Virtual Power Plants: Using Distributed Generation & Storage to Increase Power Grid Flexibility and Meet Demand Fluctuations

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SOLAR UNITED NEIGHBORS
solarunitedneighbors.org

REIA NM
SINCE 2004

Who we are

Solar United Neighbors is a vendor-neutral national nonprofit that represents the needs and interests of solar homeowners and supporters across the U.S.

- We've helped 10,000+ families go solar
- We've generated more than $180 million worth of solar investments
- We've facilitated 1,100+ solar jobs

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Who we are

REIA NM SINCE 2004

The mission of the Renewable Energy Industries Association of New Mexico (REIA-NM) is to support, promote and accelerate the just and orderly transition to renewable energy in New Mexico through bold advocacy and strong partnerships.

- Advocate at the state legislature
- Work at the PRC.
- Colloborate with state & local government

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What are Virtual Power Plants?

Virtual Power Plants (VPPs), also known as Distributed Power Plants (DPPs), are geographically dispersed, but centrally managed groups of customer resources that supply energy, reduce power demand, and provide services to the electrical grid.

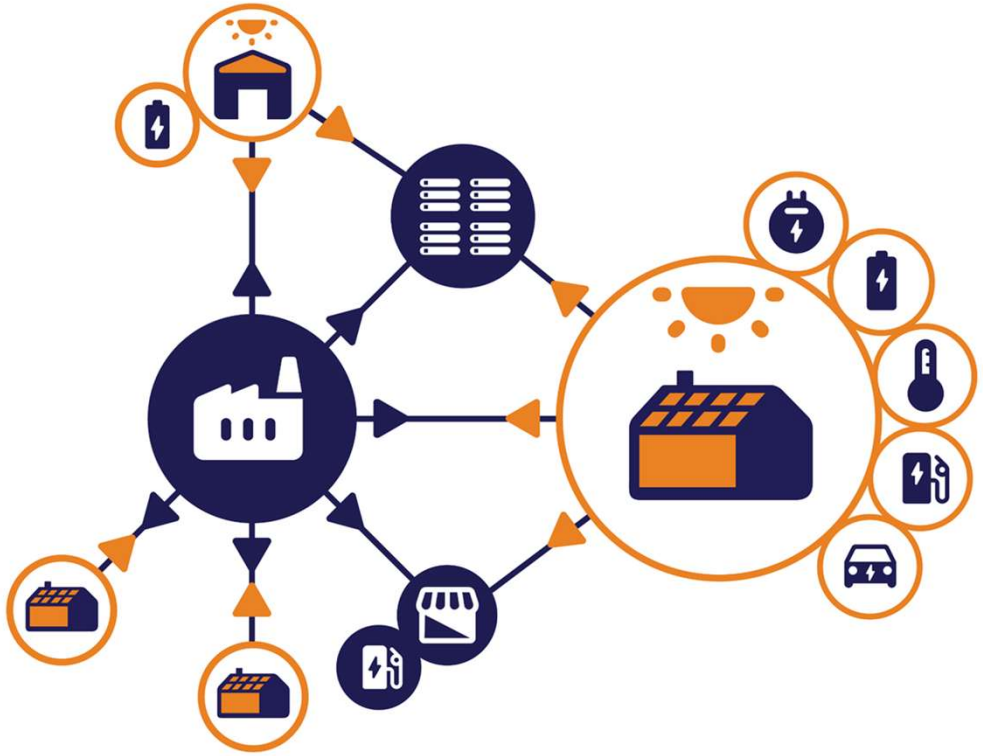
The resources are used in a coordinated manner during a grid event — a time when shifting load or adding distributed energy storage can reduce peak power demands and save customers money.

Your home as a VPP resource

Virtual Power Plants (VPPs) harness the power of Distributed Energy Resources (DERs) in the community.

VPPs network together homes & businesses in a community that have gone solar and that store power in batteries.

During times of high usage those batteries can join together to support the grid.



