

ET Summit 2022

Presented by



Virtual Power Plant Project

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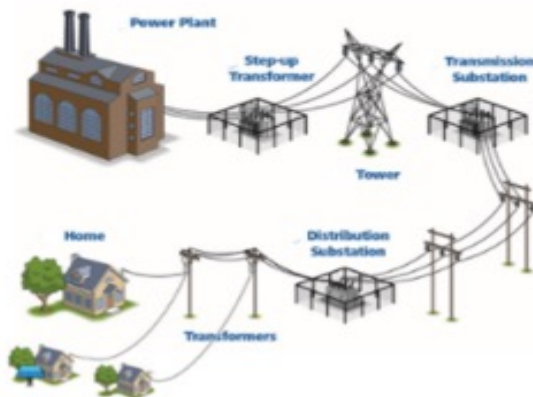
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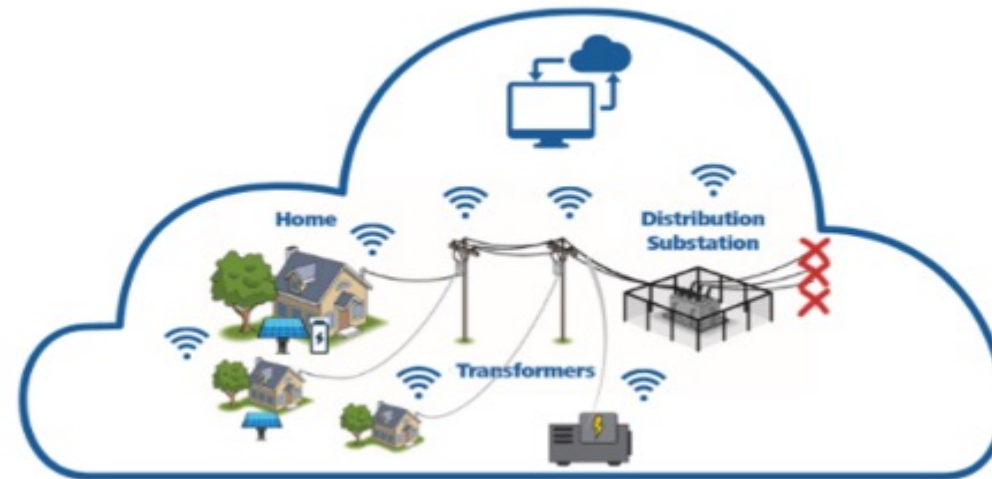
What is a Virtual Power Plant or VPP?

- A Virtual Power Plant (VPP) is a network of distributed energy resources (DERs) and/or other devices at customer homes and/or commercial buildings all working together as a single “virtual” power plant that can be signaled to provide reliable power during grid needs

