



MANUFACTURERS TAP THE SUN FOR CLEAN, RENEWABLE POWER

SOLAR ELECTRIC HELPS MEET SUSTAINABILITY GOALS, WHILE LOWERING ENERGY COSTS



Between the second quarter of 2011 and the second quarter of 2012, the average price of a completed commercial PV system fell by nearly 14 percent.

The economics of PV have become so attractive that many of the best managed corporations, which are synonymous with low cost and efficiency, are adopting solar energy on a massive scale across the U.S.

Solar provides predictably priced electricity for 20 to 30 years. This hedge against utility price volatility is highly valuable to businesses that are focused on managing long-term budgets.

– Solar Energy Industry Association, SEIA

Industrial facilities increasingly look for opportunities to reduce their carbon footprint and make a positive environmental impact. Two manufacturers—Oregon Iron Works and Knife River—turned to solar electric as a solution for boosting sustainability and reducing energy costs. For them, the combination of rising utility costs, decreasing solar-equipment costs and the long expected life of solar technology made solar power an appealing investment. Cash incentives from Energy Trust of Oregon helped reduce their net cost and payback time. When solar power is coupled with energy efficiency upgrades, also supported by Energy Trust, the positive impacts are even greater.

Generating your own solar power can be a smart long-term decision. After you recuperate your initial project cost, the system will continue generating free renewable energy for decades to come.

Incentives and purchase plans help solar pencil out for industry

As solar-equipment costs have dropped, the incentives or financing options to install solar have changed to meet the interests of the market. Energy Trust offers technical assistance, access to a network of qualified solar trade ally contractors, and cash incentives that can cover up to 35 percent of project costs to industrial customers wanting to tap into the sun. Customers may also want to pair their Energy Trust cash incentives with a federal tax credit that covers an additional 30 percent of the cost and includes an accelerated equipment depreciation schedule—making the capital cost to install solar very affordable. For companies willing to put in some extra effort, there may also be additional cash grants available from Oregon Department of Energy and the U.S. Department of Agriculture. If a capital investment isn't an option but your company is interested in adding solar electricity to your operation, there are solar companies that offer lease and power purchase options for little to no upfront cost. Energy Trust can provide you with the information you need to decide whether a solar electric installation fits your plans.



STEEL AND METAL FABRICATOR BUILDS SOLAR ELECTRIC INTO ITS OPERATION

After slashing its annual energy consumption by 1 million kilowatt hours through energy-efficient upgrades to lighting, welding and compressed air equipment, Oregon Iron Works, Inc. was looking for new ways to cut energy use and costs at its Clackamas campus. The steel and metal fabricator found the answer directly overhead. By installing a 30.8-kilowatt solar electric system, Oregon Iron Works, which manufactures complex structural components and equipment used in bridges, aerospace, mass transit and other industries, trimmed annual energy use by another 30,754 kWh.

“Going solar was a natural continuation to our investment in energy efficiency,” says Paula Bowman-Paradis, sustainability coordinator, Oregon Iron Works. “Generating our own renewable power keeps the savings coming in and supports our growing sustainability program.”

The ground-mounted system has a net meter that allows Oregon Iron Works to feed any excess power that it can't use back into the electric grid, resulting in a credit on the company's monthly bill from Portland General Electric. And, of course, Oregon Iron Works still receives all the power it needs from PGE.



Our leadership is committed to sustainability, so solar electric made sense for us. And the cash incentive from Energy Trust made it an easy sell to decision makers.

Paula Bowman-Paradis, sustainability coordinator
Oregon Iron Works



OREGON IRON WORKS

PROJECT-AT-A-GLANCE

Equipment installed

- 30.8-kW ground-mounted, solar electric system

Financial analysis

- \$208,522 project cost
- \$38,426 cash incentive from Energy Trust
- \$1,847 estimated annual energy cost savings

Estimated annual savings

- 30,754 kWh
- 12 tons of carbon dioxide

EARLIER PROJECTS

Energy-efficient welders

- \$117,400 total project cost
- \$58,700 cash incentive from Energy Trust
- 383,640 kWh estimated annual savings
- \$23,038 estimated annual energy cost savings

Compressed air system improvements

- \$27,371 total project cost
- \$16,276 cash incentive from Energy Trust
- 104,841 kWh estimated annual savings
- \$6,296 estimated annual energy cost savings

Energy-efficient lighting upgrades

- \$316,210 total in project costs
- \$133,459 cash incentives from Energy Trust
- 568,566 kWh estimated annual savings
- \$34,142 estimated annual energy cost savings

AGGREGATE PRODUCER ADDS SOLAR POWER TO THE MIX

Knife River Corporation, one of the nation's largest providers of aggregate, ready-mix and asphalt-based construction materials, opted for solar electric to help power the office and quality control lab at its Central Point aggregate plant. The company is committed to using natural resources efficiently and to minimizing the environmental impact of its activities. As part of that commitment, Knife River looks to its employees to conserve resources and promote sustainable business practices. It was through that employee initiative that Central Point came to have a solar system.

