

**HOOD RIVER**  
*Turtle Island's transition*

**MAKING MUSIC**  
*Vinyl shops on the rise*

**THE DALLES**  
*Progress in River City*

# OregonBusiness

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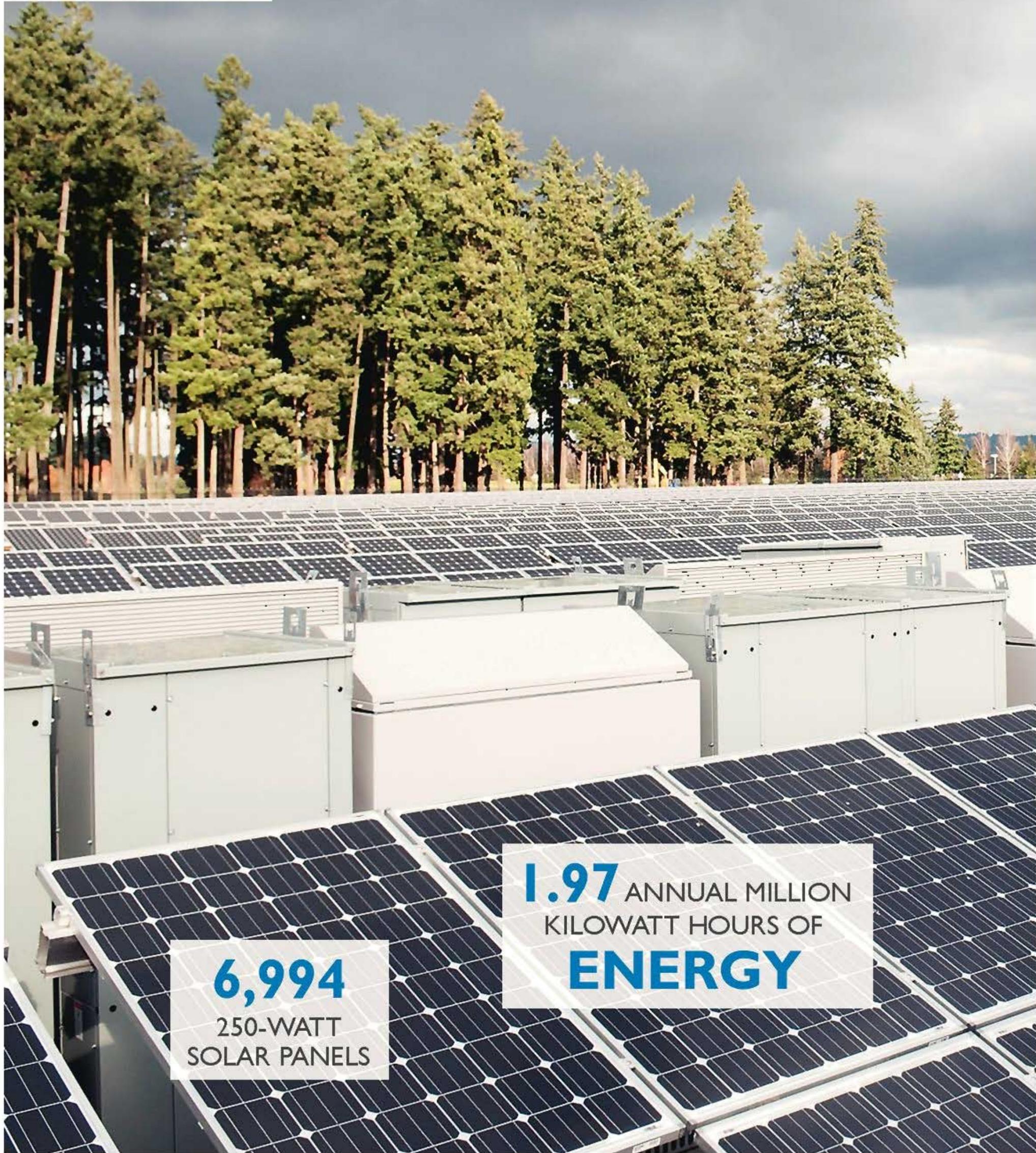
**CONSTRUCTING  
THE SOLAR HIGHWAY**

