



SOLUTION GUIDE

Turnkey VPPs: Efficient Energy Management in a Decarbonized World

Flexibility and Scalability for Integrating Distributed Energy Resources into the Grid

Empowering Energy Providers with End-to-End DER Delivery

Distributed energy resources (DERs) – everything from utility-scale battery storage to residential solar, smart thermostats, and EVs – are an essential part of today's complex energy mix. Aggregated and optimized into virtual power plants (VPPs), the unlocked capacity of DERs can help balance the grid and accelerate progress toward a 100% renewable future.

SOLUTION BENEFITS



Improve Grid Stability

Balance supply and demand and better manage energy flows to improve the stability and reliability of the grid.



Mitigate Volatility Risks

Aggregate and orchestrate reliable, flexible capacity to hedge against demand spikes and energy price volatility.



Lower O&M Costs

Optimize energy use and reduce costs associated with energy procurement and grid infrastructure upgrades.



Increase Efficiency

Operate the grid more efficiently by reducing energy waste and integrating renewables.



Maximize Market Participation

Leverage open protocols and APIs to enable seamless asset management and optimization of market interactions across diverse fleets of DERs.



Reduce Customer Churn

Maximize customer bill savings through demand charge management, time of use arbitrage, and incentives for reducing energy consumption.






In a rapidly evolving energy landscape, integrating and managing an increasingly complex mix of energy assets, data sources, and customer requirements are critical challenges to remaining competitive

- ✗ Disparate Data
- ✗ Energy Volatility
- ✗ Integration Issues

AutoGrid offers turnkey virtual power plant (VPP) solutions to manage the entire lifecycle of customer DER assets and provide reliable load reductions or supply-side capacity when dispatched. Combining the power of AutoGrid's Flex™ software platform with industry-leading program management, a vast ecosystem of technology partners, and a 24/7 network operations center, AutoGrid delivers true turnkey value.

