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Oregon's solar future could hinge on copying Germany

By Amy Hsuan, The Oregonian February 19, 2010, 7:52PM



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In Germany, a decade of national policies and billions in government subsidies fuel a burgeoning solar industry, creating 230,000 jobs and putting it on track to lead the world's emerging - and lucrative - clean-tech

Solar incentives in Oregon

Similar to the German model, Oregon is close to launching a feed-in tariff, which would require utility companies to buy electricity from owners of solar systems. It guarantees a set price over a length of time, eventually covering the cost of the system, encouraging consumers to buy solar panels.

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It's a dream scenario for Oregon leaders, in a high-stakes bid to grow their own "solar forest." And they intend to follow Germany's path - practically step by step.

In the coming months, Oregon will test a new incentive program that takes after the German subsidy called a feed-in tariff, which requires utility companies to pay residents for generating electricity on rooftop solar systems.

Businesses, too, will be able to tap into the perk, which could provide a return over 15 years for investing in solar, still one of the most expensive forms of energy around.

Already, hundreds of millions of dollars in tax credits are riding on businesses such as SolarWorld, a leading German manufacturer with North America's largest solar plant, in Hillsboro.

But with cutthroat competition from other U.S. states and China, Oregon's copycat effort to dominate the global race may be too little, too late.

It will be several years before enough solar systems are installed in Oregon to make a dent in the global market. Governments elsewhere already are scaling back the rich incentives that have been a lifeline for the industry, dimming Oregon's chance to shine.

And ratepayers will be left with the bill for years to come.

Still, Oregonians can look to Germany to see where this green gamble might end up.

"If you talk about solar, you talk about Germany," said Oregon Gov. Ted Kulongoski, whose visits there shape a sun-powered vision. "We may never emulate Germany, but the economics of it is something to learn from."

A machine at work inside the SolarWorld factory

Cutting off the money

Oregon's feed-in tariff plan comes as Kulongoski faces criticism for his green tax incentives. This month, state lawmakers voted to scale back the BETC program, spurring debate about the value - and cost - of subsidies for renewable energy.

"There are costs involved in this," Kulongoski said. "Unfortunately, fossil fuels are cheaper. But in the long term, renewable energies will be cheaper for consumers."

In Germany, a similar debate unfolds. As the nation struggles with a record deficit, government leaders want to slash the feed-in tariff by up to 15 percent as soon as April, citing too much of a good thing.

But members of the German solar industry association, now 800 members strong, say it

The Public Utility Commission will finalize details, including rates and contract terms, in the coming months. State leaders hope to roll out a pilot program by July 1.

Who can participate in Oregon?

The pilot program is for 25 megawatts to start, enough for 5,000 homes or 500 businesses. There will be a percentage reserved for residences and small and large businesses.

What are the rates?

No rate has been set yet, but proposals peg the rate at less than 80 cents per kilowatt hour, which will gradually reduce over time as solar panels get cheaper. In addition, residents will be paid only for the excess electricity they produce, not the amount they consume. The payment will probably show up in their utility bill in the form of a credit.

What incentives for solar currently exist?

An average residential system produces about three kilowatts and costs \$20,000 to \$27,000. Current Energy Trust rebates and state and federal tax credits could reduce the price to \$4,000 to \$10,000. But you can not use the existing incentives if you're going to participate in the feed-in tariff.

--Amy Hsuan

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would kill the industry's momentum at a time of fierce competition with Chinese manufacturers trying to make a play for the U.S. market.



Without the incentive, SolarWorld could lose its largest customer, Germany, which would have a ripple effect on Oregon.

"It won't cripple the market," analyst Kann said. "But everyone will be impacted by the German feed-in tariff cuts. The solar industry worldwide will feel it."

Analysts say 2010 will be better than last year, but the loss of government incentives could mean the solar industry has to survive on its own.

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Posted by **blackotter1**

February 19, 2010, 8:12PM

the key word "subsidy" could turn into that old song of the "50s. TRAGEDY. just remember when you have subsidies that means somebody else has to pay those taxes. "YOU AND I."

