sparkfund

DELIVERING GRID VALUE AT SCALE:

Distributed Capacity Procurement

With new load growth on the horizon, utilities face the dual challenge of maintaining affordability and building fast enough to support economic growth.

Utilities have an opportunity to lead the energy transition and make buildings a valuable extension of the grid.

How can utilities pull this off?

With their deep understanding of the grid, utilities are uniquely positioned to lead the charge on planning, siting, deployment and dispatch of DERs to create a more resilient, sustainable, and cost-effective grid.

Utility-led deployment of DERs, drives progress at a scale and pace that would be unattainable through fragmented, third-party efforts while increasing affordability, reliability, decarbonization, and energy equity.

> **Distributed Capacity Procurement:** The path to unlock grid value at scale by accelerating utility-led DER deployment in your territory.

Affordability
Lowers system costs through grid value maximization and competitive local supply chain.

Reliability
Enhances resilience, provides backup power, and improves community preparedness.

Clean Energy
Accelerates solar, storage, and efficiency adoption, reducing emissions and bills.

Equity
Prioritizes underserved communities, to promote energy justice, and reduce energy burden disparities.

Economic Development
Attracts investments, creates jobs, and stimulates innovation in the territory.

Faster Time to Power
Leverages modular DERs for rapid response to grid needs and electrification efforts.

Example DCP By the Numbers:
Accelerating Deployment to Unlock Grid Value

22
BATTERY systems installed per month.

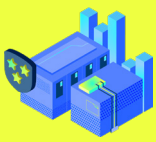
22
SOLAR systems installed per month.

400MW
of BATTERY capacity

448MW
of SOLAR capacity

500KW
per BATTERY

500KW
per SOLAR array



- ✓ 1, 2, 4, 6, and 8 hour battery options (utility specifies)
- ✓ Assumes 4 hour battery duration

- ✓ Optional solar array sized to power batteries depending on battery duration
- ✓ Assumes 4 hour battery duration

36 months
Program implementation + 9 month setup phase

Program fees
4-6% of total capital deployed

45-90 FTEs
To provide program admin, safety and compliance, operations and value chain management, and customer engagement (includes software and data packages).

How it Works: Roles & Responsibilities

Our goal is to help utilities accelerate the deployment of distributed assets, delivering flexible system-level capacity that reduces costs to all ratepayers by smoothing peak demand and avoiding or deferring the need for CTs/peakers, as well as reducing costly T&D system upgrades as demand grows rapidly.

Sparkfund simplifies the delivery of grid value at scale with key support functions that include:

- ✓ Customer engagement
- ✓ Value chain management
- ✓ Data and analysis
- ✓ Program administration

THE DCP PROGRAM

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Customer Engagement

- Direct customer outreach and engagement in the utility brand.
- White-label marketing and education materials, approved by the utility.
- Project scoping and proposal development.
- Management of customer asset hosting contracts.
- Engage customers to extend utility value proposition of a low cost, reliable grid.
- Not a sales effort (compared to VPP aggregators).

A Different Approach

An educational approach with a dedicated outreach team who engages with customers:

- To explore the benefits of extending the value of the grid into their building, including sustainability, resilience, and reliability.
- To communicate the value associated with hosting grid assets, including direct benefits such as increased resiliency and lower energy costs, to indirect benefits of contributing to a more affordable grid by helping avoid more expensive grid upgrades.

A strategic approach rooted in the view that buildings are grid resources and when:

- Targeted geographies selected by utility that unlock the highest grid value, versus a third-party VPP aggregator focused on areas with highest customer acceptance.
- Utility led, grid value focused approach can defer T&D costs, provide peak shaving, and lower total cost of power to customers.

How it Works: Roles & Responsibilities

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Value Chain Management

- Organize and maintain a competitive ecosystem of approved local vendors and OEMs to deliver the capacity in the market.
- Conduct bids for vendors across equipment manufacturing, design, construction, and O&M.
- Accountability for project delivery at or below targeted $/MW that protects ratepayer investments.
- Accountability for the ongoing monitoring, preventative maintenance, and repairs required to keep the installed units working optimally.

