



Baldock Solar Highway Project Frequently Asked Questions August 2011

What is the Baldock Project?

The Baldock Solar Highway Project is a 1.75 Megawatt direct current solar array under construction at the Baldock Safety Rest Area – enough solar panels to annually generate up to 1.97 million kilowatt-hours of clean, renewable energy.

Where is the site?

The Baldock Safety Rest Area is south of Wilsonville on Interstate 5 in Clackamas County, and the solar site is about 7 acres of vacant ODOT property on the east side of the northbound rest area.



Aerial photograph of the vacant Baldock Solar Highway Project site

Why is this location a good site for a large solar project?

- The site is on transportation system property owned by ODOT with access to utility interconnection.
- It has exceptional solar access in the utility service area where ODOT has its greatest electricity needs.
- It is flat, vacant and has soils that drain well.
- It has safe public access and parking so people can learn more about solar power and the Oregon Solar Highway Program.
- The site does not contain any sensitive environmental species or other issues of concern.
- It does not impact any active farm uses on the site or adjacent lands.

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Will these panels create problems for freeway users, farmers or pilots from the Aurora Airstrip?

No. If you look for it, you will be able to glimpse the project from the freeway, but it won't be readily visible. The potential for glare from solar panels has been carefully studied over the years, with the conclusion that it is not a distraction for drivers or aircraft pilots. For example, one study showed no difference in driver behavior along an English roadway after solar panels were installed. Solar panels have been installed at airports including Denver, Long Beach, Fresno, San Francisco and other locations, demonstrating confidence by the Federal Aviation Administration that glare is not an issue. In fact, solar panels are designed to absorb sunlight, not reflect it, to produce energy.

What permits were required to build the project?

- Conditional Use Permit for a Commercial Utility Facility
- Grading Permit
- National Pollutant Discharge Elimination System (NPDES) Permit
- Electrical Permits
- Building Permit

What preparation was needed to make the site ready for the project?

- Minimal clearing and grading of the site was performed and construction fencing was installed around the project boundary.
- Construction access is from state route 551 to the east of the site.

What's the timeline?

Construction activities started mid-August 2011, and the project is expected to be placed in service early in 2012.

How many panels will it take to make a 1.75 Megawatt solar array?

It takes 6,994, 250-watt panels to make up a 1.75 Megawatt solar array. The solar array is designed to produce the most solar energy at the lowest cost on the available site.

An array this size in Oregon's Willamette Valley can generate up to 1.97 million kilowatt-hours a year of clean, renewable electricity, the equivalent of nearly 12 percent of ODOT's electricity need in the Portland General Electric service area.

How is the Oregon Travel Information Council (TIC) involved with the Baldock rest area?

In 2009, the Oregon legislature granted TIC \$3 million per year to improve and maintain nine rest areas on I-5 and I-84 including the Baldock site. ODOT and TIC have executed an interagency agreement which includes the solar project at Baldock. While TIC isn't directly involved in the solar project, its work developing Baldock into a state-of-the-art "sustainable safety rest area" supports the Solar Highway vision for a clean energy future.

What about security?

TIC will continue to provide security at the safety rest area, and the measures put in place for the solar project will help support those efforts, including fencing, video cameras, signage, and a 24-hour security response service.

What will electricity generated at this site be used for?

From the moment the array is connected to the grid, the Baldock Safety Rest Areas both north and southbound will be powered by renewable energy. This is because ODOT will own a portion of the Renewable Energy Certificates (RECs) for the project, which certify the ownership of green power.

These RECs allow ODOT to state that a portion of the energy produced is used for the operation and maintenance of the State Highway system – including powering the Baldock Safety Rest Areas.

Does Oregon have enough sunshine for solar to work?

Yes, solar energy is the most abundant renewable energy resource in Oregon. According to the *Renewable Energy Atlas of the West*, Oregon has a 68 million Megawatt-hour solar generation potential and could generate its annual energy use of 48 million Megawatt-hours with partial development of these resources. See: <http://www.solaroregon.org/learn/oregon-solar-resource>

What are the economic and financial considerations?

- A solar array of this size is estimated to create or sustain between 60 – 70 direct and indirect jobs.
- It will cost approximately \$10 million to build this 1.75 Megawatt project, and these costs would be paid for through a partnership similar to the one that paid for

the nation's first solar highway project at

the I-5/I-205 interchange. It involves private financing, tax credits and public investment.

- The Oregon Solar Highway initiative reflects state and national energy policy direction to develop sustainable energy resources.



Conceptual layout of the Baldock Solar Highway Project - "Made in Oregon"

"Made In Oregon"

This is an all-Oregon project. Oregon companies will supply the materials, and design, install, operate and maintain this project, which will be only the second solar highway project in the nation. The Baldock Solar Highway Project showcases what can be accomplished through creative, responsible partnering between the public and private sectors.

- SolarWorld in Hillsboro will supply solar panels and Advanced Energy of Bend will supply inverters.
- The project is being designed, constructed and installed by Oregon firms:
 - Aadland Evans Constructors Inc. of Portland, general contractor;
 - Moyano Leadership Group Inc. of Salem, project manager and design leader; and
 - Advanced Energy Systems, solar power specialty designer and installer, and Good Company, environmental and sustainability consulting, both of Eugene.

Where else might ODOT place solar highways in Oregon?

ODOT is looking at ODOT-owned property around the entire state. The goal is to explore as many opportunities as possible for developing renewable resources to power the transportation system with 100 percent green power.