Reviving an old energy idea with a twist in Wasco County

From 1902 to the 1950s the City of Maupin, a small town south of The Dalles, used its proximity to the Deschutes River to produce electricity for residents. Since few residents in Wasco County outside of The Dalles had electricity until the 1940s, Maupin was ahead of its time.

In 2012, Oak Springs Fish Hatchery, nine miles north of Maupin, revived the hydro-power concept and now operates its primary building with electricity produced by natural spring waters that feed the Deschutes River. What’s old is new again.

Oak Springs Fish Hatchery at 206 acres is one of the state’s largest facilities. It is operated by the Oregon Department of Fish and Wildlife (ODFW). Seven full-time employees live with their families on-site to keep the operation running 24/7.

Lyle Curtis, a third generation fish culturist, has been the manager at Oak Springs for the past 11 years. Upon his arrival at the hatchery, Curtis had a contractor scope the facility. The contractor’s report mentioned there was excellent potential for hydro-electric power production on the hatchery grounds. Curtis was intrigued, but cost prohibited him from pursuing hydro-electric production at the time.

“I recently came across an old file from the 80s that indicated someone was considering hydro-electric production at that time, too,” Curtis said.

The hydro-electric idea popped up again in 2009 when ODFW staff became aware of American Recovery and Reinvestment Act (stimulus) funding that could help the agency with energy projects. The US Department of Energy had awarded $42.1 million in federal Recovery Act funds to the Oregon Department of Energy’s (ODOE’s) State Energy Program. ODOE issued a request for proposals for energy efficiency and renewable energy projects that were “shovel ready” to put Americans to work.

ODFW staff applied for funding to install an 85 Kilowatt (kW) capacity hydro-electric project at the

Natural springs provide the water for the Oak Springs Fish Hatchery hydro-electric project. Because the water is captured after it emerges from the ground at the base of a cliff high above the Deschutes River, no fish are impacted.
Oak Springs Fish Hatchery. This time the hydroelectric project became a reality.

“We received 365 applications for the State Energy Program that were evaluated on a competitive basis,” said Trish Bunsen, ODOE project manager. “This project was well designed and is expected to minimize electricity costs for the hatchery.”

The electricity is produced by naturally occurring spring water which is renewed over time by surface rain water and snow pack that recharge the underground aquifer. ODFW modified existing piping to the hatchery which captures the spring water immediately after it emerges from the ground at the base of a cliff high above the Deschutes River so no fish are impacted.

There is enough head and flow rate from gravity suitable for generating 390,500 kWh of electricity per year. ODFW constructed a small building to protect the turbine, generator and electrical equipment. Once the water flows through the generator it continues to the fish hatchery and eventually the Deschutes River.

Oak Springs Fish Hatchery received $315,000 in Recovery Act funds and contributed $57,000 of their own funds to the project. The electricity produced is primarily used by the incubation facility or “hatch house.” Its three-phase chiller uses considerable power. The hatchery expects to save an estimated $31,238 in electricity charges annually. Site work on the project was completed in February 2012.

“The hatch house is our single biggest consumer of electricity,” said Curtis. “The hydro project has the potential to be expanded, but we have to consider how cost effective it will be.”

Curtis now has an additional $10,000 in funding from the Bonneville Power Administration to use on-site generation for the administration office and shop building. He will be completing the work in July of this year.

“The remaining facilities may not be cost effective to integrate into the system,” Curtis said. “Right now it is just wonderful to see the production we have being used on site.”

Oak Springs was constructed in phases beginning in 1922 with the last major construction completed in 1996. The facility is used for egg production, incubation and rearing of rainbow trout, as well as incubation and rearing of summer steelhead and winter steelhead. An estimated 6 million rainbow trout eggs, 500,000 rainbow trout fingerlings, 150,000 legal-size rainbow trout, 900,000 steelhead fingerlings and 110,000 steelhead smolts are produced annually at Oak Springs. The hatchery receives 75 percent of its funding from federal sources and 25 percent from state fishing license fees.

Wasco Electric Cooperative is the electric utility for the fish hatchery. ODFW had to apply for and be approved by the Federal Energy Regulatory Commission (FERC) for the project.

As with all Recovery Act projects, the hydroelectric project had to meet Buy American requirements.

“The purpose of the Recovery Act funding was to stimulate the economy,” said Bunsen. “Project owners must purchase equipment and supplies manufactured in the US and document each item. It takes time and effort to ensure that everything is actually made in the US and not just imported by a US company.”
Oregon Recovery Act projects must also pay Davis-Bacon prevailing wage or Bureau of Oregon Labor and Industries (BOLI) wages, whichever are highest. The project owners are required to provide certified payroll reports on a weekly basis to ODOE for verification.

Contractors that worked on the project included Elk Mountain Construction of Sandy, Iverson Construction of Maupin, Magnum Masonry, Inc. of West Linn, Hage Electric & Construction Services, Inc. of The Dalles, and Electric Solutions, LLC of South Beach.

The community has become aware of the hydro-electric project. A South Wasco County High School senior interested in electrical engineering has made a field trip to see the hydro-electric project and learn about the engineering design.

“He spent the day with us and toured the facility,” Curtis said. “It is really cool to see this hydro-electric project as it has no negative impact on hatchery operations and has tremendous on-site production potential. We welcome visitors.”

The best time to visit Oak Springs Fish Hatchery is June through October. Trout spawning occurs in September and October.

For more information on Oak Springs, see [http://www.dfw.state.or.us/resources/visitors/](http://www.dfw.state.or.us/resources/visitors/)

Remains of the old City of Maupin hydro-electric generating facility are on the outskirts of the Oak Springs Fish Hatchery property. The facility generated electricity for Maupin residents from 1902 to the 1950s.

The Oregon Department of Energy (ODOE) awarded this energy project with American Recovery and Reinvestment Act (stimulus) funds through the State Energy Program. These funds are designated for energy efficiency and renewable energy projects. The U.S. Department of Energy administers the funds, approves the projects and reviews the state’s progress. The Oregon Department of Energy received $42.1 million in SEP funding.

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