

Distributed Energy Resources (DER) Defined

DERs are “small, modular” sources of energy located close to load ([NREL, 2002](#)) and fall into one of three categories:

Distributed Generation (DG)

- Various generation technologies, usually < 10 MW, located at or near the place of consumption ([ERCOT, n.d.](#)).
- Examples:
 - Solar photovoltaic (PV) array
 - Wind turbine
 - Internal combustion engine
 - Microturbine
 - Fuel cell.

Energy Storage

- Equipment that can store energy via mechanical, thermal, chemical or other means and release it as needed to serve load ([Energy.gov](#)).
- Examples:
 - Battery
 - Flywheel
 - Pumped hydro
 - Compressed air
 - Thermal storage
 - Power-to-gas.

Demand Response (DR)

Programs and equipment to allow grid operators to control customer load remotely ([Energy.gov](#)).

- Examples:
 - Automated Demand Response (ADR) of load-taking equipment.
 - Energy Management Systems (EMS) with ADR capability.
 - Aggregation of DR into a virtual power plant (VPP).