

CITY OF MENLO PARK

# Solar-Powered Microgrid Makes Community Center Resilient and Sustainable

The City of Menlo Park lies between San Jose and San Francisco in California's Silicon Valley. The municipality is home to prosperous tech companies, but its Belle Haven neighborhood was underserved and lacked amenities found in other Bay Area communities. Long-term advocacy, and a partnership with Meta, led to the construction of the Belle Haven Community Campus. The campus includes a community center, senior center, youth center, recreational pool, and branch library. Sustainability was a key priority during development.



# Focus on Sustainability

## Microgrid to Reduce Menlo Park's Carbon Emissions

The City of Menlo Park has long been forward-thinking on sustainability, so from the outset of the project, planners looked to make the Belle Haven Community Campus (BHCC) fossil-fuel-free. The buildings are all electric-powered, and the city expects them to achieve LEED platinum certification. In addition, the community center will serve as a Red Cross shelter in the event of an emergency. City leaders wanted to achieve resiliency to grid outages without relying on diesel generators.

Menlo Park decided to build a microgrid to serve the resilient energy needs of the community center. After a thorough request for proposal (RFP) process, city leaders determined that outsourcing the microgrid's design, construction, and operations and maintenance to OPTERRA Energy Services would be cost-effective. The city and Meta partnered with OPTERRA to bring their microgrid vision to fruition.

## Comprehensive Project Includes Solar Generation, Energy Storage, EV Charging, and Solar Thermal Heating

As the community center was built, OPTERRA rolled out a 546 kW solar PV system that includes solar panels on the roof of the main community center building and on carports in the parking lot. A microgrid connects the solar system to a 367 kW/1468 kWh battery energy storage system.

Once Pacific Gas and Electric (PG&E) inspections are complete, the solar panels will charge the batteries and deliver energy to the grid, for reimbursement. During expensive peak hours, the batteries will discharge to smooth spikes in demand and reduce the BHCC's electricity costs. And in the event of a grid outage, the batteries will be able to power the entire community center building for 24 hours, or for longer if non-essential systems are turned off. If an outage lasts multiple days, a mobile diesel generator can supplement the power if necessary.

OPTERRA installed the solar panels, batteries, and microgrid components, and will manage their operations and maintenance for the next 20 years. OPTERRA also built out charging capabilities for up to 27 electric vehicles (EVs) at a time, via 12 Level 2 dual charging stations and three single-vehicle fast chargers.

Finally, the project included solar thermal collectors that run under the solar PV panels. Heat from the sun warms a liquid solution that is pumped to a heat exchanger to warm the water in the community center pool. This approach saved Menlo Park from purchasing a second heat pump for the pool, generating substantial cost savings both upfront and over time.

For this client, [OPTERRA] provided services that integrated a complex combination of technical, operational, and financial challenges. [OPTERRA] combined capital funds, energy and operational savings, Inflation Reduction Act credits, a city fund, and a local generation initiative to leverage the final solution for this project..”

– Timothy Unruh, Executive Director, National Association of Energy Service Companies, when presenting ENGIE (now OPTERRA) with NAESCO's 2024 Member Award

# Minimizing Upfront Costs

## Federal, State, and Local Incentives

OPTERRA helped the City of Menlo Park secure grants and incentives to reduce the cost of the project, including:

- **\$367,200 Self-Generation Incentive Program (SGIP)** grant from the California Public Utilities Commission for the battery system
- **\$120,000 in Peninsula Clean Energy (local community choice aggregator) rebates** for the EV charging infrastructure
- Inflation Reduction Act (IRA) projected rebate for **30% of the cost of the entire project** (approximately \$1 million)



## Path to Resiliency and Millions of Dollars in Savings

With phase 2 – which adds more solar PV panels – now under way, the project is expected to provide substantial benefits across several dimensions:



**\$6.9 million in total net savings** over 30 years, not including IRA rebate



**Nearly 1 million kWh in solar power generation** each year, minimizing reliance on fossil fuels



**Uninterrupted power in an emergency**, enabling the BHCC to serve as a certified Red Cross shelter



**Equitable access to EV chargers** makes electric vehicles more feasible for residents living in multifamily housing

# 3 Dimensions of Impact



## Saving Money

This project saved Menlo Park from purchasing a \$35,000 heat pump for the new pool. The solar and energy storage are expected to reduce utility charges by about \$268,000 per year and help bring in \$1.5 million in grants and incentives. All told, the project will pay for itself within 13 years, then provide another \$6.9 million in cost savings.



## Reducing Emissions

By generating clean onsite energy, Menlo Park avoids 125.6 metric tons of CO<sup>2</sup> emissions annually. When completed, the BHCC is expected to achieve net-zero energy consumption and reach LEED platinum certification. The publicly available EV charging stations also support cleaner transportation options for local residents.



## Supporting Community

The Belle Haven neighborhood has long been impacted by noise and air pollution from a nearby freeway. By minimizing its fossil-fuel use, the BHCC provides Belle Haven residents with recreational and community resources without further polluting the neighborhood. In addition, the microgrid will enable the community center to provide shelter and other services to residents during grid outages.

# About OPTERRA Energy Services

OPTERRA partners with public sector stakeholders to meet the unique goals of communities nationwide. Our team customizes projects with top-tier technology to deliver lasting impact, enhancing fiscal savings and community engagement. With over 50 years of experience, we ensure our customers' long-term success through tailored solutions that support their vision.

[opterraenergy.com](http://opterraenergy.com)

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