

# SPIDER WG Terms and Definitions

## Working Document

SPIDERWG Coordination Subgroup

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This is a working document intended to provide the SPIDERWG with clear definitions for use in their discussions and documentation.

### Purpose

This document provides a set of working definitions and acts as a useful reference for terms used to describe and related to distributed energy resources (DERs). The SPIDER WG recognizes that identical terms related to DER have been used with different meanings in various contexts. The goal of this document is to provide a standard set of definitions which will lead to consistent use of terms for DER in SPIDERWG. The terms may continue to change and be added during the development and resolution of the SPIDER WG activities. The terms may be used as future reference for the NERC Glossary of Terms as needed.

### Disclaimer

These definitions in this document do not represent official definitions approved by the NERC Board of Trustees. These terms also may not be the appropriate term in all scenarios and apply to all sectors of the industry or regions. While the SPIDER WG has decided to use the terms as defined in this document, more discussion may be necessary before the approval of any terms for use in NERC standards.

Since this is a working document, updates will be posted periodically. Check the SPIDER WG webpage<sup>1</sup> for the most current version. Recommendations for additions or modifications should be directed to the SPIDER WG Coordination subgroup at [spiderwg\\_coordination@nerc.com](mailto:spiderwg_coordination@nerc.com).

### Terms and Definitions Related to DER

The following are working definitions of DER and specific types of DER. Some of the definitions were discussed by the NERC DERTF and used as working definitions in other NERC Reports.<sup>2,3</sup>

Table 1.1: DER-Specific Terms

Term	Definition
Distributed Energy Resource (DER)	Any resource on the distribution system that produces electricity and is not otherwise included in the formal NERC definition of the Bulk Electric System (BES).

<sup>1</sup> [https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-\(SPIDERWG\).aspx](https://www.nerc.com/comm/PC/Pages/System-Planning-Impacts-from-Distributed-Energy-Resources-Subcommittee-(SPIDERWG).aspx)

<sup>2</sup> [https://www.nerc.com/comm/Other/essntlrbtysrvkstskfrDL/Distributed\\_Energy\\_Resources\\_Report.pdf](https://www.nerc.com/comm/Other/essntlrbtysrvkstskfrDL/Distributed_Energy_Resources_Report.pdf)

<sup>3</sup> [https://www.nerc.com/comm/PC/Reliability\\_Guidelines\\_DL/Reliability\\_Guideline\\_-\\_DER\\_Modeling\\_Parameters\\_-\\_2017-08-18\\_-\\_FINAL.pdf](https://www.nerc.com/comm/PC/Reliability_Guidelines_DL/Reliability_Guideline_-_DER_Modeling_Parameters_-_2017-08-18_-_FINAL.pdf)

Distributed Generation (DG)	Any non-BES generating unit or multiple generating units at a single location owned and/or operated by 1) the distribution utility, or 2) a merchant entity.
Behind the Meter Generation (BTMG)	A generating unit or multiple generating units at a single location (regardless of ownership), of any nameplate size, on the customer's side of the retail meter that serve all or part of the customer's retail load with electric energy. All electrical equipment from and including the generation set up to the metering point is considered to be behind the meter. This definition does not include BTMG resources that are directly interconnected to BES transmission.
Energy Storage Facility (ES)	An energy storage device or multiple devices at a single location (regardless of ownership), on either the utility side or the customer's side of the retail meter. May be any of various technology types, including electric vehicle (EV) charging stations.
DER Aggregation (DERA)	A virtual resource formed by aggregating multiple DG, BTMG, or ES devices at different points of interconnection on the distribution system. The BES may model a DERA as a single resource at its "virtual" point of interconnection at a particular T-D interface even though individual DER comprising the DERA may be located at multiple T-D interfaces.
Micro-grid (MG)	An aggregation of multiple DER types behind the customer meter at a single point of interconnection that has the capability to island. May range in size and complexity from a single "smart" building to a larger system such as a university campus or industrial/commercial park.
Cogeneration	Production of electricity from steam, heat, or other forms of energy produced as a by-product of another process.
Emergency, Stand-by, or Back-Up Generation (BUG)	A generating unit, regardless of size, that serves in times of emergency at locations and by providing the customer or distribution system needs. This definition only applies to resources on the utility side of the customer retail meter.
Utility-Scale Distributed Energy Resources (U-DER)	DER directly connected to the distribution bus or connected to the distribution bus through a dedicated, non-load serving feeder. These resources are specifically three-phase interconnections, and can range in capacity, for example, from 0.5 to 20 MW although facility ratings can differ.
Retail-Scale Distributed Energy Resources (R-DER)	DER that offsets customer load. These DER include residential, commercial, and industrial customers. Typically, the residential units are single-phase while the commercial and industrial units can be single- or three-phase facilities.

The following definitions are useful when discussing impacts of DER.

<b>Table 1.1: Terms for DER-Related Concepts</b>	
<b>Term</b>	<b>Definition</b>

### **Discussion and Application Examples of Definitions**

The following samples provides examples for the use of the terms defined earlier in this document to DER.