Smart Grid Asset Descriptions

Asset	Description
Advanced Interrupting Switch	Switches or technologies that can detect and clear faults more quickly or without a traditional reclosing sequence.
Advanced Metering Infrastructure (AMI) / Smart Meters	Electricity meters that use two-way communication to collect electricity usage and related information from customers and to deliver information to customers.
Controllable/Regulating Inverter	AC to DC converters that properly regulate voltage and can be controlled remotely. These devices can significantly increase the integration of renewable or intermittent sources of electricity.
Customer EMS/Display/Portal	Devices or portals through which energy and related information can be communicated to and from utilities or third-party energy service providers. These devices can also help customers control electricity usage automatically by leveraging signals from the utility or owner-set parameters.
Distribution Automation	Distribution devices that can be used to perform automatic switching, reactive device coordination, or other feeder operations/control.
Distribution Management System	A utility IT information system capable of integrating, organizing, displaying and analyzing real-time or near real-time electric distribution data to offer a wide range of operational benefits. These systems can improve operations, increase system efficiency, optimize power flows, prevent overloads, improve power flows, prevent overload, improve outage management, and enable other decision support tools. These systems can integrate traditional IT information systems such as GIS, OMS, and CIS to create a system that allows for a more holistic and automated treatment of the distribution management problem.
Enhanced Fault Detection Technology	Enhanced fault detection technology enables higher precision and greater discrimination of fault location and type with coordinated measurement among multiple devices. For distribution applications, this technology can detect and isolate faults without full-power re-closing, reducing the frequency of through-fault currents. Using high-resolution sensors and fault signatures, this technology can better detect high impedance faults. For transmission applications, this technology will employ high-speed communications between multiple elements (e.g., stations) to protect entire regions—rather than just single elements. It can also use the latest digital techniques to advance beyond conventional impedance relaying of transmission lines.

Smart Grid Asset Descriptions

Asset	Description
Equipment Health Sensor	Monitoring devices that automatically measure and communicate equipment characteristics that are related to the "health" and maintenance of the equipment. These characteristics can include, but are not limited to temperature, dissolved gas, and loading. These devices can also automatically generate alarm signals if the equipment characteristics reach critical or dangerous levels.
FACTS Device	An electronic system and other static equipment that provide control of one or more AC transmission system parameters to enhance controllability and increase power transfer capability.
Fault Current Limiter	Devices that can be inserted into the grid to automatically limit the amount of through current the system experiences during a fault event.
Loading Monitor	Technology that can measure and communicate line, feeder, and/or device-loading data via a communication network in real- or near real-time.
Microgrid Controller	Devices that control and enable the establishment of microgrids. Microgrids are defined as electrical systems that include multiple loads and distributed energy resources that can be operated in parallel with the grid or as an electrical island.
Phase Angle Regulating Transformer	Transformers that enable phase-angle control between the primary (source) and the secondary (load) side to create a phase shift between the primary side voltage and the secondary side voltage. The purpose of this phase shift is to control the real power flow through interconnected power systems.
Phasor Measurement Technology	The phasor measurement units, phasor data concentrators, communications technology, and advanced software applications that enables system operators to collect and analyze synchrophasor data from the bulk transmission system.
Smart Appliances and Equipment (Customer)	Home appliances and devices (i.e., thermostats, pool pumps, clothes washers/dryers, water heaters, etc.) that use wireless technology (i.e., ZigBee) to receive real-time data from the AMI system to control or modulate their operation.
Software - Advanced Analysis/Visualization	Systems installed to analyze grid information or help human operators.
Two-way Communications (high bandwidth)	A two-way communications infrastructure that can network one or more parts of the smart grid via secure, high speed, high bandwidth connections. This infrastructure system serves as the backbone of the customer systems, AMI, distribution, and transmission smart grid systems.

Smart Grid Asset Descriptions

Asset	Description
Electric Vehicle Charging Station	An electric vehicle charging station that uses communications technology to enable it to intelligently integrate two-way power flow enabling electric vehicle batteries to become a useful utility asset.
Very Low Impedance (HTS) cables	Cables that use conducting materials that are very low impedance, which can enable better power flow control. Cables that use high temperature superconducting (HTS) conductor would be characterized as a VLI cable. HTS cables may enable additional benefits such as lower losses, increased power density, and self-fault limiting.