Microgrids for Energy Resiliency & Optimization

Deployment Stories

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Climate Center Resiliency Webinar

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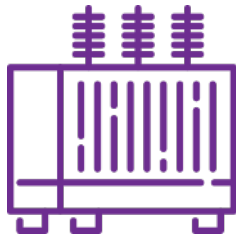
SimpliPhi Power Energy Storage Systems

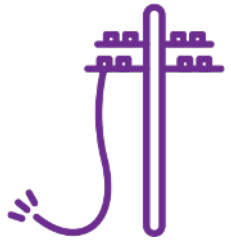
Accelerating the Energy Transition

Leveraging renewables by decoupling supply and demand on grid and off and reducing atmospheric CO2 & GHG emissions behind climate change.



Reimagining the Power Grid

Supporting new and emerging energy markets that blur the line between in-front-of and behind-the-meter, aligning the interests of the utility and customers.



Building a More Resilient Energy Future

Creating a more resilient power infrastructure using distributed customer-sited assets along the entire distribution grid for individuals, businesses and whole communities.

Delivering Economic Value

Eliminating economic losses due to power outages and reducing daily energy costs through demand charge management, peak shaving and time of use utility charges.

At SimpliPhi, our mission is to create universal access to reliable, safe and affordable energy to empower people, communities and enterprises globally.

Microgrid Case Studies

SimpliPhi Microgrid Deployments

Off-Grid Solar + Energy Storage to Power Hawaiian Schools

Hawaii Department of Education and HECO needed to upgrade 256 schools throughout the islands to provide adequate AC cooling

Challenge

- Est. cost to upgrade facilities with new AC was $1.7BN
- Adding AC exceeds antiquated buildings and the utility grid

Solution

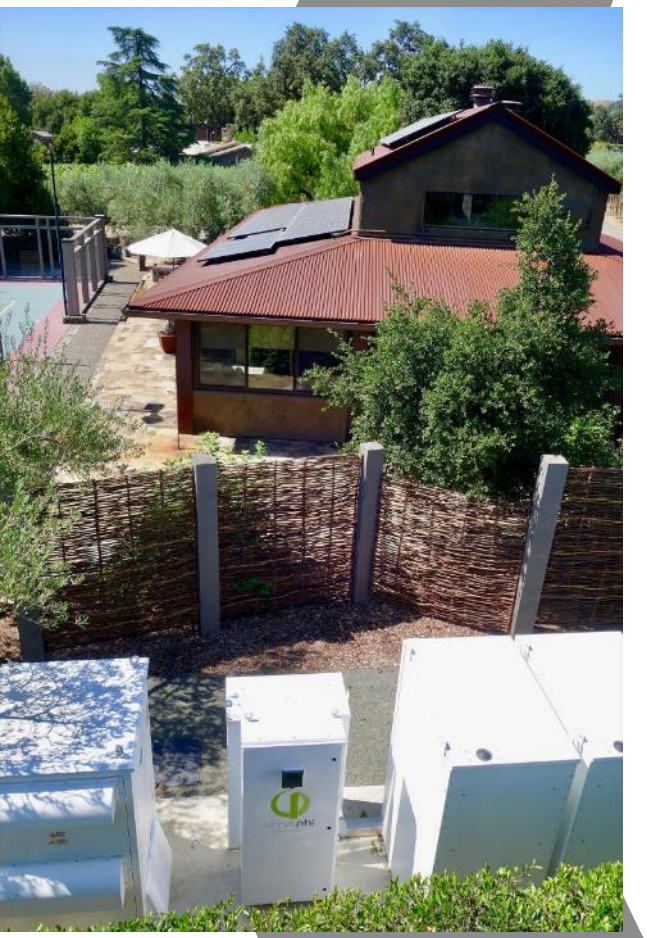
- Install Solar + SimpliPhi Energy Storage Systems
- UL 1741 SA compliant inverter charge controller operates on grid or off – reducing costs to $100M

Outcome

- Over 1,300 classrooms in 88 schools on the islands have had air conditioning installed as of Dec 2017
- The solar plus storage solution made it financially feasible to run the AC units while lowering energy costs by 6%

SimpliPhi Microgrid Deployments

Stone Edge Farms Microgrid



This is a self-sustaining Farm that generates clean electricity, grows organic food, re-uses water, and creates hydrogen for zero emission vehicles with a mandate to validate new technology and the feasibility of microgrids.

Challenge

- To eliminate the farm's carbon footprint and power its operations with clean energy plus storage independent of the grid
- Utility outages and economic losses due to fires and PG&E planned PSPS

Solution

- Install distributed 48V and High Voltage PHI Batteries, solar arrays, electrolyzes and other assets to generate 100% of power to support farm operations
- Develop a microgrid site controller platform that intelligently integrates and manages with AI

Outcome

- The Stone Edge microgrid ran in island mode for 10 days in 2017 and has since maintained operations during other fires and PSPS events producing 100% of its power requirements without financial losses to farm operations
- Has become a resiliency hub for Sonoma, assisting firefighters and other emergency personnel

SimpliPhi Microgrid Deployments

Kalaeloa Airport Microgrid

The Kalaeloa Airport is used by the National Guard and needed additional power upgrades for new lighting systems and communications equipment

Challenge

- To accommodate increase in energy load and power the airport's eight hangar bays while avoiding high costs of electrical upgrades
- Avoid trenching & construction on the newly paved tarmac

Solution

- Create a 46kW microgrid using solar arrays and 80 PHI 3.4 batteries (272 kWh)

Outcome

- Avoided building out expensive T&D infrastructure to serve the ranch's remote location
- Ability to easily expand the system to accommodate new power demands as the ranch operations grow
- Never run the large generator initially installed for off grid power

SimpliPhi Microgrid Deployments

Governor Jerry Brown's Off-Grid Ranch

Governor Jerry Brown's Rancho Venada is an old family homestead entirely off-grid because there's no electrical infrastructure serving the ranch's location in Colusa County

Challenge

- To power the 2,674 square foot ranch house with renewable energy plus storage without interruption
- Integrate other loads such as car charging, pool and working barn equipment

Solution

- 14 kWh Solar PV combined with 24 PHI 3.8 kWh 48V Batteries totaling 91.2 kWh of storage
- Heila microgrid controller with intelligent manage of all assets and loads

Outcome

- Avoided building out expensive T&D infrastructure to serve the ranch's remote location
- Ability to easily expand the system to accommodate new power demands as the ranch operations grow
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SimpliPhi Microgrid Deployments

Pepco/Exelon Affordable Housing Resiliency Center

One of the first resiliency centers in Washington DC that is able to provide power for 3 consecutive days during a grid outage

Challenge

- As climate change intensifies and increases extreme weather events, studies have shown that under-resourced, low-income communities are among the most vulnerable to the socio-economic impacts

Solution

- A 70.2 kW rooftop solar array combined with 56 kWh of PHI batteries that seamlessly disconnect from the grid to provide back-up power

Outcome

- During a power outage, the Resiliency Center safely islands from the grid and runs 100% off of the SimpliPhi batteries and solar PV system
- Creates an emergency hub for community
- Saves residents $40-50 monthly through solar credits

Thank You!

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