



PowerKonnekt

Virtual Power Plant (VPP) & Aggregation

www.powerkonnekt.com

VPP & Aggregation



"A Virtual Power Plant (VPP) optimises, schedules, and dispatches aggregated assets to deliver grid services and participate in energy markets."

Grid Balancing

Stabilizes frequency by coordinating distributed assets.

Market Bidding

Enables automated participation in grid service markets.

Real-Time setpoints

Sends fast charge/discharge commands fleet-wide.

"Aggregation" brings together multiple distributed energy assets (BESS, PV, wind, EV chargers, industrial loads) into a single operational cluster."

Unlock flexibility

Extracts available up/down regulation from each asset.

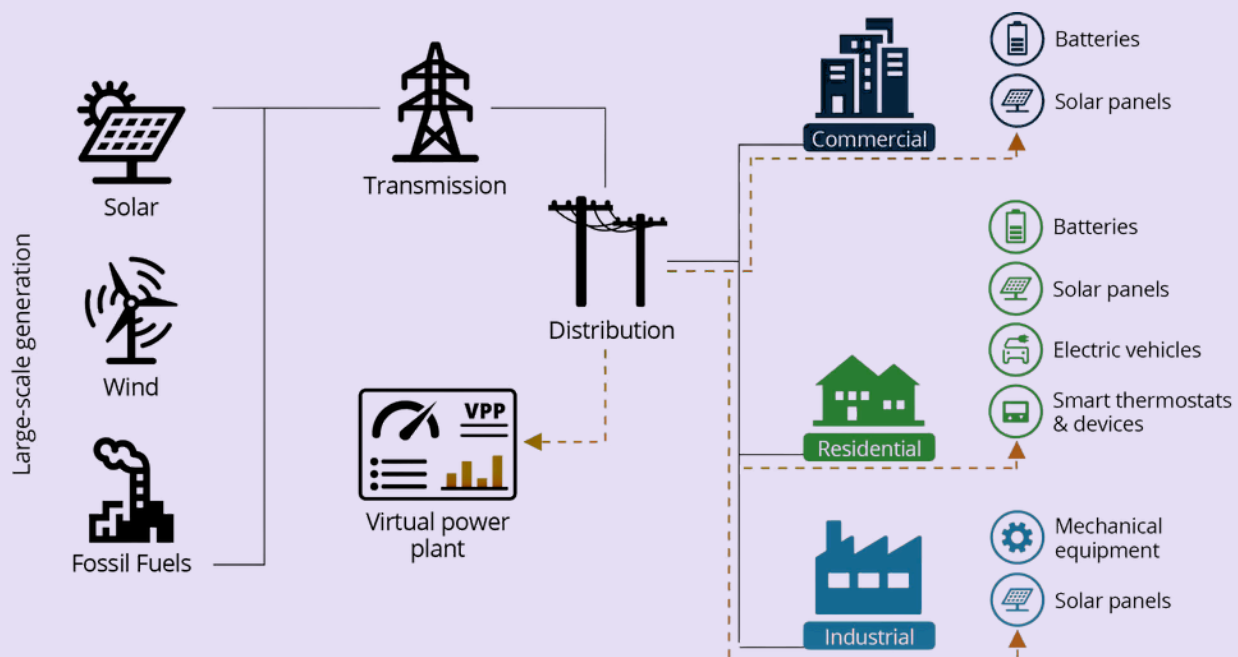
Multi-Site Coordination

Operates multiple locations as one response unit.

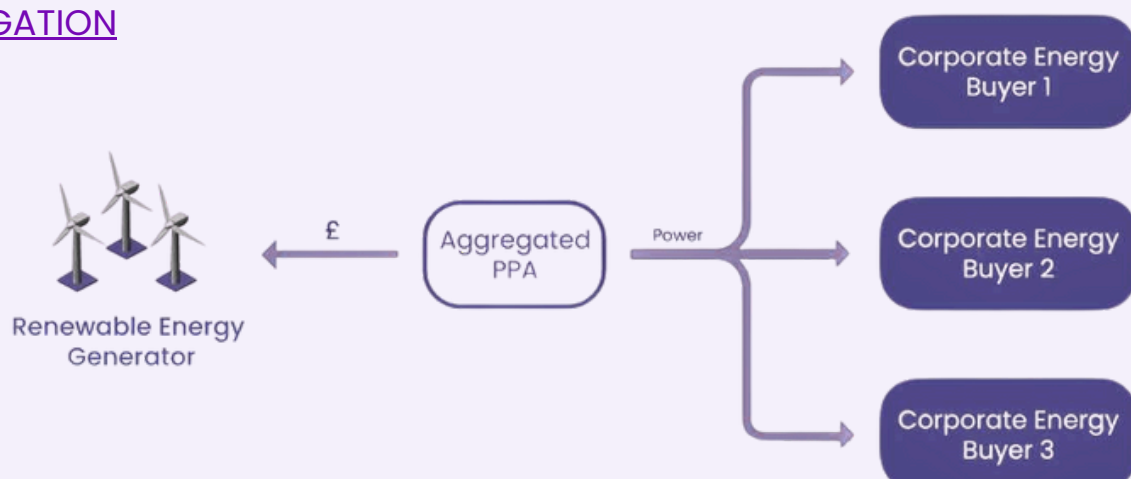
Load-Generation Optimization

Balances renewables and consumption during deviations.

VPP



AGGREGATION





VPP

- 1. Real-Time Dispatch & Control:** Fast setpoint delivery, frequency response, and constraint management.
- 2. Market Participation Engine:** Day-Ahead, Intraday, aFRR, mFRR, FFR, Capacity Markets.
- 3. Forecasting Suite:** PV, wind, load & price forecasting for scheduling.
- 4. Optimization Engine:** SoC planning, renewable smoothing, lifecycle-aware operation.

AGGREGATION

- 1. Multi-Asset, Multi-Brand Aggregation:** BESS, PV, wind, EVCS, loads, gensets - all integrated regardless of vendor.
- 2. Clustering & Pooling Logic:** Site-level, asset-level, or fleet-level grouping.
- 3. Flexibility Extraction:** Available load shift / charge / discharge potential identified in real time.
- 4. Cross-Site Coordination:** Optimizes power flows across multiple facilities or locations.

CASE STUDY

Project: KEDEP

Size: Total 1.12 MWh

Location: Türkiye (İstanbul, Eskişehir, Denizli)

Key Capabilities Demonstrated

- Multi-Site VPP operation in Real Time
- Unified Control & Dispatch
- Performance Tracking Across the Fleet
- Operational Intelligence on a Single Screen
- Peak Limiting, Load Following and Reactive Power Support



Outcome

PowerKonnekt enables:

- Centralized visibility for distributed assets
- Faster operational decisions
- Stronger coordination between BESS and critical loads
- Investment Postponement in 3 residential districts
- A ready foundation for a scalable aggregation operation





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