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OREGON'S SOLAR FUTURE

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AMY HSUAN/THE OREGONIAN

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Can Oregon ride solar technology to prosperity? Germany's incentive model could show the way

By AMY HSUAN
THE OREGONIAN

Freiberg, Germany —

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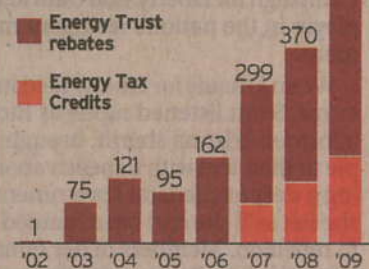
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Oregon solar incentives

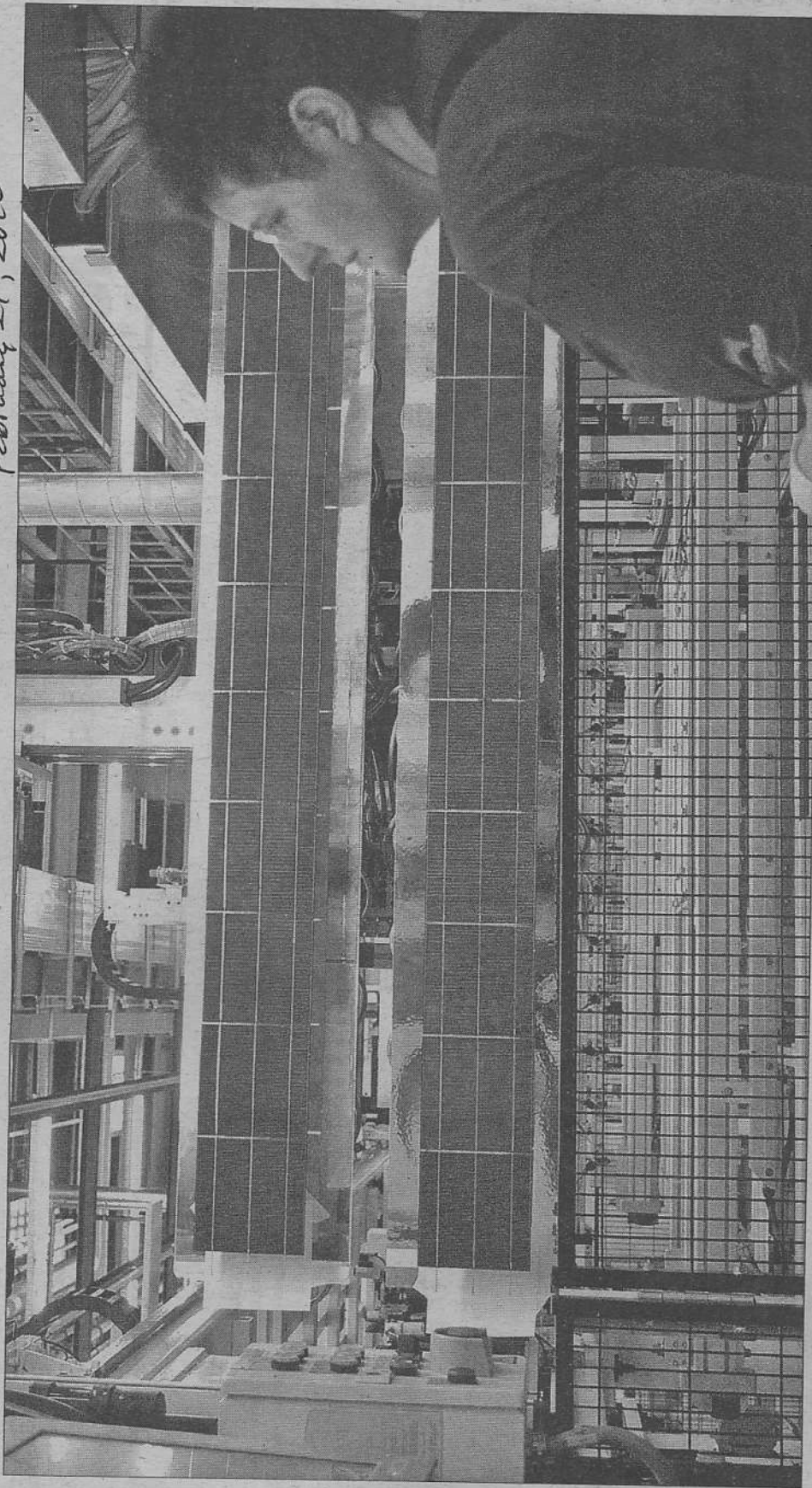
Currently, there are two incentive types in Oregon supporting solar energy: Energy Trust rebates and Business Energy Tax Credits. The number of incentives for solar installations has jumped since 2008.



