220 kWh virtual power plant

220 kWh virtual power plant

Explore

Products & Services

Support

A VPP is a portfolio of distributed energy resources (DER), including electricity consumers, small-scale renewable energy power plants, storage batteries, onsite battery storage, and fuel cells, which are controlled in an integrated manner to function as if they were a single real power plant. It is also called a virtual power plant.

For practical purposes, VPPs act like and have the same effect as a traditional, centralized large power plant. Their ultimate goals are the same - ensuring that energy demand on the grid is met by the available energy supply and that the grid remains stable.

Traditional power plants operate out of one physical location and work only on the supply side of the grid equation - as demand increases, the centralized physical power plants ramp up to supply more energy.

A virtual power plant, by contrast, uses its many decentralized assets in different ways with IoT to help supply meet demand. Decreasing demand has the same effect as a traditional power plant increasing supply -- ensuring that supply and demand stay balanced.

But this is not all that VPPs can do. Some of the DERs in a VPP can also supply energy to the grid (e.g., on-site generators, storage technologies), a trend that we see increasing in the future.

Adoption of DERs is growing, as they enable organizations to be more flexible in how they consume energy, advance their sustainability goals, and boost resilience across their operations.

A wide variety of different energy assets can be aggregated into a VPP. Some examples of assets in VPPs include:1. Flexible load1)： Flexible load refers to the management of electricity demand (consumption) to match the supply of electricity. The most common demand-side flexibility is demand curtailment, which can be incentivized through utility or market operator Demand Response programs. Under these programs, large electricity consumers are rewarded for curtailing demand during system peak hours.

2. Battery Storage： Battery storage systems can enable organizations to allow consumers to use energy stored during periods of low electricity prices or energy stored by renewable energy sources. Batteries can contribute stored energy directly to the grid as part of a VPP.3. On-site solar： On-site solar can help

reduce the volume of electricity purchased from the grid. Depending on the contract program, excess solar can be exported back to the grid.4. Electric Vehicles： Much like a battery, smart EV charging can respond to grid signals and allow EV owners to shift their charging time from high electricity prices periods to low electricity prices. A Case study with Gogoro and Enel X Taiwan is an example of this.

By optimizing usage of DERs, VPPs offer many benefits over the traditional centralized power plant model. This is because alternative thermal power plants are often expensive to operate. In addition, grid operators spend a lot of money maintaining these plants so they can be ready to start up at times of peak demand quickly.

Contact us for free full report

Web: https://kary.com.pl/contact-us/
Email: energystorage2000@gmail.com
WhatsApp: 8613816583346