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Distributed energy resources connection with the grid -
Part 102: CAES connection to the grid

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Distributed energy resources connection with the grid - Part 102: CAES connection to the grid

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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 62786 series, published under the general title *Distributed energy resources connection with the grid*, 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– withdrawn, or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 62786, which is a technical report, provides principles and technical needs for the interconnection of the compressed air energy storage (CAES) system to the distribution network. It is suitable for the planning, design, operation and testing of CAES system interconnection to distribution networks. It includes the additional needs for the CAES system, such as connection scheme, grid-connected process and needs, response characteristics of active power to frequency, response characteristics of active power to current, response characteristics of active power to injecting mass flow, response characteristics of active power to pressure, selection of the point of connection (POC), electromagnetic compatibility (EMC) and power quality, communication and automation, monitoring and protection, immunity to disturbances, grid-connected testing needs, etc.

The CAES systems considered within the scope of this document include supplementary combustion CAES system and non-supplementary combustion CAES system, interconnected to medium voltage (MV) or low voltage (LV) distribution networks in the form of electric motors and generators. This document will report response of active power to frequency, response of active power to current, response of active power to injecting mass flow, response of active power to pressure, response of reactive power to voltage, and grid-connected testing for distributed CAES system, as a supplement for IEC TS 62786-1:2023 [1][1].

This document reports the interface needs for connecting CAES system to distribution network operating at a nominal frequency of 50 Hz or 60 Hz.

2 Normative references

There are no normative references in this document.

[1] Numbers in square brackets refer to the Bibliography.