Source: Energytrust.org

STEVE COWDEN/THE OREGONIAN

February 21, 2010



A worker in SolarWorld's factory in Freiberg operates a machine holding two strings of solar cells, moving through module assembly, one of the final stages of production. The German manufacturer uses robots and automation throughout its production process. Humans rarely handle the solar components.

AMY HSUAN/THE OREGONIAN

Solar: Future of subsidies is in question

Continued from Page One

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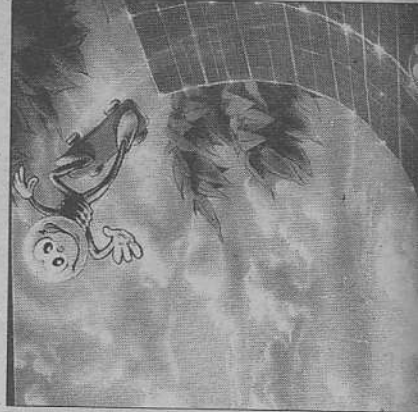
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Tariff program by July

The solar explosion in Germany, which has more cloudy days than Oregon, ignites hope for staking a claim in the money-making clean-tech sector. More than two dozen countries — and a dozen U.S. states — have followed suit.

"We are late coming to the party," Kurlongoski said.

To locate in Hillsboro, SolarWorld landed \$40 million in Business Energy Tax Credits.



Milan Nitzschke, SolarWorld AG's head of communications, says it's not the amount of the incentive that matters, as other nations with far more lucrative rates have failed. What matters is less bureaucratic red tape, such as a lengthy permitting process or excess fees.

"There is such a high potential of solar energy in the U.S., and you don't need a high subsidy," Nitzschke said. "You need a support system and a high acceptance rate in the population. The U.S. could be the biggest market in two to three years"

Continued from Page One

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500,000 energy makers

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Once the industrial heart of East Germany's socialist regime, the town of 50,000 is blanketed by snow and ice four months of the year — an unlikely home for SolarWorld's largest manufacturing site.

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Based in Bonn, SolarWorld is one of Germany's top manufacturers, and now Oregon's largest solar player. The company, which employs more than 2,700 worldwide, roars forward with expansion despite a global recession.

Its biggest engine: Germany's popular feed-in tariff, which pays up to 55 cents per kilowatt hour for generating solar power at home. The incentive allows consumers to make an annual return of 5 to 9 percent — enough to cover the system's cost and then some.

Since 2000, more than 500,000 residents have become energy producers in Germany, now the world's largest solar market.

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"SolarWorld's already become a great community partner," said Hillsboro Mayor Jerry Willey, who plans to build a solar field like one he saw on a visit to Freiberg.

But to ensure solar power has a long-term place in the Oregon economy, state leaders are taking the unusual step of trying to guarantee solar companies a local customer base. By July, they hope to roll out a pilot feed-in tariff program.

"The goal is green jobs," said Brian Shipley, Kulongoski's deputy chief of staff. "The demand could get to the scale of supporting the manufacturing base here."

Under House Bill 3039, passed last year, 25 megawatts — enough solar panels for 5,000 households or 500 businesses — would qualify at the start. Homeowners and businesses would tap banks for loans to pay for a 3-kilowatt system, between \$20,000 and \$27,000 for an average home.

The Public Utility Commission will finalize details in the coming months. But under current proposals, the three investor-owned utilities — Portland General Electric, Pacific Power and Idaho Power — would pay between 25 cents to 85 cents per kilowatt hour, depending on the region.

Power purchase agreements will last 15 to 25 years. And the amount of electricity the consumer uses will be deducted from the amount generated from the solar system, so the consumer gets paid only for the excess. Participants in the program will not be able to tap the state's existing incentives, Energy Trust rebates and Business Energy Tax Credits. However, they will be eligible for a federal tax credit.