*Documenting the building  
of the Baldock project*

**REEL  
SUCCESS**

*Oregon's film and TV  
industry is growing up*

**NOV. 30, 2011:** Under a stormy sky, the sun shines on the nearly completed array.



**6,994**  
250-WATT  
SOLAR PANELS

**1.97** ANNUAL MILLION  
KILOWATT HOURS OF  
**ENERGY**

# REACHING FOR THE SUN

Photography by  
**MATTHEW GINN**

Driving headlong on Interstate 5 past the Baldock rest area south of Wilsonville, you catch a glimmer out of the corner of your eye that looks a little like shimmery water in the middle of farm fields. Unless you stop to get coffee or stretch your legs, and then make your way to the back of the rest area, you'll likely miss the fact that the shimmery thing is almost 7,000 solar panels. Years of planning, many partnerships and \$10 million have created the 1.75-megawatt Baldock Solar Highway Project, the second project developed under the Oregon Solar Highway Program and the largest of its kind in the nation. The array at the I-5/I-205 interchange was the nation's first solar highway project. Construction on the Baldock project began Aug. 23, 2011, and the array went online Jan. 17, 2012. In between, we documented how a unique solar project was built.

**CO<sub>2</sub>** OFFSET: AS OF AUG. 22, 2012,  
EQUAL TO **25,074** TREES



**AUG. 23, 2011:**  
Federal Highway  
Administrator Victor  
Mendez signs a  
commemorative solar  
panel as Energy Trust  
board president John  
Reynolds and PGE  
president and CEO  
Jim Piro look on.



**17,000**  
FEET OF CONDUIT



**BOB PYRITZ**

General foreman,  
Aadland Evans Constructors

“It was a fun project.  
It ended up being a  
nice-looking project.  
The lines are straight;  
everything runs  
smooth.”



**18,000** STEEL  
PILES



**OCT. 18, 2011:**

Surveying continues (left) while installation of the inverters begins.



**12,500**  
FEET OF  
TRENCHING  
USED FOR  
CONDUITS

**6** INVERTERS, WEIGHING  
BETWEEN **3,000** AND  
**5,000** POUNDS



**SEPT. 22, 2011:** The ground is excavated (above) so that conduit can be installed. Then concrete pads will be built on top, upon which the inverters will be placed. Kevin Tuom lays conduit (right).



**NOV. 8, 2011:** Russ Ryan, Jocelyn Atkins and Traci Sullivan install solar panels. Out of 6,994 solar panels, only four were broken on-site during installation. Bob Pyritz (at right) operates a backhoe in a sea of support frames.



## JIM BEHRMAN

General foreman,  
Christenson Electric

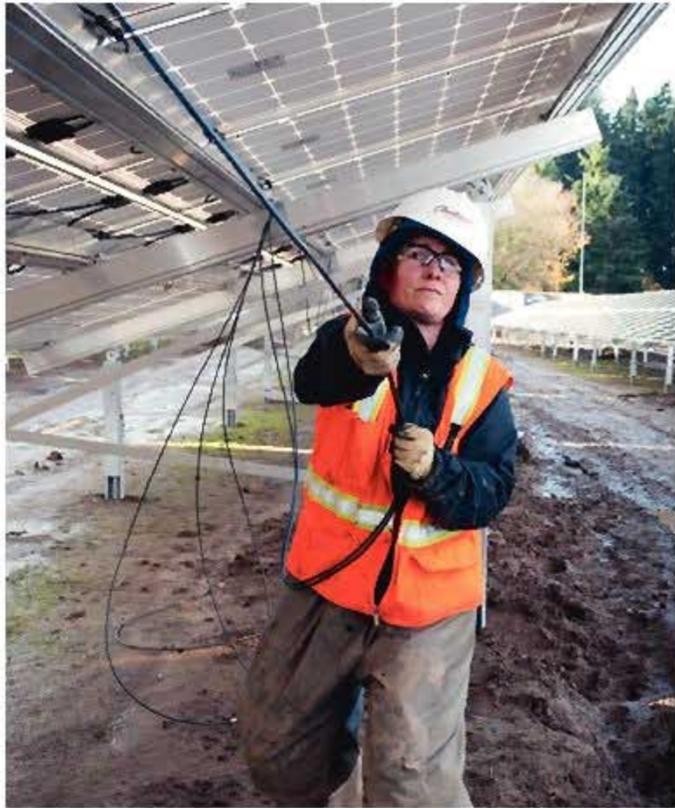
“That’s the first project like that I’ve done. The size of it was pretty impressive.”



