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The surge of solar

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The energy business has come a long way since Mike Tierney entered the industry almost 30 years ago, but the motivations for going solar remain the same and people are more incentivized to do it, thanks to government involvement.

A national demand for renewable energy was created in the wake of the 1977 oil crisis. While Jimmy Carter was installing 32 solar panels atop the White House, private companies that specialized in solar energy were few and far between in the Roaring Fork Valley and throughout the country.

In response to the demand, Colorado Mountain College began its first solar energy training program in the valley. Most of the founders of the oldest local solar installation companies learned the trade through CMC's program in the '80s.

"I was educated through CMC," said Tierney, who founded Aspen Solar in 1982. "Back then it was similar enthusiasm as to now. [Gas] prices were high. There was a demand for clean energy. But at the time, solar hot water was pretty much the only game in town."

During the industry's early years, solar hot water systems, which convert solar energy to heat water, dominated the industry. The currently popular photovoltaic (PV) systems, which convert solar energy into electricity to be sent back on a power grid, was less common because utility companies didn't have a system in place to accept energy from customers.

Solar technology was mostly for people living in remote areas who had self-sufficient systems and didn't rely on public utilities.

"When I first started in the business it was people living off the grid in the mountains," said Laurie Guevara-Stone, international program manager of Solar Energy International. "They were more the alternative type people. It was sort of a hippie technology for people who wanted to live off the grid. Now it's become much more mainstream."

Solar goes mainstream

At the beginning of the last decade, federal, state and local governments began offering incentives and rebates to businesses and residences that installed solar systems.

In 2004, Colorado was the first state in the nation to pass a voter-approved Renewable Portfolio Standard (RPS), which mandates the state to generate a certain percentage of its energy from renewable energy.

While the state pushed for “green” energy, that same year Holy Cross Energy launched the WE CARE program, which offers financial incentives for renewable energy generation and provides cash rebates to consumers.

Since the program began, Holy Cross has contributed about 1.7 megawatts of renewable energy to the grid — primarily from on-site solar systems — and has rebated nearly \$2.8 million in incentives, according to Holy Cross.

As both the public and private sector began to incentivize renewable energy, solar technology became more affordable to install and maintain. In the past five years, the cost of installing an average solar system has dropped over 40 percent, said Nathan Ratledge, director of Community Office for Resource Efficiency (CORE).

PV systems also became more practical when utility companies began accepting energy produced from customers.

“The advent of grid-tied solar really did rocket the industry forward,” said Sunsense Solar founder Scott Ely, who has been in business for 21 years. “Suddenly everyone was a potential client.”

The collective result of the economic incentives and advances in technology led to a statewide boom in the industry.

In 2007, Colorado had more than 17,000 jobs in the clean energy economy, according to a report by the nonprofit organization, Pew Charitable Trusts. The research also found that the state’s jobs in the clean energy category grew 50 percent between 1998 and 2007.

Currently, there are between 400 and 500 solar installations in the valley, Ratledge estimated.

Making sustainable business sustainable

In 2009, the local industry proved not to be immune to the recession. A handful of solar energy businesses in the valley folded in the past two years due to the economic dip, said Ratledge.

“The economy going south definitely impacted our industry,” said Sol Energy owner Ken Olson, who has been in the industry since the ’70s.

He added that since the price of solar equipment has gone down, incentives to install the systems have been reduced across the board. That’s because incentives fund a percentage of the overall cost of a solar project.

“Now that the incentives are softening a bit, the future is not quite as rosy,” said Olson.

Since it launched in 2004, Holy Cross has reduced its rebate program from offering a \$2 per watt incentive — based on a system costing about \$10 per watt — to offering \$1 per watt for the physical hardware and 50 cents per watt for the energy produced. The cost of a system today is about \$5.50 per watt.

Although the recession has had an impact on the industry, the longtime locals who have been in the industry since the Carter administration are holding steady.

“It’s been a roller coaster ride,” said Tierney. “There have been many ups and many downs ... but it seems like the businesses that are here right now are the ones that are here to stay.”

The local solar installers who have survived are the ones who have learned to diversify their business, offering a variety of solar options to everyone from longtime locals and businesses to second home owners and public institutions.

“Hopefully we have a sustainable sustainable business,” said Ely. “I think the businesses who learn to diversify will last. You have to. But we do have to learn to live without the larger incentives, and if the rebates to go away [solar installers] don’t have anything else to rest on.”

Off-site, out of mind

The solar energy industry has recently been the source of heated debate in local politics.

In the past month, Aspen and Pitkin County officials have spent time discussing the complicated issue of offering energy-sucking houses the option to buy energy from solar farms located downvalley.

Houses that exceed their allotted energy budget due to non-essential luxuries like heated driveways and hot tubs are required to mitigate their consumption by either installing solar systems on-site or paying a fee to the Renewable Energy Mitigation Program (REMP), which funds renewable energy projects in the valley.

Offering consumers the additional option of paying for energy produced on a solar farm has caused many to question the repercussions — or lack thereof — of not dealing directly with their consumption problem, figuratively and literally moving it “out of sight and out of mind.”

While city and county elected officials shot down the option mainly for philosophical reasons, solar installers in the valley refused the idea because of its potential effect on REMP, which has raised nearly \$8 million over the last seven years. Much of that money has been funneled back into the industry, giving local installers business.

REMP was originally designed to give consumers whose property wasn’t conducive for solar energy production an option. Currently one out of four excessive consumers choose to pay the REMP fee, while the other 75 percent install systems on-site.

“When we started the program, we required mitigation for any snowmelt, pool or spa and it didn’t have the option to mitigate off-site,” said Stephen Kanipe, the city of Aspen’s chief building official. “It was tough love that way. A lot of people squealed and squeaked and squawked about that — owners and developers and such — and they said that they recognized the problem but the they just had a crummy solar site. Our intent for structuring the program was to make our on-site mitigation justifiable ... I really think that it’s boosted the solar designers and installers to do work here.”

Last week, county officials also began discussions on amending Pitkin County’s land-use code in its regulation of solar panels. The two main issues on the table were whether the county should allow solar arrays and how to address the potential glare of the panels.

“Essentially it’s a whole package of how we’re going to review and process solar development in the county,” said Mike Kraemer, a Pitkin county planner. “We’ve known that we’ve needed to work on it for a while.”

When asked why the issues have come to the political forefront now, after the industry’s 30-year history in the valley, Kraemer said that it’s been a long time coming and — despite the recession — the issues are on people’s minds.

Dirty, cheap energy still a reality

With the help of the municipalities and Holy Cross, the valley has been an incubator for renewable energy, but the community needs something transformational like a carbon tax, said Olson.

“We still live in a world of cheap, dirty energy,” he said.

Although the industry has burgeoned over the years in the valley, most of the old-school installers recognize that the community is far off from where it should be.

“I think people nowadays are in it a little differently than they were in the past,” said Tierney. “I think it’s more of a business than maybe saving the Earth and trying to do the right thing. I think that we need to continue to look into sustainability. Building better, building smarter, using a mix of solar hot water and a mix of photovoltaic.”

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Jesse Amory, left, and Mike Tierney with Aspen Solar install solar panels on the roof of a home on Castle Creek Road.

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