

OpenADR: Using OpenADR for DER



As the energy industry transforms itself toward a cleaner energy future, it will need to leverage industry standards to help manage the growing pool of Distributed Energy Resources or DER in the electric grid. DER is made up of a mix consisting of renewable energy, energy storage, demand response and electric vehicle charging.

Improving the reliability of the electrical grid, given the intermittency, flexibility and variability of these new power sources, is of critical concern to utilities and system operators worldwide.

While searching for cost effective tools, technologies and standards, several utilities have turned to an existing asset to help manage their changing energy mix – the OpenADR standard for communications to DER assets.

The traditional world of demand response (DR) is becoming more sophisticated and capable.

Energy suppliers are recognizing that DR can play a key a critical role in balancing distributed energy resources because by providing offsetting services such as frequency or voltage support or load shaping to mitigate the impact of DERs. In addition, the OpenADR standard supports communications to all DER resources including solar PV, storage batteries, EV charging and DR to manage changes in load shape, energy inputs and power characteristics of DER assets.

DR resources themselves have more capability to respond like a DER. OpenADR allows energy providers to have DR resources respond more like generation, making the grid more flexible and resilient. Fast DR allows ISOs and utilities to obtain a pre-committed load response in “real-time”, whereby resources can be dispatched with a latency ranging from 10 minutes to 2 seconds.



The OpenADR standard provides energy suppliers with a standardized way to send fast, reliable and secure price and event messages to a wide variety of customer installed equipment such as rooftop solar, onsite energy storage, electric vehicle charging stations and energy management systems.



Advanced control systems installed in customer premises can immediately act on grid information communicated by OpenADR messages to reduce operating costs and avoid power outages by leveraging capabilities of DR resources as well as rooftop solar, onsite energy storage, and electric vehicle charging stations.

An example of an OpenADR DER related application might involve delaying EV charging when the local grid is under stress. OpenADR signals can cause DR assets in a particular area to automatically adjust to an overloaded system. Customers can voluntarily participate in an OpenADR based program, get compensated for EV charging load reduction, and charge their vehicles at a later time, with a lower cost. OpenADR allows the grid to automatically optimize and manage the charging station's power consumption based on changes in grid conditions or a price signal communicated via OpenADR.

The OpenADR standard is administered by the OpenADR Alliance, a large, international ecosystem of system operators, utilities, aggregators, controls vendors and solution providers that share a common interest in accelerating the use and adoption of this international standard.

The OpenADR Alliance has released a DR Program Implementation Guide and Certification Program with the goal of standardizing the use of OpenADR in common utility programs, such as DER.



Join the **OpenADR** Alliance

Industry stakeholders worldwide are working together to foster the development, adoption and compliance of the Open Automated Demand Response (OpenADR) standard through collaboration, education, training, testing and certification.

Anyone with an interest in facilitating and accelerating the use and adoption of the OpenADR standard for price- and reliability-based demand response are encouraged to join the OpenADR Alliance.

More information on the OpenADR Alliance is available at www.openadr.org

OpenADR Alliance

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