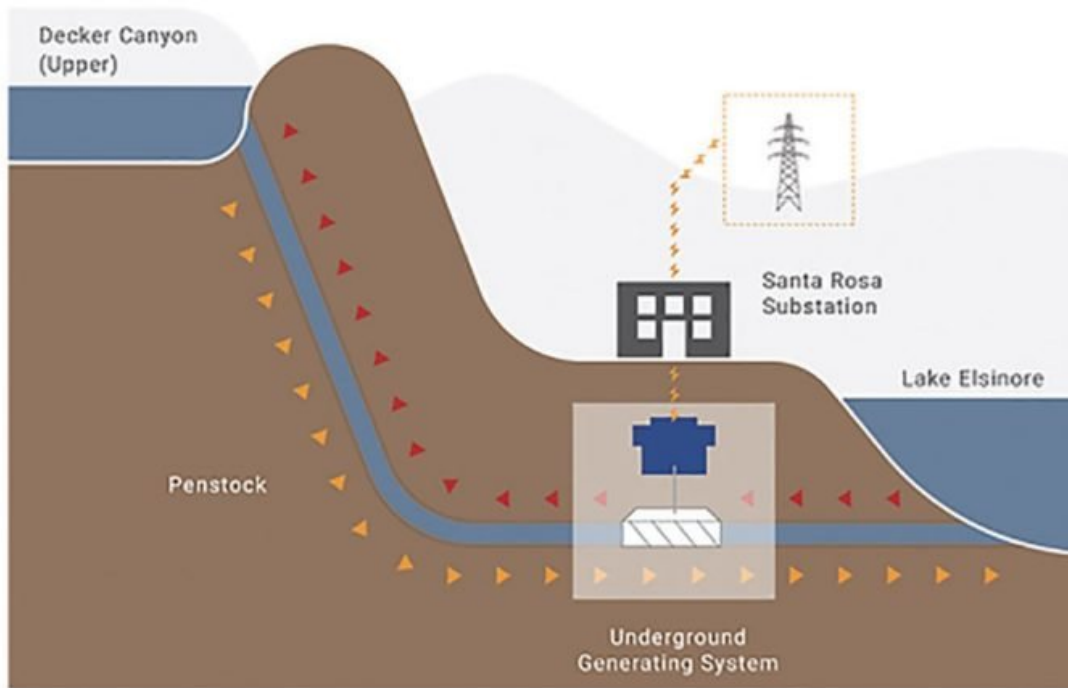


Bluewater's Renewable Energy Storage Project strives to benefit Lake Elsinore

By **Ava Sarnowski** - October 28, 2022



Water is pumped from Lake Elsinore to the upper reservoir using renewable off-peak power. During times of high demand, water is released through turbines to generate power. The circulation oxygenates the lake water and underground infrastructure minimizes local disruption and sound.

Bluewater Renewable Energy LLC is touting a solution for cleaning up Lake Elsinore, filling it with more high-quality water and stabilizing the electrical grid through their newly refashioned 500 megawatt hydroelectric renewable energy project and battery storage facility, in a recent interview with Valley News.

Paul Anderson, vice president of sustainability at Bluewater, said he is also committed to maximizing local benefits of the project and working with the community to make it the best project possible. Anderson has a master's degree in aquatic ecosystems. He explained the differences between the new Bluewater project in Lake Elsinore and the previous Lake Elsinore Advanced Pump Storage project, a hydroelectric power plant project which failed in 2021.

Bluewater has since taken over the project and, after receiving input from the community and U.S. Forest Service, has made major changes to the plan which they hope will be accepted by the community this time around and the Forest Service, he said.

Like its predecessor LEAPS, Bluewater is a pumped hydro storage project. It is designed to respond to the need for reliable, sustainable, renewable electricity to support California's emissions reduction plan; however, there have been major changes to the design. Unlike previous project iterations, the high-voltage power lines will be eliminated. Bluewater Renewable Energy Storage does not require 32 miles of 500-kilovolt overhead power lines;

instead it will use an 8.5-mile, 230 kilovolt interconnection that can be buried, through an urban route along the outskirts of Lake Elsinore. The power will no longer be shared with San Diego Gas & Electric. It will connect with Southern California Edison, Anderson said.

The changes outside the lake have been significant, according to Anderson.



Lake Elsinore is a possible new power source.