Energy Value Chain Optimization

Faced with an inefficient energy value chain, all participants navigating the energy transition need an experienced partner like Sparkfund who:

- Procures and delivers capacity across each value chain segment in a way that lowers the price upstream and maximizes the grid value downstream for ratepayers.
- Identifies, prioritizes, and manages vendors and OEMs across the value chain, ensuring each install delivers the critical impact necessary to unlock grid value at scale.
- Oversees end-to-end delivery, deployment, and maintenance of market quality DER projects — ultimately meeting specific grid needs and efficiently deploying ratepayer dollars at the nodal, zonal, and building level.

In Southern California, Sparkfund deployed $40 million of grid assets, organizing a competitive value chain of vendors and OEMs to **drive down cost of install by 8%.**

Data & Analytics

- Collaborate with the grid planning team to conduct comprehensive grid impact assessments, including transmission and distribution system impact analysis, to identify the optimal geographies for DER deployment.
- Develop methodologies to quantify the grid value of distributed assets, focusing on generation, transmission, and distribution benefits.
- Ongoing analytics support to model customer and building level impact of specific asset deployments, including load shape analysis, and feeder-level impact where available.
- Asset monitoring and reporting on system status and uptime.

Understanding System Impact

Through the DCP program, Sparkfund helps utilities curate the right energy data platforms to:

- Begin the data and analytics journey by supporting the development of a distribution system impact model.
- Assess where batteries and solar generation placement create the most benefit for the grid.
- Identify transformer overload, substation feeder investment, and ongoing building-specific analytics, ultimately understanding how load curve growth shape changes with DER placements.
- Work with utility and regulator to build and continuously improve grid value methodology.

How it Works: Roles & Responsibilities

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Data & Analytics

- Management of the program including reporting, metrics and governance, AHJ coordination, licensing.
- Ensure program participants are compliant with utility requirements, state, local and federal law.
- Generation of standardized template legal contracts and related materials, e.g. Master Service Agreements and SLAs with vendor ecosystem, customer asset hosting agreement.

Utility

- Utility system planning workstream to identify geographies with maximum grid benefit from DER deployment, develop target capacity need and incorporate into IRP or IDP modeling.
- Engage relevant regulatory authorities to gain approval of the procurement of distributed capacity.
- Utility to develop methodology to determine value of deployed assets to the grid with three primary areas of potential grid value impact:
  - ✔ **Generation:** Present value of avoided capital and operating cost of alternative peaking capacity assets, e.g. CTs.
  - ✔ **Distribution:** Reduced need for capital investment in upgrades to the distribution grid, e.g. deferral or avoidance of substation construction or upgrade to serve a given customer load.
  - ✔ **Transmission:** Improved capital efficiency of transmission buildout, lowered congestion and improved hosting capacity resulting from increased grid flexibility and dispatchable capacity resources.

Utilities earlier in their customer program strategy journey can engage **Sparkfund's Energy Transition Advisory services** to support custom program design and DCP strategy development with robust stakeholder engagement.

Relevant Distributed Energy Technologies

- BATTERY STORAGE
- BACKUP GENERATION
- SOLAR GENERATION
- BUILDING ENERGY EFFICIENCY MEASURES

Supercharge Your **VPP Strategy**

The DCP approach allows for **10x annual rate of deployment** of installed capacity in your territory compared to aggregator-led VPPs

Utility-led deployment model creates a better customer experience compared to the aggregator-led VPP model, targets the areas of the grid that need DERs the most, and incorporates grid value to make asset hosting decisions a low or no cost to customer.

Accelerate the VPP Model

By leveraging central planning to incorporate grid value, DCP builds on the success of VPPs and deploys critical capacity faster. **Sparkfund anticipates deploying 200+ MW per year** compared to, for example, the Rocky Mountain **VPP Watt Power program, which enrolled just 6.7 MW in 2021.**

Cohesive Customer Experience

A utility-led, utility-branded customer journey from enrollment through participation provides an integrated experience that aligns incentives, lowers friction, shortens sales cycles, and increases participation — ultimately deploying assets faster.

Targeted Grid Value

Compared to a traditional VPP, the DCP approach leverages utility led planning to strategically deploy assets in places that avoid the most cost and creates the most value for the grid. An optimized value chain then maximizes the efficiency of existing distribution infrastructure by ensuring quality install and maintenance, cybersecurity, and alignment with justice commitments and goals.

