



CASE STUDY

United Power Community Battery Storage

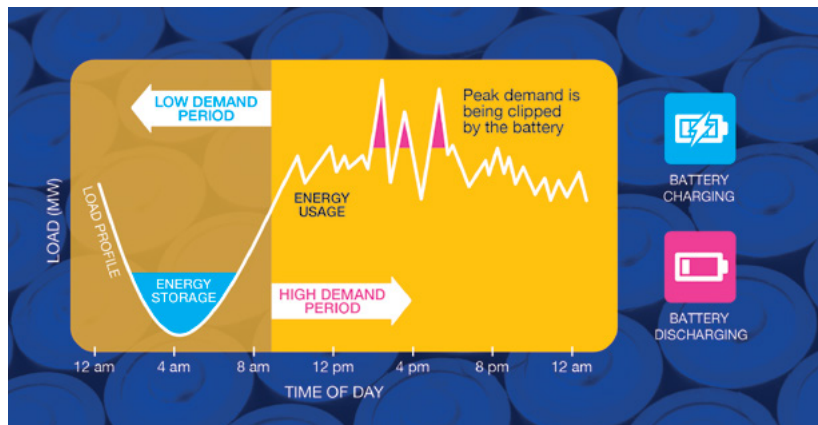
United Power partnered with ENGIE Distributed Solar to develop a grid-scale battery in Firestone, CO, and selected Tesla to supply the 4 MW/16 MWh Powerpack system. When complete in mid-2018, United Power’s battery is expected to be the largest in the State of Colorado and one of the largest owned and operated by an electric co-op anywhere in the country.

COMMUNITY BENEFITS

Immediate goals for the project include curbing demand peaks and boosting grid reliability. The battery storage system will store energy generated in the overnight hours, when demand is low, and discharge it during peak hours to reduce demand. Curbing peak demand will reduce costs and help improve the overall efficiency of United Power’s electric grid as it serves its more than 82,000 customer meters.

The Firestone system is the first of several energy storage projects that United Power will roll out, piloting an innovative “community battery” strategy, allowing users to purchase a share of the battery system’s output to directly reduce demand charges on their monthly electric bills.

United Power plans to test out how battery projects perform on the grid, to make sure the benefits match expectations. Ultimately, the goal is to fine tune the program to the community’s best advantage.



INDICATIVE PEAK REDUCTION

Achieve a more efficient demand profile through the implementation of storage



“United Power was one of the first utilities in the country to experiment with the ‘community solar’ concept with our Sol Partners program, and we were fully subscribed within weeks. Our members expect us to innovate and they want a cleaner, more reliable grid. ‘Community batteries’ are the next big trend.”

Jerry Marizza
New Business Director
United Power



“Battery costs have come down to the point where they are a viable option for distribution co-ops looking to shave peaks, defer grid investments, or, on the G&T side, integrate more renewables. It’s a win-win when creative co-ops like United Power can roll out a community-oriented revenue model.”

Luis Felipe Birolini
President, ENGIE Distributed Solar



INTEGRATING NEW TECHNOLOGY

The landscape of Colorado’s northern front range is one of the most dichotomous in the country. Look on one side of the highway, and you’re likely to see rangeland with blowing tumbleweeds—about what the area must have looked like a century ago. Look on the other side, and you may see a thousand-plus unit housing development growing out of the ground, surrounded by brand new shopping centers and even corporate office buildings, high-tech industrial plants and data centers. The Metro Denver region has one of the highest job and population growth rates in the country, and it’s all the construction industry can do to keep pace with booming demand.

United Power’s 900 square-mile service territory encompasses this region—data-centers and prairie dog colonies alike. “As one of the fastest growing co-ops in Colorado, United Power wants to stay ahead of the curve when it comes to integrating new technology that can help boost reliability and keep costs down.” said John Parker, CEO of United Power.

COLLABORATIVE PROCESS

United Power partnered with ENGIE to develop the project, which will be located at United Power’s west office on I-25, just south of Highway 119. ENGIE is a leading solar PV and energy storage developer with a special focus on serving rural electric cooperatives.

“Working with an experienced partner like ENGIE made a real difference for United Power,” says New Business Director Jerry Marizza. “The energy storage market is so new, and it’s evolving so rapidly. Having someone help us sort through vendor and technology decisions gave us confidence that we were making the right choices.”

Battery systems are designed to capture and store electricity and discharge it at a time of day that creates the most value for the customer. To do this and to find the “best bang for your buck,” ENGIE analyzes electric load profiles and utility tariffs, captures value through peak shaving, load shifting, selling ancillary services into the market and providing back-up power supply.



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