Traditional Power Plant



Virtual Power Plant



Virtual Power Plant - Overview

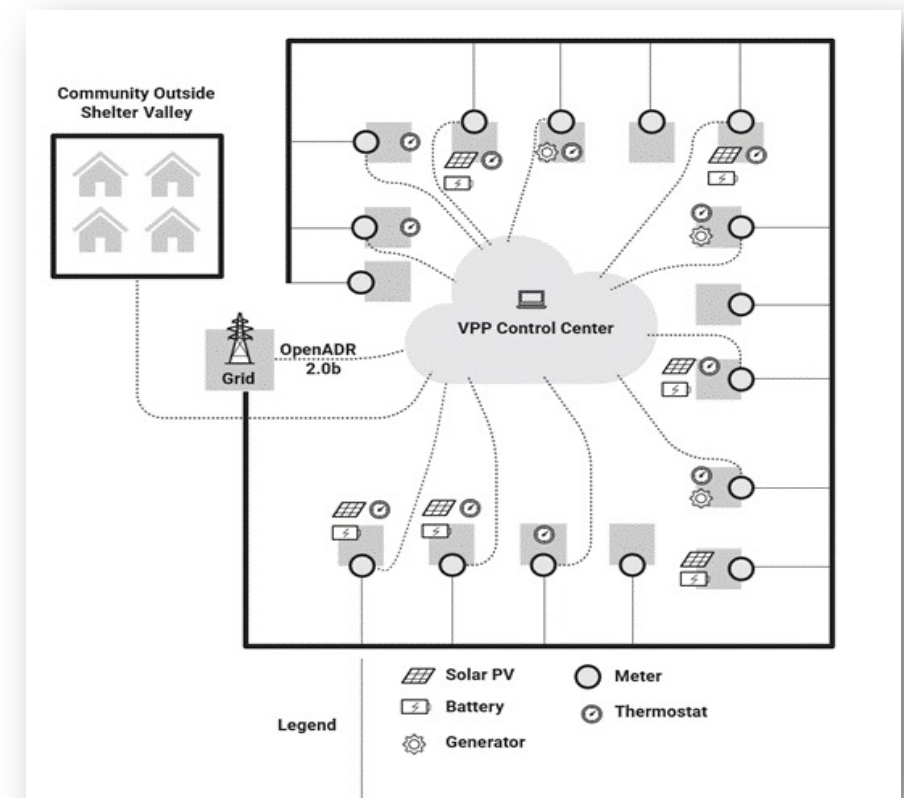
- Virtual Power Plant (VPP) project launched to help strengthen community resilience, electric energy reliability, and emergency preparedness in an unincorporated community
- Project focused on Shelter Valley, which is a community located in East San Diego County that is prone to outages and Public Safety Power Shutoffs (PSPS)
- VPP project will evaluate the control, dispatch and real-time signaling of behind-the-meter resources to address grid needs
- VPP devices include multiple end uses and different technology providers



Total Customers
~212



Solar Customers
~40



Virtual Power Plant - Overview

- **Primary Use Cases:**
 1. Curtail load and dispatch storage/generation during peak energy consumption periods
 2. Community resiliency for Public Safety Power Shutoff event mitigation
- Signal devices using Generac Grid Services' "Concerto" platform
- Devices to be installed at single-family homes and Community Center, which serves as an important facility (ex. cool zone, food drives, etc.)



Virtual Power Plant – Resource Mix

- Primary resource mix includes smart thermostats, well water pump controllers, electric water heater controllers and battery storage
- Window/portable air conditioner unit control devices might also be incorporated for customers who don't have central air
- Cloud-based signals to be sent to devices simultaneously or at pre-defined intervals (ex. by device type)



Virtual Power Plant – Participation Details

- Participants must be an SDG&E customer located in Shelter Valley and meet the following requirements to participate:
 - Own a functioning central air conditioner, electric water heater, well pump and/or window portable air conditioner
 - Battery storage recipients required to have existing solar
 - Priority to Medical Baseline and Access and Functional Needs (AFN)
 - Customers agree to monitoring of energy usage and control of devices during evaluation
 - Contractors conduct site visits, assess property layout and equipment for eligibility prior to installation
 - Complete a survey
 - Schedule follow-up site visit and/or answer questions after installation, if required



Virtual Power Plant – Status

- Customer engagement and recruitment being finalized
 - Community meetings/events
 - E-mail and traditional mail
- Contractors conducted site visits, assessed property layout and equipment for eligibility prior to installation
- Developed resource mix based on community characteristics
- Device installations expected to begin this month
- Initial device signaling expected to begin before the end of the year
- Follow-up site visits will be scheduled with customers to answer questions after installation, if needed
- Survey to be sent to participating customers
- Project contracted thru 2022
 - Plan to extend thru 2023



This project is funded by the SDG&E Emerging Technologies Program.

For more information, contact Jeff Barnes at jbarnes@sdge.com.

Final Report will be published on Emerging Technologies Coordinating Council (ETCC) web site (www.etcc-ca.com) upon completion of project.

Interested in learning more about this project, visit

- www.sdge.com/vpp
- <https://www.sdgenews.com/article/energy-101-virtual-power-plants-explained>

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