“We listened to the concerns of the residents relating to aesthetics, high-voltage lines over their neighborhoods and fire danger,” Anderson said. “The whole transmission side has been changed, as originally they had 32 miles of 500 kilovolt, high voltage transmission lines, going through the Cleveland National Forest. Upon meeting with the national forest, they understood that the configuration of the project wasn’t a problem, rather the transmission lines. The main concern with high voltage power lines is how susceptible they are to fires, especially when it is dry. The Bluewater team is determined to have the transmission lines underground.”

The upper reservoir will also receive additional storage, so that surplus water from precipitation or flooding can be stored and used for future periods of potentially extreme drought.

The timeframe for the project, however, is dependent on other agencies, as the Bluewater team aims to get their licensing in place by the beginning of 2025, according to Anderson. A multiyear construction period will follow, and conclude in the year 2030. The tunneling process and underground infrastructure will take up a majority of that time.

The Bluewater Renewable Energy Storage Project is designed to store 500 megawatts of capacity for at least 10 hours of duration. According to Anderson, it will allow their team to store renewable energy at midday when energy is most plentiful and discharge it in the evening when demand nears or exceeds full capacity and wind and solar produce less. It is enough capacity to power 400,000 homes or to charge 125,000 car batteries concurrently.

According to the Bluewater project literature, it will also mitigate the risk of blackouts through providing 500 megawatts of power to the SCE grid. It is designed to provide black-start capability, which can restore an electrical power station without external electric power, should any blackout occur.

Anderson said Bluewater is the most promising large-scale, long-duration energy storage option for Southern California and will add needed support to help achieve California's renewable energy commitments of 100% renewable power by 2045.

Pumped storage hydroelectric facilities store energy in the form of water in an upper reservoir, pumped underground from a reservoir at a lower elevation. In this case, Lake Elsinore provides the needed reservoir space. During periods of high electricity demand, power is generated by releasing the stored water through underground turbines in the same manner as a conventional hydropower station. The turbines will be located hundreds of feet underground.

During periods of low demand, the upper reservoir is recharged, refilled with water, using low-cost electricity from the grid to pump the water underground back to the upper reservoir. Invented in the 1920s, pumped storage technology remains the most efficient large-scale form of renewable energy storage, boasting round trip efficiency of over 80% and a lifespan up to 100 years. Pumped storage facilities can improve electricity supply reliability without the environmental impacts of coal, oil, gas or nuclear fueled electricity generation, Anderson said.

The project could support the energy needs of Riverside County, the greater Los Angeles area, all through providing local high capacity generation, load balancing and additional services needed for the grid's stabilization, according to the Bluewater literature provided at a recent public open house in Lake Elsinore.

Anderson said that the project will provide 600 direct union jobs, 20-30 full-time jobs for local workers and an estimated 5 million hours of employment across a five-year construction period. Other indirect benefits such as hospitality and service sectors will also be provided during this construction period.

To ensure the improvement of the lake, its stability will be prioritized, according to Anderson, who also has extensive experience specializing in environmental management. He said they are committed to keeping the level of Lake Elsinore at 1,240 feet above sea level, through annual water purchase contributions.

"Higher water levels have proven to make a difference on the lake, as each time it has fallen below that level, it suffers from significant algae blooms. The long-term viability of Lake Elsinore's water will also be ensured, as the project will provide the necessary revenue needed to buy water, to maintain healthy water levels, and improve the quality of water, achieved through oxygenation and a water treatment facility," Anderson said. "To reduce the likelihood of toxic algae blooms, something that has been a hindrance over the years, water

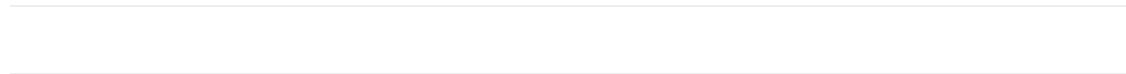
will be oxygenated on return from the upper reservoir, into Lake Elsinore. This improves aquatic habitat.”

Bluewater is a female- and minority-owned renewable energy company devoted to accelerating the energy transition through providing clean energy. Through partnering with the community for the long term, providing support and remaining transparent, Bluewater said it wishes to ensure the long-term health and viability of the waters of Lake Elsinore.

“We will strive to make this a win-win-win for Lake Elsinore, the larger electricity grid and the commitment to build and use more renewable energy,” Anderson said.

For more information, visit www.bluerenew.life.

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