How VPPs work in practice

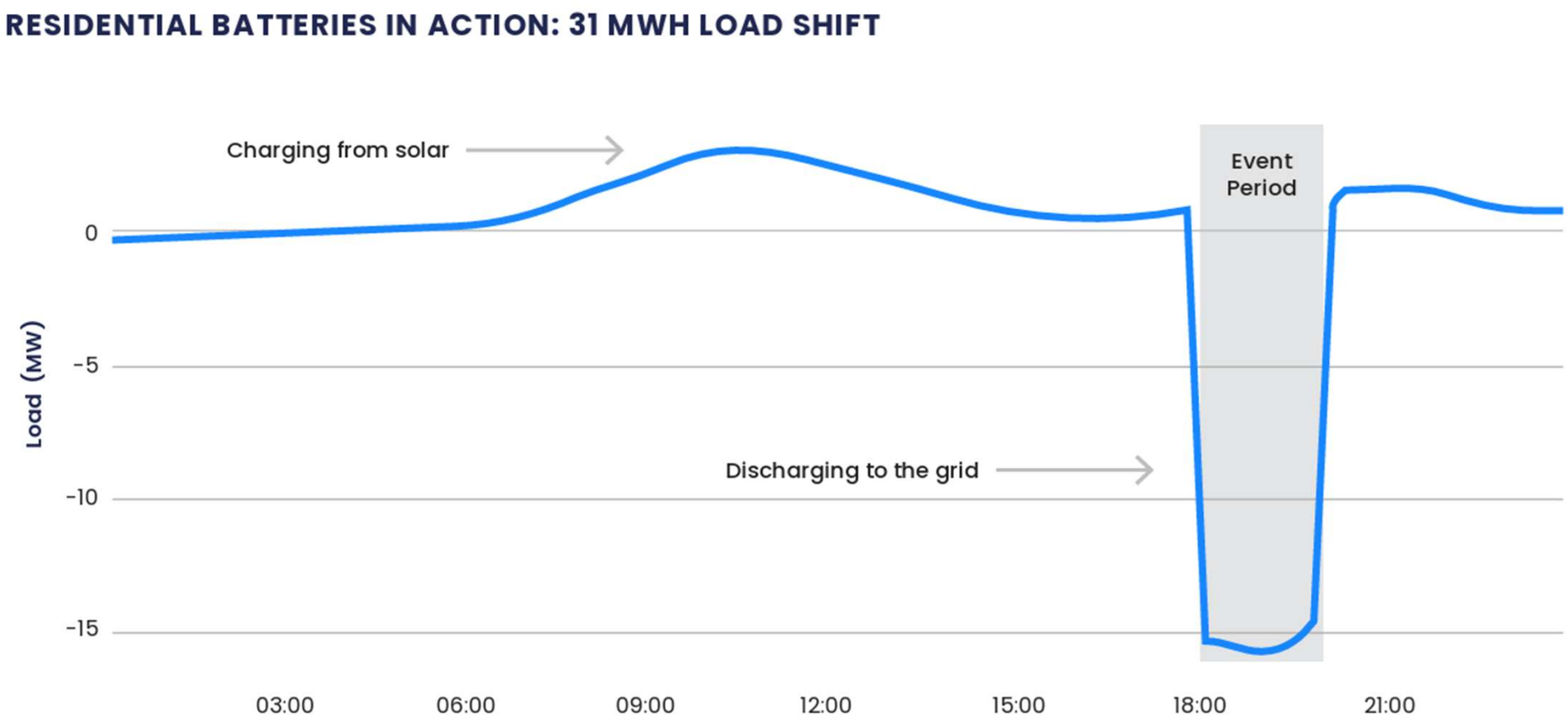