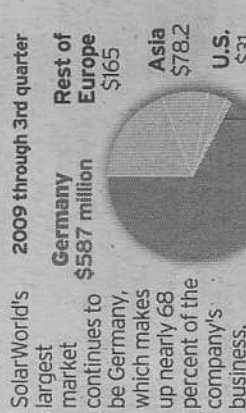
At 80 cents per kilowatt hour, participants will be paid 10 times the cost of



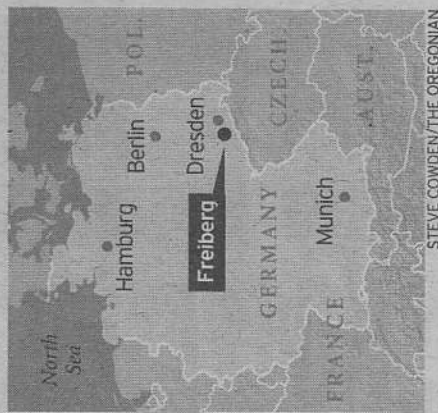
AMY HSUAN/THE OREGONIAN

A mural in SolarWorld's conference room in Freiberg shows the company's fun and unconventional side.

SolarWorld revenues by region



Source: SolarWorld
STEVE COWDEN/THE OREGONIAN



der the cost of developing jobs, said Jeff Bissonnette, a lobbyist for the Citizens' Utility Board.

"Ratepayers are not venture capital and not research and development," he said. "We are interested in developing solar, but we are not willing to break the bank to do it."

So far, demand for solar panels in Oregon and the United States lags that in Europe. In 2009, SolarWorld's U.S. sales

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Freiberg, once saddled with a 20 percent unemployment rate and pollution from years of silver mining, now breathes new life as a "solar valley." Solar-related and high-tech businesses employ 30 percent of the work force. A 5,000-student university enjoys a reputation as a research and development center. SolarWorld plans to add 71 acres to its industrial zone.

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The recession has meant rocky times for solar manufacturers, with disappearing demand and falling prices. But thanks to the feed-in tariff, the German market surges ahead. In 2009, SolarWorld reported \$1.4 billion in revenue, more than \$900 million in 2008.

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At 80 cents per kilowatt hour, participants will be paid 10 times the cost of electricity from conventional sources, a price that ultimately will fall on ratepayers, who could see a half-percent increase in their bills, Shipley said.

If the program is rolled out statewide, ratepayers can expect their bills to climb, which critics say will unfairly squeeze those at the bottom of the income scale.

Oregon ratepayers should not shoul-

der the cost of developing jobs, said Jeff Bissonnette, a lobbyist for the Citizens Utility Board.

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For SolarWorld, a feed-in tariff in Oregon could create a sudden bump in sales. That would mean more jobs in factories, more work for installers and distributors and even more business for lenders.

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Amy Hsuan: 503-294-5137;
amyhsuan@news.oregonian.com



Boris Klebensberger, SolarWorld AG's chief operating officer and president of the North American operations, points at multicrystalline panels outside a SolarWorld office building in Freiberg. The factories operate partly on electricity from solar panels mounted on its buildings and from a solar field nearby.

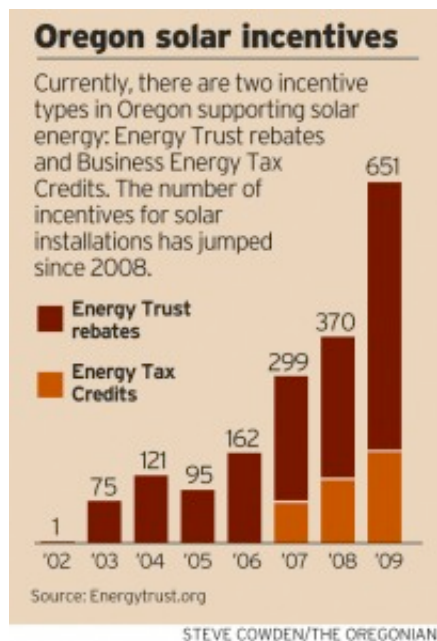
AMY HSUAN/THE OREGONIAN

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To locate in Hillsboro, SolarWorld landed \$40 million in Business Energy Tax Credits, with more pending approval. Today, more than 550 Oregon workers pump out wafers and cells on a 97-acre campus that’s about half built. By next year, the company plans to have 1,000 employees and capacity for 500 megawatts of solar energy, enough to power 165,000 homes.