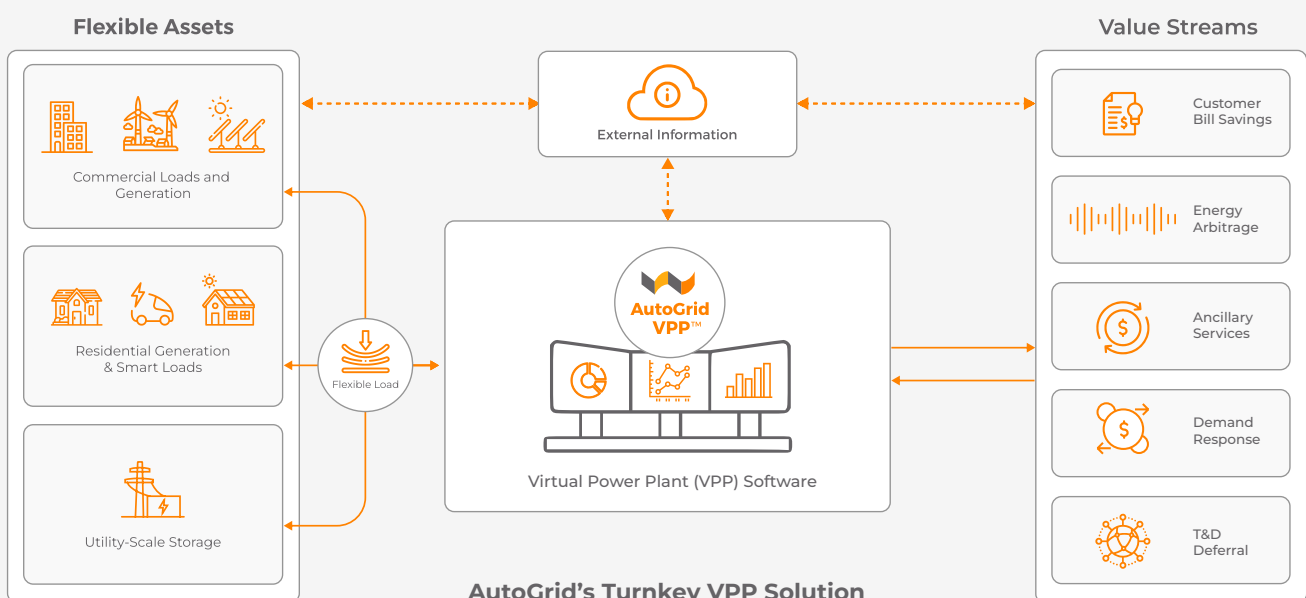
EMPOWERING ENERGY PROVIDERS WITH TURNKEY VPP SOLUTIONS

 Balance supply and demand to reduce peak load

 Reduce energy procurement and infrastructure costs

 Improve overall energy efficiency

 Boost customer enrollment and retention





A Challenge and Opportunity to Evolve in the New Energy Economy

AutoGrid delivers technology solutions that enable a smarter, cleaner, more distributed electric power grid. By providing VPP solutions that harness, orchestrate, and optimize energy assets across all customer classes, device types, and use cases, we enable our utility and other energy industry customers to easily adapt to and take advantage of the huge forecasted growth in DERs.

SOLUTION FEATURES



Real-time Monitoring and Control

Real-time monitoring and control of DERs enables utilities to respond quickly to changes in demand or supply.



Intelligent Optimization Algorithms

Advanced machine learning algorithms predict energy demand, optimize energy storage and dispatch, and reduce energy waste.



Scalable and Modular Design

Solution scales up or down to meet the needs of any organization, from small regional providers to large multinational



Robust Security and Reliability

Multiple layers of security built to the highest industry standards and best practices protect against cyber threats and ensure reliability.



Turnkey Solutions

Concierge services including project management, system design, installation, maintenance and support allow grid operators to attain reliable capacity with the same confidence in delivery as a traditional power plant.



Interoperability and Open Protocols

Open protocols and APIs ensure communication with a wide range of devices and systems, without being locked into a specific technology or vendor.

Incorporating VPPs into Integrated Resource Planning to Meet Decarbonization Goals



**Comprehensive
Functionality**



**Predictive
Controls**



**Cyber
Hardened**

Integrating VPPs as a tier in a utility's integrated resource plan helps to ensure that utilities are effectively using all the tools at their disposal to achieve their decarbonization goals. With AutoGrid's VPP solutions, DR portfolios from residential, commercial and industrial (C&I), and other client-managed DERs can be incorporated into the VPP over time, making this the most flexible approach for meeting grid reliability needs.

AutoGrid Flex™ monitors, forecasts, optimizes, and dispatches DERs at scale to provide simultaneous behind-the-meter bill savings and revenue streams via market participation. **But we're not just a platform.** We provide complete advisory and implementation services to ensure that your VPP has been designed and operates to achieve reliable capacity and maximum return on investment.

WHY AUTOGRID?

We're the world's only mixed-asset, multi-market VPP platform.

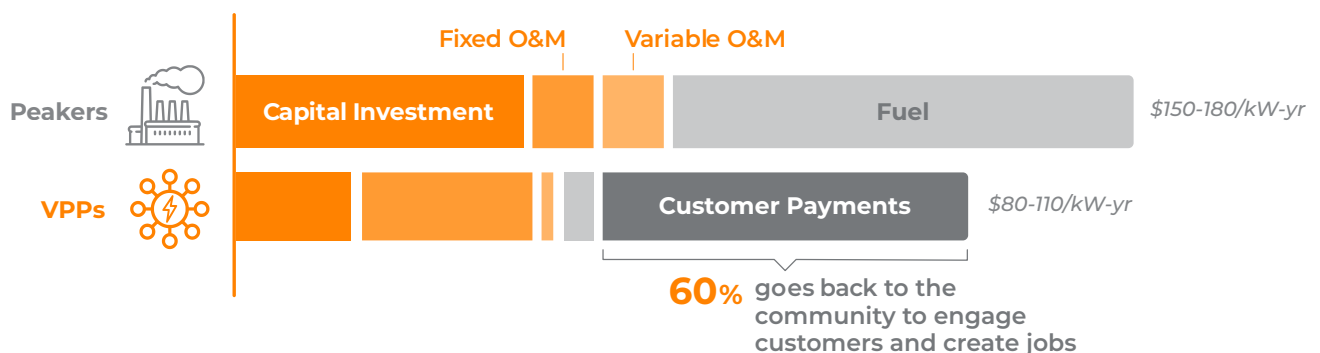
AutoGrid Flex expands your energy flexibility by pooling direct load control (DLC) assets, batteries, electric vehicles (EVs), backup generators, and solar installations onto one platform.