**55,000** FEET OF WIRE IS USED  
IN THE COLLECTION SYSTEM, WHICH  
GETS THE **ELECTRICITY**  
TO THE INVERTER

**NOV. 30, 2011:**

Traci Sullivan pulls PV wire for panels. The rows are about 700 feet long; about 4,200 feet of wire is used per row.



**JAN. 16, 2012:** Bob Pyritz, Jim Behrman, Jerry Henderson of Energy Trust of Oregon and Ken Den Ouden with Advanced Energy Systems inspect the array.



## MARK OSBORN

Smart grid manager, PGE

“We were very happy with how it turned out. The team that built it was very careful. It really is beautiful. The black solar panels from SolarWorld look nice. It will be a really neat tourist destination.”



**538** SOLAR RACKS

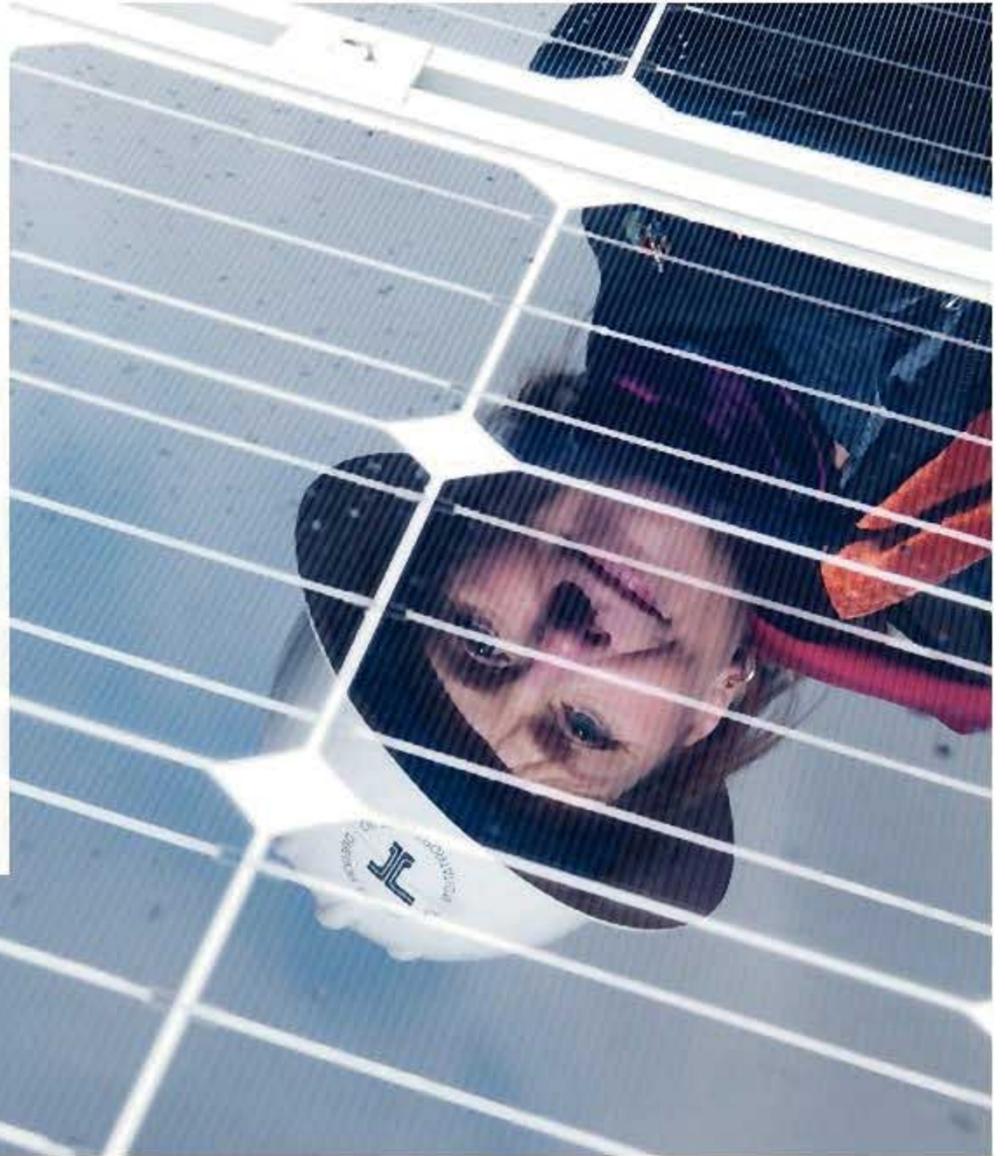


**NOV. 30, 2011:** PGE's Mark Osborn addresses a delegation from China's Guangxi environmental agency. The group was looking for ideas on environmental protection and renewable energy. About 34 states and 14 countries have inquired about the Baldock project.

## ALLISON HAMILTON

Solar Highway program manager, ODOT

"I like Baldock a lot because it makes solar energy accessible to people. The solar panels are beautiful, silent. They are lovely. They are wonderful neighbors. They will help people realize that this is cool, that maybe I want this in my backyard."



**30** VOLUNTEERS INSTALLED **400**  
PLANTS IN **90** MINUTES



**AUG. 23, 2012:** Allison Hamilton and Mark Osborn dedicate the array one year after starting construction. A facsimile of the solar panel signed at the groundbreaking is on permanent display.



