



Old-fashioned barn raising spirit produces something new at the Fair

In bygone years, neighbors in rural America would gather their resources and hands to “raise a barn” for a neighbor in need. Benton County residents demonstrated this same community fellowship in 2011 at the Benton County Fairgrounds, but they didn’t build any ordinary barn. They constructed a new 12,000-square-foot livestock building and Solar Education Center powered by 306 roof-top solar modules.

“This building was built in the spirit of the traditional barn raising,” said Eric Thompson, past chair of the Benton County Fair Board and current Fairgrounds Foundation member. “It is a success story of public and private partnership.”

The Benton County Fairgrounds, a 29-acre site located in a grove of oak trees outside of Corvallis, is typical of most county fairgrounds in Oregon. It has older deteriorating buildings and is run on a shoe-string budget by Benton County and the Fair Board. For the past decade, the Fair’s future has been uncertain. That is, until the community decided to “raise the barn.”

The Benton County Fairgrounds Foundation, a non-profit established in 1999 for the purpose of preserving the agrarian heritage of Benton County with a focus on youth, led the ambitious project to construct a 60-foot wide, 200-foot long, 24-foot high metal livestock building in the southwestern portion of the fairgrounds. The group spearheaded the effort to raise \$120,000 which included material donations, cash donations, and a grant from the Roseburg-based Ford Family Foundation.

More than a livestock building

In addition to providing a modern, up-to-date shelter for housing 4-H animals, the new 12,000 square-foot building also houses a 25 x 30-foot Solar Education Center and has a roof that is covered with 306 solar modules expected to produce 82,700 kiloWatt hours of electricity per year.

The solar technology and Education Center was paid for by a federal Recovery Act (stimulus) grant provided by the Oregon Department of Energy. The Energy Efficiency and Conservation Block Grant award of \$491,000 paid for all the cost of the Education Center and the solar modules. It is the second largest solar installation in Benton County.

“Our objective was to use this facility to educate the community,” said Chris Bielenberg, facilities and utilities manager for Benton County. “We’ve had lots of schools involved from Oregon State and Linn-Benton Community College to elementary schools. It’s pretty exciting.”

Inside the Education Center are 14 inverters that convert the direct electric current produced by the solar modules into alternating current that the Consumers Power utility grid can accept. Throughout the Center are numerous displays of solar

“...built in the spirit of the traditional barn raising.”
- Eric Thompson
Fairgrounds Foundation



More than 300 solar modules sit on the roof of the new Benton County Fair Livestock Building. The modules were paid for with stimulus funds from an Energy Efficiency and Conservation Block Grant awarded by the Oregon Department of Energy. The new Fair Livestock Building was paid for with funds raised by the Benton County Fairgrounds Foundation. The new building houses a Solar Education Center.





ODOE Project Manager Shanda Shribbs, left, and Director Bob Repine, right, talk with Benton County Facilities and Utilities Manager Chris Bielenberg at the dedication of the new Livestock Building and Solar Education Center June 22, 2011.

panels, posters on how solar works and two computer touch-screens that show exactly how much electricity the building's solar modules are producing. The electricity goes into the Consumers Power utility grid and is expected to produce enough to cover approximately 25 percent of the Fairground's electricity demand.

In the making for years

Bielenberg, who chairs Benton County's Sustainability Committee, said that the County had developed the concept of completing a community solar project several years ago. The County contacted local Philomath solar expert Dave Eveland, director of commercial project sales with SunWize Technologies, who has a Masters Degree in mechanical engineering. The concept was to have a solar project that included an educational area to demonstrate the technology. The project, however, had to go onto a "hold" status as the County felt the impact of the economic recession.

Then, opportunity knocked. President Obama announced the Recovery Act in 2009 and the Oregon Department of Energy received \$9.6 million for projects that promoted energy efficiency and renewable energy resources. The Oregon Department of Energy put out a call for qualifying energy projects that were ready to implement. The Fairground's solar project was "shovel ready" and just waiting for such an opportunity. Bielenberg jumped to action and sent in the application by the December 15, 2009 deadline.

By February 2010, the Oregon Department of Energy awarded 62 public entities funds for their energy projects

that reduced fossil fuel emissions, reduced total energy use, and improved energy efficiency in the transportation, building and other appropriate sectors. In addition, the funds had to spur economic growth and create and/or retain jobs.

The Benton County Fairground's solar project proposal stood out from similar proposals, according to Oregon Department of Energy Director Bob Repine, because of the educational component.

