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Building the future of water and energy in California: Guest commentary



Solar panels at the Inland Empire Utilities Agency wastewater treatment plant in Ontario, seen in a January 2014 file photo. (John Valenzuela/Staff Photographer)

By Joe Grindstaff

California is growing. Our population growth remains steady, as more people want to live and work here each year. And our economy continues to expand at a rate that would be the envy of many states in our nation, not to mention nations around the world.

That growth comes with responsibilities, including the important task of ensuring the people of our state can continue to rely on the water and energy supplies and

services that utilities in California provide. Water and energy utilities have long shared a symbiotic connection: the “Water-Energy Nexus.” Put simply, it takes a lot of water to make electricity and it takes a lot of electricity to pump, move and, now, recycle and reuse water.

The Inland Empire Utilities Agency (IEUA) has grown from a supplemental water source for the Chino Basin to a wholesale water supplier and regional wastewater district serving 875,000 customers. To successfully manage that growth over time, we have maintained a 66-year history of innovation and efficiency. Now, as we work to build a sustainable future, we continue to search for innovative solutions.

As part of that search, IEUA’s Board of Directors made the decision to invest in renewable generation to reduce greenhouse gas emissions, ensure energy cost savings and remove our facilities from the electric grid for peak power needs by 2020. Today, IEUA creates electricity with solar, wind and biofuel technology, producing more than half of the peak power demand for our wastewater treatment plants.

Many organizations with similar goals understand that renewable power sources can be unpredictable — the sun must be shining to create solar energy and we need wind to drive turbines. We need to be able to store the power we generate, so that it can be used when customers and the grid need it most. We have learned energy self-sustainability takes more than just making power — it takes management as well.

With this challenge in mind, IEUA has considered energy storage for our needs. Recent developments in battery technology and energy storage business models have made storage an efficient solution to our energy challenges. Borrowing from the practice of storing water in reservoirs until we need it, IEUA teamed with San Francisco-based Advanced Microgrid Solutions (AMS) to install state-of-the-art Tesla Energy batteries at our wastewater treatment plants in a first-of-its-kind system. The created “energy reservoirs” will store excess energy generated by our onsite power resources or directly from the electric grid and make it available to IEUA and the grid when needed.

A combination of battery storage and state-of-the-art analytics software is making electric grid “interdependence” between energy utilities and water agencies a reality. Interdependence means that grid system operators, utilities and

customers can help create flat, base load blocks of predictable, cost-effective electric consumption that benefits everybody.

For IEUA, the partnership with AMS was simply the next logical step in seeking additional innovative ways to serve our region and our ratepayers.

The IEUA board has recognized where the relationship between water and energy can go and has worked to take all of IEUA's renewable energy systems and have them work as a complete unit while producing cost savings and reducing our carbon footprint. IEUA is setting the pace on innovation and technology and is working to build on the water-energy nexus for future generations.

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