

OPENADR EUROPEAN CASE STUDY

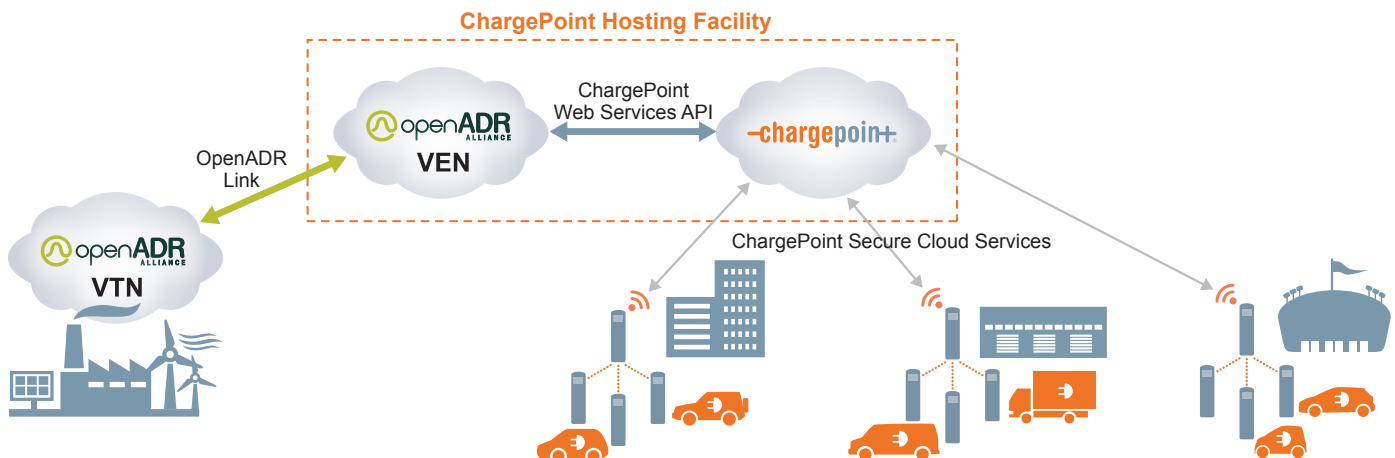
PROJECT ELBE

**Hamburg Energie, Stromnetz Hamburg,
Vattenfall and ChargePoint**

PROJECT GOALS

Project ELBE is an incentive programme for EV charging infrastructure and integrating EV chargers into buildings. (ELBE stands for “Elektrifizierung von Gebäuden für Elektrische Fahrzeug;” In English, “Electrifying Buildings for Electric Vehicles”). Funding for the project comes from the German Economics Ministry via their Clear Air Program. The goal is to install in Hamburg 7,000+ intelligently controlled charging stations. Through ChargePoint, a sub-component of the programme, 4,500 charging points were installed in 2020.

From a research and development perspective, the target of the project is to create and scale an interface for grid-friendly charging with the Distribution Network Operator (DNO). As part of that interface, the project members chose the OpenADR protocols (standardized internationally as IEC 62746-10-1.)



OpenADR Communications for the Project Involved 8 CPOs:

- **Utilities:** Vattenfall, Hamburg Energie, Stromnetz Hamburg
- **Networks:** ChargePoint, Parkstrom, The Mobility House
- **Oil and Gas:** Shell/New Motion, Total/Digital Energy Solutions
- **Curbside Charging:** ubitricity
- **Hardware Vendors:** ChargePoint, KEBA, Alfen, Compleo, NewMotion, Mennekes

OPERATIONAL DETAILS

After a period of lab testing with 6 Charging Point Operators (CPOs) in 2019, field testing began in 2020 with more than 100 connected ports. Field tests included information exchange with all customers for daily load reductions of 30 minutes with 50% participation. The number of charging points has since increased to 389.

OpenADR protocol services employed in this process include:

- **Registration (EiRegisterParty):** EiRegisterParty is used to identify entities such as CPOs and other parties. This is necessary before an actor can interact with other parties.
- **Event (EiEvent):** EiEvent are central event functions and information models that are used to reduce load. This service is used to activate a demand response.

In the operating mode, EiEvents are drawn from the Charging Point Operators (Virtual End Nodes (VENs) in the OpenADR vocabulary) from the distribution network operator (called Virtual Top Nodes (VTN)).



OPENADR STATUS IN EU MARKETS

In May of 2021, the U.K. Department for Business, Energy & Industrial Strategy recommended the use of OpenADR in the new PAS 1878 standard for smart appliances participating in Demand Side Response programs.

Further work is proceeding to introduce OpenADR in European norming and policy institutions.

- European Level: DG Move, CEN/CENELEC, and multiple EU Horizon Projects, including an open source implementation called OpenLEADR.
- Germany: Federal Ministries, FNN, DKE, EEBUS
- U.K.: Department of BEIS
- Spain: University of Madrid
- Portugal: Utilities

OpenADR, which is widely adopted in the U.S. with hundreds of certified DRMS and DERMS vendors. Of particular note is a partnership incorporating OpenADR in the Open Vehicle Grid Integration Platform, a partnership between several U.S. distribution utilities and multiple automotive OEMs including BMW and Daimler AG, plus Ford and General Motors in the U.S.



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.