David Badger, who at the time was purchasing agent for the site, was charged with achieving cost savings wherever possible, including trimming high electricity bills. "I'd just installed a solar electric system at home and was enjoying the savings," says Badger. "Because the furnaces and ovens in our quality control lab are all electric, my mind immediately went to solar power." Badger researched the details of installing a 29.5-kW ground-mounted system, including using a third-party company that installed, owns and operates the system. A \$44,280 cash incentive from Energy Trust helped reduce the total system cost, helping secure approval for the plant to move forward.

"We're very happy with the system, and in some months we are offsetting 65 percent of the electricity used in the lab," says Badger, who is now the plant's quality control technician.

All told, Knife River has invested more than \$510,210 in energy efficiency at eight Oregon locations, including energy-efficient lighting and motors, compressed air improvements, variable frequency drives and a second solar electric system. With \$34,520 in savings, Knife River is demonstrating that being a good steward of the Earth can have a positive financial impact.



KNIFE RIVER CORPORATION

PROJECT-AT-A-GLANCE

Equipment installed

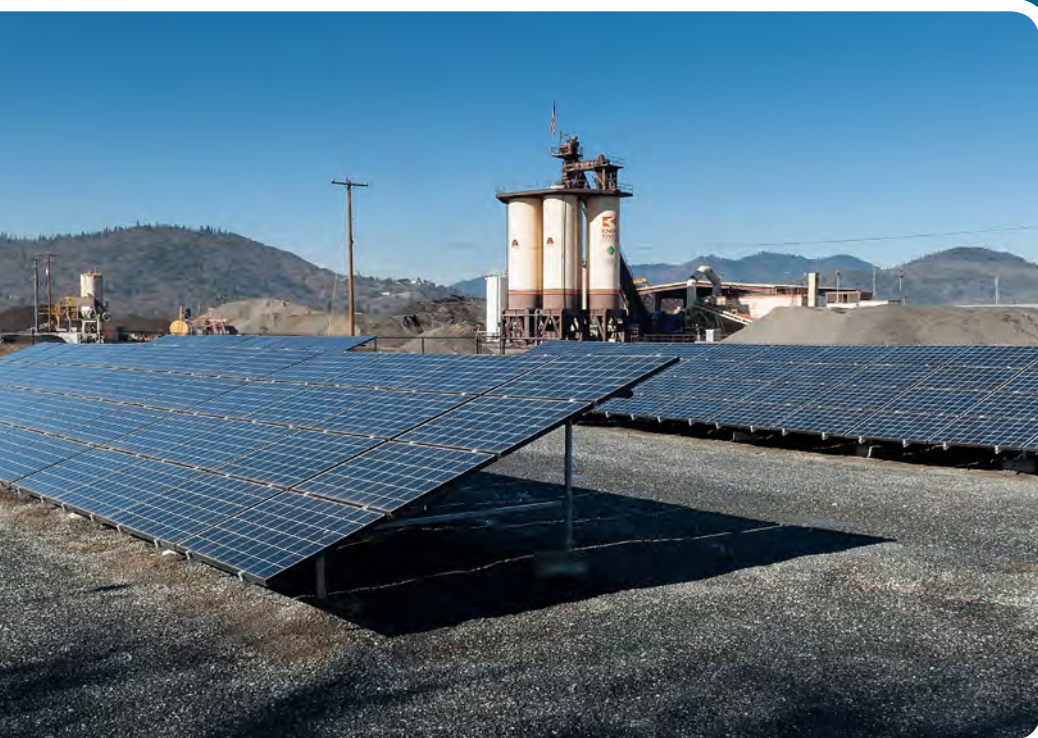
- 29.5-kW ground-mounted, solar electric system

Financial analysis

- \$191,880 project cost
- \$44,280 cash incentive from Energy Trust
- \$2.270 estimated annual energy cost savings

Estimated annual savings

- 37,797 kilowatt hours
- 14 tons of carbon dioxide



Energy can make up a significant portion of a business's operating costs. Companies are installing solar at record rates because it reduces operation expenses, improves their bottom line, and allows them to focus resources on their core business strategies.

– SEIA

OTHER PROJECTS AT KNIFE RIVER'S CORPORATION OREGON SITES

**Energy-efficient lighting;
improvements to compressed air,
fan and motor systems; and a second
11.8-kW solar electric system**

- 204 tons of carbon dioxide saved annually
- \$318,330 total project cost
- \$103,336 cash incentive from Energy Trust
- 537,065 kWh estimated annual savings
- \$32,251 estimated annual energy cost savings



Our experience with solar electric has led to installations at other facilities, including at other companies owned by our parent company, MDU Resources Group, Inc.

David Badger
quality control technician
Knife River Corporation—Central Point



Take control of your energy costs. Visit **www.energytrust.org**
or call **1.866.368.7878**.