What are Virtual Power Plants?

A virtual power plant (VPP) is a system that aggregates the distributed energy resources (DERs) of individual households or businesses into a single entity that can be managed and operated as a single entity. The DERs in a VPP can include things like solar panels, wind turbines, battery storage systems, and other forms of distributed generation.

The goal of a VPP is to provide a more stable, reliable, and efficient energy system by allowing the resources to be used together in a coordinated way. For example, if one household has excess solar power that it is not using, that excess power could be used to charge a battery in another household that is experiencing a power deficit. This can help to smooth out fluctuations in demand and supply and make the overall system more resilient.

VPPs are often used to support the integration of renewable energy into the grid and to reduce the need for traditional, centralized power plants. They can also provide a way for households and businesses to participate in demand response programs, where they are paid for reducing their energy consumption during times of high demand.

We have done multiple smart grids, microgrids, and virtual power plant projects that take advantage of the latest on this topic. And we continue to work on and advance multiple aspects of these solutions today and look forward to sharing more soon.

FERC order 2222 opens the door for this new business model to emerge as DER aggregators emerge, and the rules of engagement get defined one ISO/RTO region at a time. In ERCOT, not ruled by FERC, the PUCT has mandated an ADER Pilot Project to test the capabilities of VPPs.

We are tracking and working with several clients on this critical milestone project that will define the new rules of engagement in ERCOT and other energy markets.

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Written by

Andres Carvallo
CEO & Founder
CMG Consulting LLC
Author of “The Advanced Smart Grid”
Series Editor, Power Engineering at ArtechHouse
Chairman, SAE Austin
ASME, IEEE, SAE, SIM member

Co-Director, CIEDAR Consortium
Fellow, Materials Applications Research Center
Professor of Innovation, College of Science & Engineering
Texas State University

