

OPENADR EV CHARGING CASE STUDY

The Solution Behind AMPECO's Integration with E.ON's SWITCH

Real-world Applications Leveraging OpenADR 3.0

OVERVIEW

Back in 2022, the OpenADR Alliance and member AMPECO announced a partnership to empower global utilities and charge point operators in unlocking energy flexibility opportunities in Europe. This partnership over the years has demonstrated the growing momentum for cloud-based demand response (DR) solutions in the context of electric vehicle (EV) charging.

AMPECO provides a comprehensive cloud-based platform for CPO operations and is being used in 60+ countries around the world. Among other features, the platform addresses energy management challenges. It facilitates demand response and distributed energy automation by utilizing standards such as OpenADR. The platform connects homes and businesses with utilities to manage power fluctuations by adjusting power consumption in response to grid demand. AMPECO's solution seamlessly integrates with smart meters, building management systems, and renewable energy sources to maximize efficiency. This functionality made AMPECO's platform a perfect fit for E.ON's OpenADR 3.0 certified platform SWITCH. (<https://www.ampeco.com/ev-charging-platform>)

E.ON is one of Europe's largest energy networks operators and provider of customer solutions for 50 million customers, is clearly committed to contribute to these goals by unlocking innovative decarbonization solutions.

Recently E.ON successfully completed interoperability testing to become one of the first VTN (Virtual Top Node) solutions to achieve OpenADR 3.0 Certification. The new OpenADR 3.0 protocol setting new standards for demand response and energy system flexibility. This latest protocol isn't just an upgrade from 2.0—it's a seamless shift towards smarter, more adaptable energy management.

E.ON's SWITCH flexibility platform is a web-based solution with full API support and an intuitive UI, facilitating both manual and automated operations. The platform provides system integration and interfaces for key stakeholders, including grid owners, consumers, producers, and aggregators. The primary function of SWITCH is to deliver flexibility services, including conditional steering of resources. (<https://www.eon.com/en/about-us/politics/flexibility/flexibility-in-use.html>)

The Challenge:

The ability to group large sets of charge points and leverage communication flows towards managing all planning, trading and market monitoring activities.

The Solution:

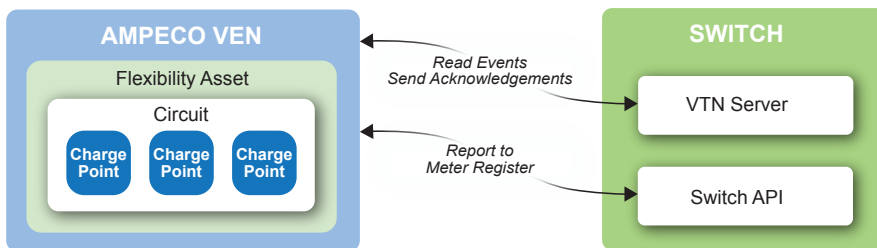
The solution was the integration of AMPECO's EV charging management platform with SWITCH, enabling seamless communication between the two systems.



This integration based on the new OpenADR 3.0 standard allows AMPECO to receive events from SWITCH, send acknowledgments, and automatically enforce charging limitations on charge points based on grid conditions, ensuring efficient load management and grid stability.

The OpenADR 3.0 protocol was implemented to ensure standardized communication flow between SWITCH and AMPECO and enhances reliability, reducing integration complexity. Relying on RESTful API, it is relatively seamless to implement and can achieve results at scale.

AMPECO's extensive features provide dynamic load management, customizable user interfaces, API-driven integrations, and remote maintenance to optimize operations across public, private, fleet, and residential charging use cases that enabled AMPECO to receive events from SWITCH, send back acknowledgments, and schedule asset power limitation periods.



The Result:

As a result, power limit is applied to circuits and based on the built-in dynamic load management algorithm the capacity is allocated among charge points and smart charging profiles are applied to charge points accordingly.

The integration process was seamless, as AMPECO had already developed an additional abstraction layer for flexibility assets, positioned above circuits. This foundation enabled us to efficiently establish AMPECO's Virtual End Node (VEN) and concentrate on optimizing the communication flows between AMPECO and SWITCH.

OpenADR is becoming the most common standard used by utility and wholesale market DR programs and has already been leveraged in EV charging by utilities in partnership with automotive OEMs. The standard continues to grow globally, and we foresee a continued uptick in industry deployments based on the OpenADR 3.0 protocol on a global basis.



About OpenADR Alliance

The OpenADR Alliance brings together system operators, utilities, aggregators, controls vendors and solution providers to support the growth of this international standard (IEC 62746-10-1) Industry stakeholders worldwide work to foster the development, adoption and compliance of the OpenADR standard through collaboration, education, training testing and certification. There are currently over 250 certified OpenADR products. Collaboration includes technical working groups – most recently the creation of an Electric Vehicle Interest Group.