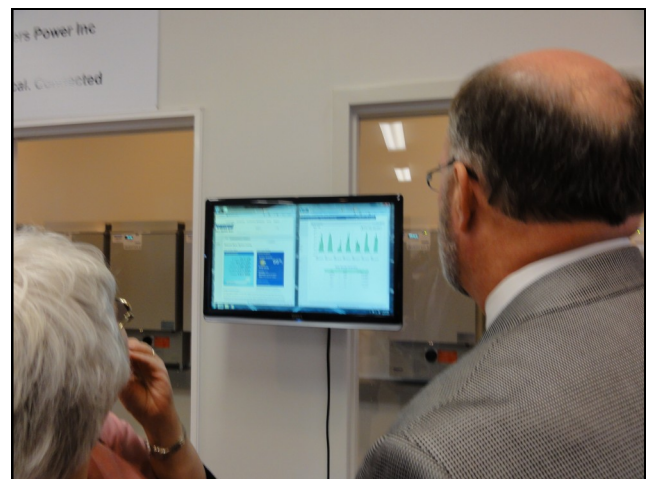
"The federal government had to approve all the sub-recipients and they really liked the educational component of this project," Repine said. "This is a great model of how we can train the next generation. Solar will be something they embrace."

Jobs

For Dave Eveland and other contractors, the federal award for the Benton County Fairground's solar project meant work.

"Every job helps," Eveland said. "Benton Electric had four of their workers on this job for two to three months. T. Gerding Construction had two workers for two months. We had an engineer working part-time for over a year, a project manager part-time for six months, a project administrator part-time and a superintendent on site for three months." Other contractors on the project included JB Insulation of Lowell and Ramm Painting Inc. of Albany.

In addition, the 14 inverters that produce the electricity were manufactured by PV-Powered, a Bend, Oregon company that has since expanded to a second site



ODOE Project Manager Shanda Shribbs, left, and Director Bob Repine, right, view the "real time" electricity production of the solar modules on the roof of the new Benton County Fair Livestock Building.



Fourteen inverters from Bend-based PV-Powered convert the direct electricity into alternating current for the Consumers Power utility grid.

in Colorado Springs. The modules were manufactured by Solon, a German company that established a manufacturing operation in Tucson, Arizona so its products could meet the Buy American requirements.

According to Shanda Shribbs, Oregon Department of Energy project manager for the Fairgrounds project, Recovery Act project owners must document that all manufactured goods are made in America. This is to ensure that the funds not only put contractors to work, but also US manufacturers.

Eveland says that the Buy American requirement “is a challenge.” He had to look at all components of the solar arrays to ensure that they met the specification. He noted that he had some trouble locating an American company that manufactured aluminum rails to mount the arrays and offered it at a cost he could afford. He found Professional Solar Products, a California firm, which automated its production with a crew of 20 to offer an American-made, quality product at a very competitive cost.

For Eveland, who founded a small solar installation company several years ago in Philomath, and has since rolled his company into the national firm, SunWize, the Recovery Act awards have brought in a number of major jobs for SunWize.

“We’ve grown from two to six employees (in Western US commercial solar project sales) during the economic downturn because of Recovery Act funding,” Eveland said. “It’s very tangible.”

Producing energy

The solar array at Benton County Fairgrounds will produce 82,700 kiloWatt hours of electricity, enough to power seven average Oregon homes a year. The electric production will help avoid 1,138,376 of greenhouse gas emissions, the equivalent to reducing automobile travel by 121,724 miles or planting 7.7 acres of trees. The energy produced will save the Fairgrounds more than \$4,200 per year.

The Solar Education Center will provide hundreds of students with an opportunity to learn how the sun’s energy can be turned into electricity. Lonny Wunder, Benton County Fairgrounds manager, is in charge of developing the curriculum for the Solar Education Center.

The Fair’s new Livestock Building with its solar technology and Education Center was created by public and private stakeholders and successfully joined traditional values with modern technology.



Solar panels on display at the Solar Education Center.

The Oregon Department of Energy (ODOE) awarded this energy project with American Recovery and Reinvestment Act (stimulus) funds through the Energy Efficiency and Conservation Block Grant Program (EECBG). The U.S. Department of Energy administers the funds, approves the projects and reviews the state’s progress. The Oregon Department of Energy received \$9,593,500 in EECBG funding. The period of performance is September 28, 2009 through September 27, 2012.

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