“SolarWorld’s already become a great community partner,” said Hillsboro Mayor Jerry Willey, who plans to build a solar field like one he saw on a visit to Freiberg.

But to ensure solar power has a long-term place in the Oregon economy, state leaders are taking the unusual step of trying to guarantee solar companies a local customer base. By July, they hope to roll out a pilot feed-in tariff program.

“The goal is green jobs,” said Brian Shipley, Kulongoski’s deputy chief of staff. “The demand could get to the scale of supporting the manufacturing base here.”

Under House Bill 3039, passed last year, 25 megawatts – enough solar panels for 5,000 households or 500 businesses – would qualify at the start. Homeowners and businesses would tap banks for loans to pay for a 3-kilowatt system, between \$20,000 and \$27,000 for an average home.

The Public Utility Commission will finalize details in the coming months. But under current proposals, the three investor-owned utilities – Portland General Electric, Pacific Power and Idaho Power – would pay between 25 cents to 85 cents per kilowatt hour, depending on the region.

Power purchase agreements will last 15 to 25 years. And the amount of electricity the consumer uses will be deducted from the amount generated from the solar system, so the consumer gets paid only for the excess. Participants in the program will not be able to tap the state's existing incentives, Energy Trust rebates and Business Energy Tax Credits. However, they will be eligible for a federal tax credit.

At 80 cents per kilowatt hour, participants will be paid 10 times the cost of electricity from conventional sources, a price that ultimately will fall on ratepayers, who could see a half-percent increase in their bills, Shipley said.

If the program is rolled out statewide, ratepayers can expect their bills to climb, which critics say will unfairly squeeze those at the bottom of the income scale.

Oregon ratepayers should not shoulder the cost of developing jobs, said Jeff Bissonette, a lobbyist for the Citizens' Utility Board.

“Ratepayers are not venture capital and not research and development,” he said. “We are interested in developing solar, but we are not willing to break the bank to do it.”

So far, demand for solar panels in Oregon and the United States lags that in Europe. In 2009, SolarWorld's U.S. sales made up 3.5 percent of total revenue. Since 2002 in Oregon, about 650 rebates and tax credits have gone toward solar installations.

For SolarWorld, a feed-in tariff in Oregon could create a sudden bump in sales. That would mean more jobs in factories, more work for installers and distributors and even more business for lenders.

Milan Nitzschke, SolarWorld AG's head of communications, says it's not the amount of the incentive that matters, as other nations with far more lucrative rates have failed. What matters is less bureaucratic red tape, such as a lengthy permitting process or excess fees.

“There is such a high potential of solar energy in the U.S., and you don't need a high subsidy,” Nitzschke said. “You need a support system and a high acceptance rate in the population. The U.S. could be the biggest market in two to three years.”

Cutting off the money

Oregon's feed-in tariff plan comes as Kulongoski faces criticism for his green tax incentives. This month, state lawmakers voted to scale back the BETC program, spurring debate about the value – and cost – of subsidies for renewable energy.

“There are costs involved in this,” Kulongoski said. “Unfortunately, fossil fuels are cheaper. But in the long term, renewable energies will be cheaper for consumers.”

In Germany, a similar debate unfolds. As the nation struggles with a record deficit, government leaders want to slash the feed-in tariff by up to 15 percent as soon as April, citing too much of a good thing.

But members of the German solar industry association, now 800 members strong, say it would kill the industry's momentum at a time of fierce competition with Chinese manufacturers trying to make a play for the U.S. market.

Without the incentive, SolarWorld could lose its largest customer, Germany, which would have a ripple effect on Oregon.

"It won't cripple the market," analyst Kann said. "But everyone will be impacted by the German feed-in tariff cuts. The solar industry worldwide will feel it."

Analysts say 2010 will be better than last year, but the loss of government incentives could mean the solar industry has to survive on its own.