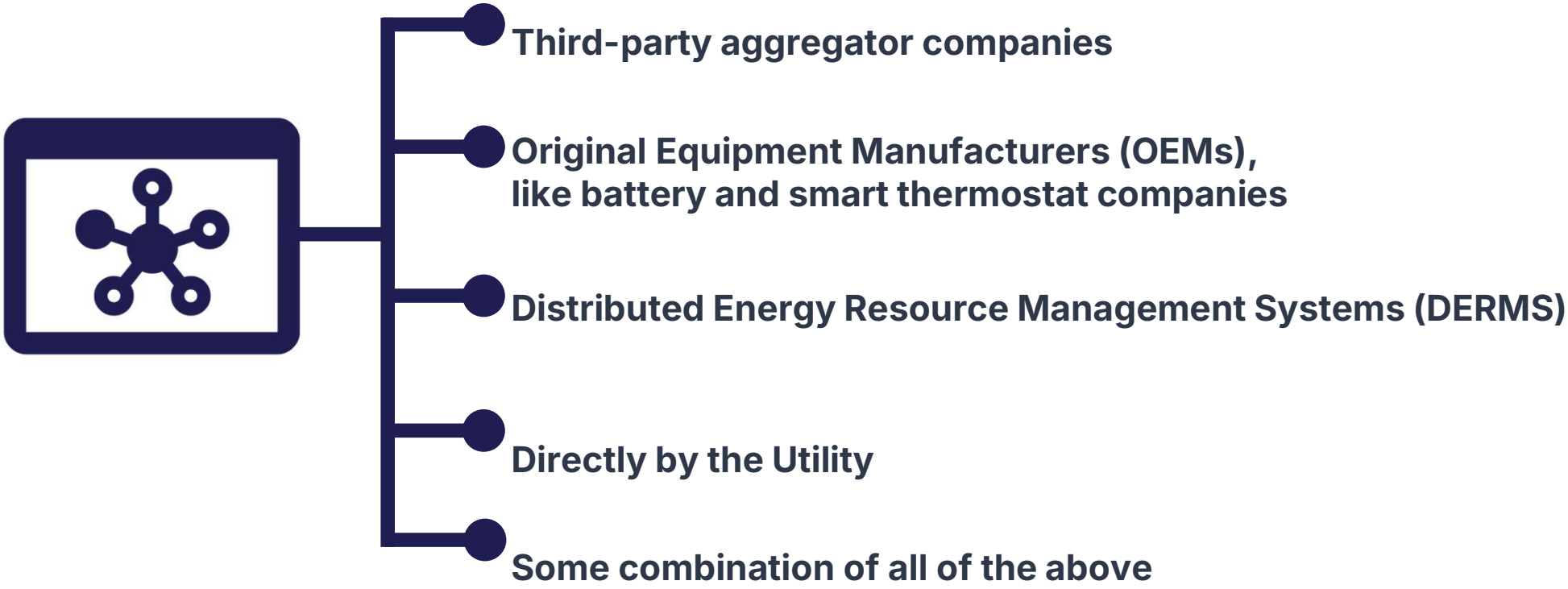