With a mixed-asset VPP, you can take advantage of portfolio-level benefits, such as increased capacity, greater availability, reduced risk, and economic optimization across diverse assets.

Achieve capacity on par with traditional peaker plants, but with lower costs, emissions, and higher resiliency.

Advanced predictive controls enable utilities, energy providers, and grid operators to optimize distributed energy resources (DERs) and manage them as a single system.

Aggregated as a VPP, diverse sources of distributed energy such as solar PV, batteries, electric vehicles, and demand response programs can balance supply and demand, reduce peak load, and improve grid reliability, eliminating the need for polluting and costly peaker plants.



Maximize the Value of Your DER Portfolio Across Multiple Markets



Open Standards



Largest Network



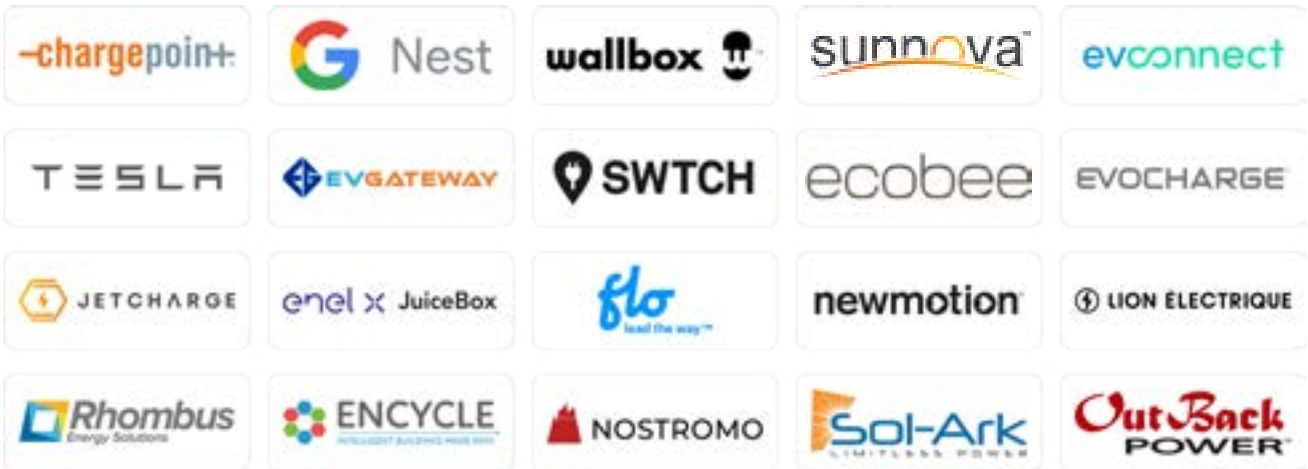
Analysts' Top Choice

By supporting open standards and numerous APIs, AutoGrid ensures that you can maximize the number of assets integrated into your VPP. Our expansive partner network extends to leading DER OEMs for C&I, residential, and network services programs.

Partnering for Production-Proven Scale

Autogrid delivers technology solutions that enable a smarter, cleaner, more distributed electric power grid. Since 2011, the world's leading energy companies have turned to AutoGrid to integrate DERs at massive scale, turn on new revenue streams, and drive deeper engagement with their customers.

By providing solutions to harness, orchestrate, and optimize energy assets across all customer classes, device types, and use cases, we enable our utility and other energy industry customers to easily adapt to and take full advantage of the tremendous growth potential of DERs.



LET'S CONNECT

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