**MAR. 24, 2012:**  
Sheng surveys the sustainable garden planted in the "hell strip" between the two security fences.

## SHERRY SHENG

OSU Extension master gardener

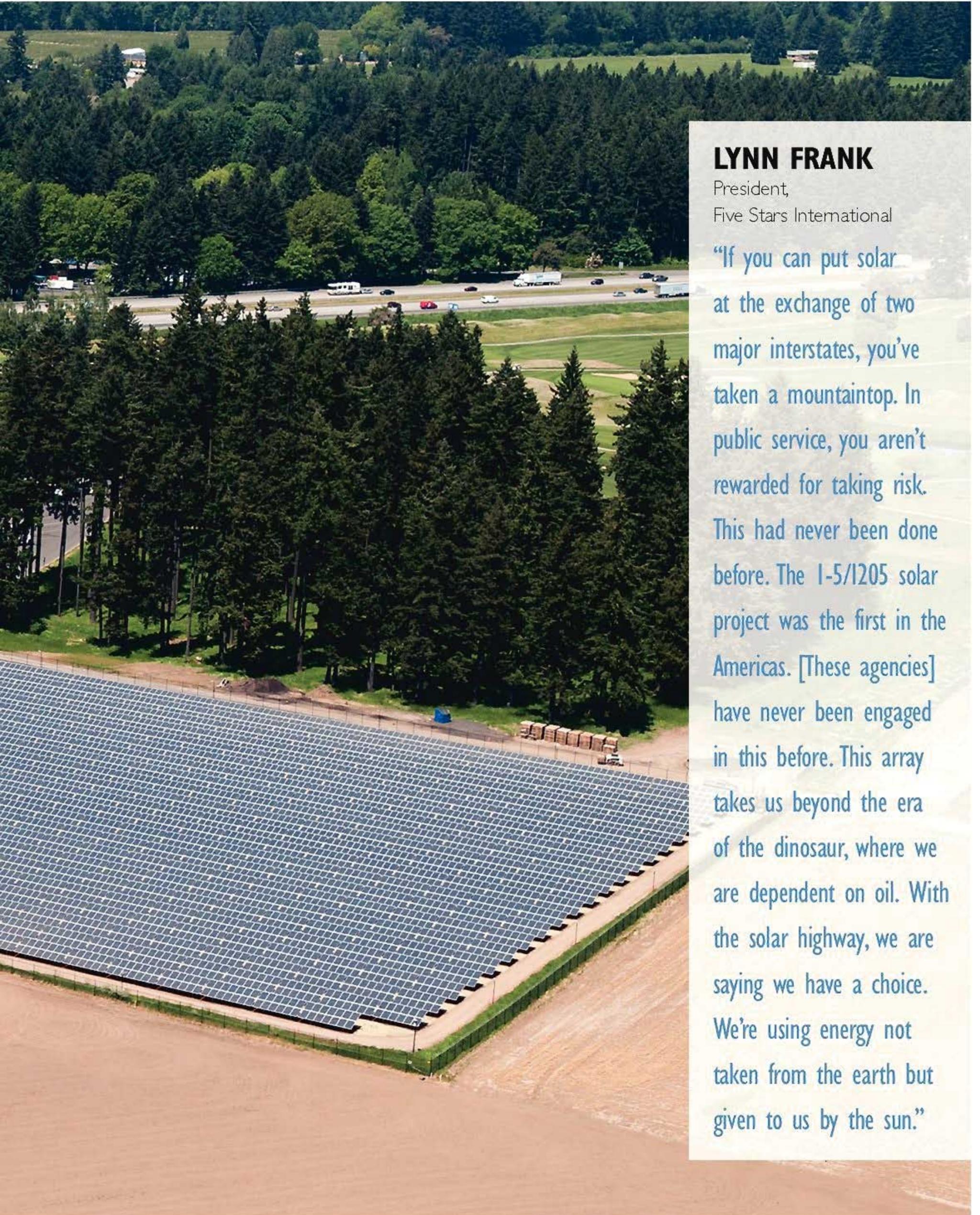
"Designer Maurice Horn of Joy Creek Nursery tried to work in yellow to suggest the sun and silver foliage to suggest a reflective surface. It will give people the message that you're in the presence of solar power."

# HOW THE POWER FLOWS

The power from groups of solar panels goes into a collector panel on the racking system, which then feeds back to DC switchgear cabinets. The DC switchgear cabinet is then connected to a solar inverter that converts the DC power coming from the solar panel to AC power. The power then goes into an AC switchgear cabinet that feeds out to a PGE 2000KVA transformer.

## KEY PROJECT PARTNERS

- Aadland Evans Constructors, Portland: general contractor
- Advanced Energy Industries/PV Powered, Bend: designed, built inverters
- Advanced Energy Systems, Eugene: solar-power designer, installer
- Bank of America: financing, along with PGE's Clean Wind program and the state's Business Energy Tax Credit program
- Christenson Electric, Portland: electrical contracting services
- Energy Trust of Oregon: utility incentive funding
- Five Stars International, Salem: consulting
- Good Company, Eugene: greenhouse gas analysis
- HatiCon Solar and SAPA Group, Portland: panel support frames
- Moyano Leadership Group, Salem: project manager, design leader
- Oregon Dept. of Transportation: provided 7 acres of land
- PGE: builder, operator of the project
- PHC Northwest, Portland: security lighting
- Sea Reach, Sheridan: interpretive display signs
- SolarWorld, Hillsboro: supplied the solar panels



## LYNN FRANK

President,  
Five Stars International

“If you can put solar at the exchange of two major interstates, you’ve taken a mountaintop. In public service, you aren’t rewarded for taking risk. This had never been done before. The I-5/I205 solar project was the first in the Americas. [These agencies] have never been engaged in this before. This array takes us beyond the era of the dinosaur, where we are dependent on oil. With the solar highway, we are saying we have a choice. We’re using energy not taken from the earth but given to us by the sun.”