Fig. 3: East Coast utility shifts 31 MWh away from the peak in June, 2025 using residential batteries. (Source: EnergyHub)

Who controls a VPP?



The role of third-parties

VPPs incorporate **readily-available** technology & optimize use of existing distribution and transmission systems.

VPPs embrace the **innovation of non-utility entities** to implement cost-effective solutions.

By allowing customers to bundle systems through third-party providers, a VPP unlocks financing options and creates **competition and economic efficiency**.

By intelligently coordinating thousands of distributed energy resources, we're not just helping families save on electricity costs, we're fundamentally reimagining how communities access reliable, sustainable power during critical demand periods.

Ani Backa, GoodLeap Vice President of Virtual Power Plants

The Case for VPPs in New Mexico

By 2030, VPPs could lead to...

10 Billion in savings if VPPs triple

The Brattle Group

60 GW reduction in peak load

RMI

17 billion cut in annual energy expenditures

RMI

Why we need VPPs

DPPs **reduce peak load**, displacing reliance on more expensive energy resources.

Enable greater adoption of renewable energy

These **cost savings** are spread among all customers, keeping electricity bills lower.

Facilitate **electrification** of homes and businesses

Why we *definitely* need VPPs

Available now to meet rising energy needs with off the shelf technology

DPPs can be deployed in months not years without long permitting or construction timelines

Incentivizes customers to **Go Solar and gain energy independence** *(something they already want to do)*

Make the grid more **flexible, reliable, and resilient**

VPPs are nonpartisan and market-driven

VPPs "offer a technology-neutral, market-based approach that harnesses the power of consumer choice and private investment to benefit the entire grid." -Minnesota Conservative Energy Forum

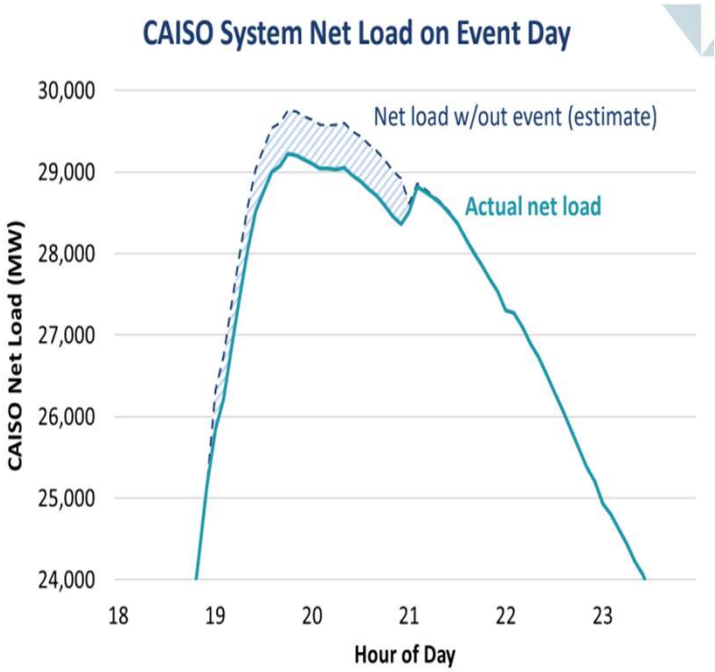
"We should strive toward an energy system that seeks to remove barriers to innovation and enable vibrant ecosystems to accelerate opportunities for consumers to have access to affordable and dependable power systems, decide how and when they consume (and produce) the electricity they want and need, and invest in the solutions that bring them the greatest value." - American Enterprise Institute

The Scale of VPP Potential in New Mexico

- **Who can participate:**
  - Existing solar customers ***who add new battery storage***
  - Existing solar customers ***with existing battery storage***
  - New solar customers with ***new battery storage***
- **New Mexico has 200 MW of customer-sited solar, providing a strong base of generating capacity to build a VPP program around in the near term; however, battery installations remain lower than some states, necessitating a strong incentive and compensation framework**

Test Dispatch of VPPs in California

- Test was on July 29, 20025 on Pacific Gas & Electric, Southern California Edison and San Diego Gas & Electric.
- Test was conducted by Tesla & Sunrun and results analyzed by the Brattle Group.
- 100,000 Homes participated and 535 Megawatts of energy was dispatched.



Notes: Net load sourced from CAISO and reflects actual demand less solar and wind output. Baseline net load in the absence of the event was constructed using 5-minute telemetry data provided by Sunrun and Tesla. All battery output is shown as a reduction in net load.

Workforce Potential of VPPs

- VPPs create a diverse range of jobs
- Jobs are more distributed & local
- VPPs create opportunities for training and apprenticeship programs

Policy Opportunities

What could VPP legislation do?

- VPP legislation can establish
  - **Statutory directives, timelines for VPP deployment & operation**
  - **Standards for program design**
  - **Customer rights and utility responsibilities**.

- Legislation can also create **incentives** for battery storage adoption and further **policy goals** in New Mexico to have a larger share of energy come through customer-sited renewable energy resources.

- Importantly, legislation can include **protections** against utilities exercising their monopoly power for unfair competitive advantages over non-utility solar and battery storage providers

Why do we need legislation, cont.

In short . . . legislation creates **guardrails** that ensure **customer protections** and gives **policy guidance** to the PRC on key aspects of a VPP program

Questions?

Learn more about VPPs & get a copy of SUN's model bill
bit.ly/4kVs9oK

Contact us to learn more
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