: As an example, secondary data can include data from databases and published literature, default emission factors from national inventories, calculated data, estimates or other representative data, when validated by competent authorities. Further industry average data (e.g., from published production data, government statistics, and industry associations), literature studies, engineering studies and patents, and may also be based on financial data. These industry average contain other generic data can be also considered secondary or background data.

Note 2 to entry: As an example, secondary data can include data obtained from proxy processes or estimates not directly collected, measured, or estimated by the company, but sourced from a third party LCI database or other sources.

Note 3 to entry: As an example, secondary data can include data not originating from a specific process within the supply-chain of the company performing the carbon footprint calculation report.

Note 4 to entry: As an example, secondary data can include primary data that went through a horizontal aggregation step.

Note 5 to entry: Details on secondary data selection is provided in intended IEC 63369-2 (see Annex B).

[SOURCE: ISO 14067:2018, 3.1.6.3, modified – term "background data" added, Note 2 to Note 5 added]

3.1.3
battery system
battery
<of Li-ion> system intended to provide the cumulated requested service as stated by the user which comprises one or more cells, modules or battery packs and all other components needed as per IEC 62619 and IEC 62620

Note 1 to entry: In situations where a single battery system is unable to supply the CRS, multiple battery systems need to be placed sequentially into service. The sum of those battery systems used over time to meet the CRS constitutes the battery system.

Note 2 to entry: See examples of a battery system structure in IEC 62619 or IEC 62620.

Note 3 to entry: The other equipment required to connect to the DC link or power grid such as converters, control and monitoring systems, inductors, application protection devices, etc are not part of the battery system.

3.1.4
battery manufacturer
entity which supplies the battery system(s) to meet the CRS of the application as expressed in the technical specifications from the user

Note 1 to entry: Component manufacturer that does not perform the sizing of the battery system is not defined as the battery manufacturer in this document.

3.1.5
set of conditions
group or collection of ambient and operating conditions present during the use stage

3.1.6
cumulated requested service
CRS
total amount of service requested by the buyer or the end user, expressed in duration (months or years) or delivered energy in kWh or its multiple, under e.g. representative ambient and operating conditions, as expressed in the set

3.1.7
battery system sizing
activity that defines the optimal battery system by taking in account its usage pattern and associated constraints defined by the battery system user

Note 1 to entry: The battery sizing is carried out by the battery system manufacturer and includes replacements if needed to meet the CRS.

3.1.8
battery system sizing result
total number of battery systems requested to provide the full application cumulated requested service, as calculated by the battery system manufacturer

Note 1 to entry: The sizing result is an integer, in case the battery components at the end of the CRS are still capable to provide service for extra time, the remaining part is not to be deducted

3.1.9
component manufacturer
entity which supplies a component of the battery system

Note 1 to entry: The cell or module manufacturer, as component manufacturer, does not perform the battery system sizing.

3.1.10
functionality class
<of battery systems> group of usage pattern of battery that presents similarities in the essential characteristics of the demand placed on the considered battery systems

Note 1 to entry: Only battery systems operating in the same functionality class can be compared in terms of battery carbon footprint.

3.1.11
functional unit
quantified performance, as stated in the end-user specifications, of the cumulated requested service provided by an industrial battery system

[SOURCE: ISO 14040:2006, 3.20, modified – deleted "of a product system for use as a reference unit" and replaced by "as stated in the user specifications, of the service provided by an industrial battery system"]