



IET Standards

*centrica*

# Code of Practice for Electrical Energy Storage Systems



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Code of Practice

## NUMBER OF COMMITTEE MEMBERS



NUMBER OF HOURS IN COMMITTEE MEETINGS



NUMBER OF DOCUMENT ITERATIONS



NUMBER OF DPC COMMENTS

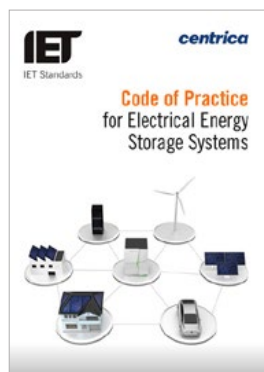
450



NUMBER OF PEOPLE WHO DOWNLOADED DPC

## PRODUCING

**ONE CODE OF PRACTICE FOR ELECTRICAL ENERGY STORAGE SYSTEMS**



## What are electrical energy storage systems (EESS)?

Electrical energy storage systems (EESS) allow for electrical energy to be stored so that it can be used later. There are a number of potential benefits:

- more efficient use of local renewable energy;
- grid demand support;
- support of low power loads during loss of grid supply;
- possibility for grid independence; and
- ability to reduce energy costs.

## An effective framework in which to operate

The aim of this Code of Practice is to equip practitioners with a reference tool for the safe, effective and competent application of EESS.

It will provide you with definitions of the common terms and operating modes of EESS, and detailed information on the specification, design, installation, commissioning, operation and maintenance of an EESS.

**'We were very keen to see a Code such as this developed which is why we worked with the IET. As a fast growing industry, energy storage installations need to happen in the right way to prevent the current lack of clear guidance damaging the reputation of the industry.'**

Frank Gordon - Renewable Energy Association

It will also guide you through the various challenges of EESS, including:

- similarities with solar PV, including how to operate an EESS in parallel with solar PV.
- off-grid or 'islanding' – how do you ensure continued protection against electric shock and against lightning and surges?
- safety of battery installations.
- identification of potential hazards and selection of suitable installation locations, including:
  - environmental considerations for batteries, such as temperature (charging and storage), ventilation/ gas and casings/enclosures that are suitable for potentially volatile/ harmful chemicals;
  - weight of equipment; and
  - fire suppression.



Picture courtesy of  
Victron Energy B.V.



Picture courtesy of Wattstor

The focus is on ensuring that the industry is ready to effectively design and install EESS.

The *Code of Practice for Electrical Energy Storage Systems* was prepared by thought leaders from across the industry, including manufacturers, legal and government representatives, academics and installers.

A total of 450 comments from the Draft for Public Comment were submitted and discussed by the committee to ensure that the Code provides a comprehensive best-practice approach for EESS in the UK.

## What's in the Code?

The Code of Practice includes the following sections:

- EESS components and architectures
- EESS operating states and applications
- Batteries
- Other EESS components
- EESS safety and planning considerations
- Specification of an EESS
- Design of an EESS
- Network connection and DNO approval
- EESS installation
- EESS test and commissioning
- EESS handover and documentation
- EESS operation and maintenance

**The work of the committee achieved a more streamlined and cost-effective connection process, immediately benefitting the wider industry.**



Picture courtesy of Moixa Energy



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## Who is this Code of Practice for?

The Code of Practice will be invaluable to those involved in the planning, procurement, design, installation, commissioning and maintenance of electrical energy storage systems and related equipment.

You can see from the varied makeup of the technical committee (see inside for details) the wealth of roles involved in EESS. This may include, but is not limited to:

- manufacturers;
- design consultants;
- contractors; and
- facilities managers.

## Why do you need this Code of Practice?

The Code addresses the issues facing this market, including the financial, operational and security aspects of managing systems effectively.

Using the Code will allow you to:

- improve safety and increase performance of electrical energy storage systems;
- gain expertise in the operation of your systems, including interaction with the grid; and
- manage integration issues effectively when working with low-voltage power systems.

## How to order:

Get 20% off the Code of Practice\*. Simply visit [www.theiet.org/eess-mini](http://www.theiet.org/eess-mini) and enter code EESS17 when prompted at checkout.

\*Only one discount per order, the highest available discount will be applied. Applies to first copy only, for orders placed directly through the IET website. Does not apply to ebooks. Offer ends 31 December 2017.

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The Institution of Engineering and Technology (IET) is working to engineer a better world. We inspire, inform and influence the global engineering community, supporting technology innovation to meet the needs of society. IET Standards creates problem-solving guidance, using its expertise alongside industry representatives to ensure comprehensive best-practice for the energy industry.

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Michael Faraday House, Six Hills Way, Stevenage, Hertfordshire, SG1 2AY, United Kingdom.

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