DCP VS. Combustion Turbines

DCPs Efficiently Meet Grid Demand Where It Is

- **DCP reduces demand on small radial spokes**, ultimately **alleviating stress** on that spoke, the transformer at the hub, and every T&D element upstream, while **reducing actual kWh demand and the excess generation needed to account for losses.**
- DCP assets placed at the end of a radial distribution spoke **efficiently serve both downstream and upstream grid needs.**
- **DCP assets can be placed in load pockets to meet peak demand,** ultimately increasing power flow for charging during low-demand times and discharging storage to reduce power demand during peak periods — **making existing distribution infrastructure more efficient.** Applicable to largest incoming load, e.g. data centers.
- Power plants serving stressed lines deliver more expensive and carbon-intensive power while **charging batteries at off-peak hours generates fewer losses and lowers charging costs.**

Distributed Capacity deployed in the right places can help overcome structural barriers faced by centralized generation

- 100-year-old legacy grid topology is a radial, hub-and-spoke model with CTs often positioned at the largest hubs. The combination of **variable growth and unplanned electrical infrastructure leads to hub-and-spoke bottlenecks creating grid congestion and deliverability issues with unidirectional flow.**
- **A CT cannot push enough power through the low-voltage delivery spoke upstream to larger hubs or back downstream** to meet the growing demands of a dynamic, shifting electrical map.
- **Radial power lines face constraints during high periods of coincident demand** from all users on the spoke, and conversely, **during off-peak periods capacity goes unused.**
- Electrical resistance on radially designed grids creates thermal inefficiencies, requiring power plants to **burn more fuel and generate more kWh to reach the end-user.**
- **Grid inefficiencies compound** as lines reach rated capacity (ampacity), power moves through less efficient lower-voltage lines, and power plants face extreme climate conditions.

Distributed Capacity Procurement (DCP) Timeline

9 MONTHS

36 MONTHS

DCP Set-Up & Launch

- Hire in-territory program support staff
- Collaborate with utility stakeholders to develop and finalize grid value methodology
- Source, diligence, and sign contracts (MSA/SLA) with competitive ecosystem of local vendors and OEMs
- Coordinate with utility selected DERMs system to ensure proper connectivity, cybersecurity, uptime and dispatch readiness
- Develop customer engagement strategy and conduct training of utility customer relationship owners, account management and call center staff
    - Engagement and value proposition messaging for customers to accept grid assets on/around their premises
- Create white-labeled customer-facing materials
    - Marketing collateral, leave-behinds, customer value explainers
    - Awareness and outreach campaigns through utility approved channels
    - Asset hosting contract templates

DCP Deployment

- Finalize targeted geographies with utility defined maximum grid benefit
- Launch customer engagement efforts with proactive outreach
- Execute customer asset hosting contracts
- Oversee design, construction and ongoing service of battery projects
- Conduct competitive bidding to lower install cost while meeting requirements
- Manage customer support inquiries, service calls, and repairs as needed

Case Study

An Energy Transition Management Program in Action: Achieved best-in-market 94% enrollment rate sustained over 3 years

Sparkfund, over a three and a half year period, partnered with a leading utility focused on wildfire risk mitigation by deploying backup generation, solar, and battery storage assets to customers at risk of power disruptions.

Unique Residential and Commercial Hybrid Program

Sparkfund acted as program administrator from inception, coordinating and managing a roster of installers across the utility's footprint. Key role responsibilities:

- Ensuring that program targets are achieved
- Regularly reporting on performance to the utility's management team
- Troubleshooting programmatic issues
- Liaising with the county permitting office to ensure timely turnaround
- Monitoring and managing the performance of contractors
- Program designer for commercial projects
- Maintaining assets with utility-grade dispatchability uptime

RESULTS

94%
customer conversion rate from lead to close

30+
installs a month

1,200 +
residential customer installs

15+
commercial & community installs

$40M
backup generation, solar & storage assets deployed

4-6 week
lead to install commencement timeline

Contact us today to learn how we can help you lead the energy transition.
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