"We are facing hard times," Nitzschke said. "If one company in Germany will still be alive after this situation, it will be SolarWorld."

SolarWorld's strategy: more efficiency, greater technology and better branding. The company's Freiberg factory offers a glimpse of things to come: Multicrystalline modules, cheaper for consumers than the mono-crystalline ones sold in the U.S. Every scrap is recycled, from silicon dust to broken glass.

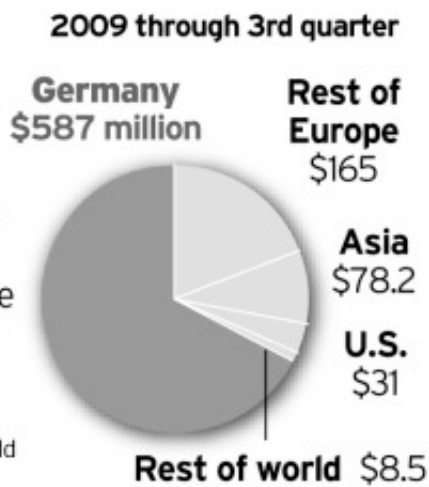
But ultimately the company will need new customers. And so far, government help has been the only path to new solar markets.

Amy Hsuan, *The Oregonian*A worker in SolarWorld's factory in Freiberg operates a machine holding two strings of solar cells, moving through module assembly, one of the final stages of production. The German manufacturer uses robots and automation throughout its production process. Humans rarely handle the solar components. "There are many places now in which the cost of electricity from the roof is less than the price out of the grid," Nitzschke said. "But for now, the feed-in tariff is the best system to support solar energy."



SolarWorld revenues by region

SolarWorld's largest market continues to be Germany, which makes up nearly 68 percent of the company's business.



Source: SolarWorld

STEVE COWDEN/THE OREGONIAN

The history of SolarWorld

1954: Bell Labs announces the invention of the first modern silicon solar cells, turning sunlight into electricity.

1977: Engineer and entrepreneur Bill Yerkes sells small solar start-up to Atlantic Richfield Company, an oil company, forming ARCO Solar.

1979: ARCO opens the world's largest solar factory with one megawatt of production in Camarillo, Calif.

1990: Siemens acquires ARCO Solar and renames it Siemens Solar Industries.

1997: Siemens introduces the first 25-year warranty for solar modules. U.S. is the leader in solar manufacturing.

1998: SolarWorld AG is formed as a start-up business by Frank H. Asbeck, an engineer.

1999: Germany requires utilities to pay feed-in tariffs at premium rates to owners of solar systems who supply power to the grid. Germany soon becomes the industry leader.

2001: Royal Dutch Shell acquires Siemens Solar to create Shell Solar Industries.

2006: SolarWorld acquires Shell Solar, making it one of the largest photovoltaic companies in the world.

2008: SolarWorld's 480,000-square-foot Hillsboro plant becomes North America's largest solar manufacturing factory.

2009: SolarWorld, in a joint venture, builds a manufacturing facility in South Korea.

Solar incentives in Oregon

Similar to the German model, Oregon is close to launching a feed-in tariff, which would require utility companies to buy electricity from owners of solar systems. It guarantees a set price over a length of time, eventually covering the cost of the system, encouraging consumers to buy solar panels.

What is the timeline for Oregon?

The Public Utility Commission will finalize details, including rates and contract terms, in the coming months. State leaders hope to roll out a pilot program by July 1.

Who can participate in Oregon?

The pilot program is for 25 megawatts to start, enough for 5,000 homes or 500 businesses. There will be a percentage reserved for residences and small and large businesses.

What are the rates?

No rate has been set yet, but proposals peg the rate at less than 80 cents per kilowatt hour, which will gradually reduce over time as solar panels get cheaper. In addition, residents will be paid only for the excess electricity they produce, not the amount they consume. The payment will probably show up in their utility bill in the form of a credit.

What incentives for solar currently exist?

An average residential system produces about three kilowatts and costs \$20,000 to \$27,000. Current Energy Trust rebates and state and federal tax credits could reduce the price to \$4,000 to \$10,000. But you can not use the existing incentives if you're going to participate in the feed-in tariff.

–Amy Hsuan

–**Amy Hsuan**