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Contact: Sean Sever
Energy Outreach Coordinator
Phone: 775-687-1850

Revolving Loan Funded Hydro Projects Help to Power Nevada

Most motorists driving on Highway 376 in eastern Nevada have no idea that two nearby water power plants are producing renewable energy in the dry Nevada desert. There are no solar arrays, wind turbines, or large power plants visible in the area. Water is flowing down from the mountains, however, turning a turbine in a small building and creating electricity.

Nevada Controls LLC, a Nevada contracting firm, recently used low-interest loans from the Nevada State Office of Energy's (NSOE) Revolving Loan Program to help construct two projects in Lander and Nye Counties that utilize existing streams to produce hydro power and are working on a third in Elko County.

The RO Ranch Project is a 225-kilowatt hydro plant that uses water from the North and South Twin Rivers drainages, west of Highway 376 in the Big Smoky Valley north of Tonopah. The small power plant is expected to generate an estimated 1,200,000 kilowatt hours of electricity per year.

"The water used returns back to the creek resulting in zero water consumption," Nevada Controls CEO Everett Jesse said. "We used an existing road and water pipeline, and constructed a 2.3-mile power line. An equivalent solar photovoltaic system would have required at least a two-acre area."

A similar project in the small Nevada town of Kingston is expected to produce 1,097,005 total net kilowatt hours per year. The Kingston Creek Project, north of the RO Ranch, is a 175-kilowatt hydro generation plant on private land that takes advantage of existing power lines and irrigation water flowing from a pipeline toward the Young Brothers Ranch.

As an additional benefit, the project smoothed over some difficulties between the Young Brothers and the town of Kingston. The town obtained a park restroom facility in trade for the land the power plant is on and will now be able to leave water in Kingston Creek and fill the pond in the center of their town without anyone contesting the water rights.

A third project, located at the Van Norman Burns Creek Ranch eight miles east of Tuscarora off of Highway 225, will be finished later this summer. Similar to the RO and Young Brothers, the Mill and Schmid Creek hydro projects will replace a 25-kilowatt hydro turbine the Van Normans operated for 18 years that was abandoned in 1971. These new hydro plants will be automated, require very little maintenance, and are expected to generate 301,082 total kilowatts per year.

The loans that all three projects received from the NSOE funded construction of the projects including permits, fees, design, construction, equipment, testing and commissioning. All three will sell energy they don't use back to NV Energy through power purchase agreements and one of the Van Norman projects will be net metered.

Payback of the construction loans has been through a combination of NV Energy rebates, USDA grants, and owners' equity. More than \$1 million has been paid back to the NSOE so funds can be loaned out again to more projects this summer, when the second phase of the Revolving Loan Program will begin.

"These funds will continually revolve back to our office to help get more renewable energy and energy efficiency initiatives get off the ground," NSOE Director Stacey Crowley said. "We are so excited to see these smart, efficient hydro projects working so well in rural Nevada."

In the first phase, more than \$11.4 million was allocated to 16 different projects to provide short-term, low-cost loans to developers of renewable energy projects in Nevada. According to the U.S. Department of Energy, Nevada was the first state in the nation to have 100 percent of their American Reinvestment and Recovery Act Revolving Loan funds allocated.

Six solar PV systems, four wind turbines, and three anaerobic digesters, in addition to the three hydro power projects, received loans. Learn more about the NSOE at www.energy.nv.gov.



Photo #1 Cutline: Workers help construct the Kingston Creek Hydro Project, which is fed from a year round stream source in the Big Smoky Valley.



Photo #2 Cutline: Except for this small power house and adjacent power line, passers-by would not even know the RO Ranch hydro power project existed.

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