Jason Edens, Solar Panel Installer  
Rural Renewable Energy Alliance (RREAL)

Describe a typical day at your job.

I would if there was one! Every day is unique. As an organization, we do a lot of solar heating and solar electric, more heating, but we do both. We do solar heat for low-income families. We're out in the field installing supplemental solar heating systems. It's a smaller organization in terms of size so different people do different things. We have an installation crew in the field most days. There's a lot of prep in doing and managing the solar energy installations. So in terms of defining a typical day, it is tricky to explain.

Do you work normal hours (9 a.m. to 5 p.m.)?

No, definitely not; 8-5 would be a vacation! It's usually a 7 a.m.-7 p.m., or 6 a.m.-6 p.m. job with 12-hour days being common.

Do you work on the weekends?

Sometimes we work on the weekends, but we're trying to do this less and less. Sometimes there's just work that needs to be done.

How did you get started working in this field or interested in the field?

Personally, I got into it because I was low-income and was struggling with my winter heating bill. I wanted to get a loan for a solar energy system, because I was an environmental studies graduate student and broke. They said no, and I said "oh?" But I found a way to finance my own solar energy system installation and it dramatically reduced my heat load, expense, and carbon footprint. That was the "ah-ha" moment where we realized we could do this for other people. So I guess I got into through experience with fuel poverty and an enthusiasm for solar energy.

Describe your training or educational background.

I have an undergraduate degree in high school education with an emphasis on social studies. I also have a graduate degree in environmental studies in policy and planning. In terms of certifications or licensures for solar energy, I have a general contractor's license as well.

How did you know what to do when you built your first system at home?
It was probably a combination of things. I had been attending workshops on solar energy and reading about it for a decade, and I had a lot of help. It certainly was not representative of best practices in the solar industry.

**Describe your work environment.**

Well, it depends on who you are talking about in the organization. As an integrated manufacturer and installer, we have a lot of different people doing different things. It's a combination of deskwork and fieldwork. There's a lot of engineering time, time spent crunching numbers, time spent on the actual manufacturing and selling of our product. We have people full time doing the manufacturing, people doing sales, and then the installation team who is basically out in the field most days working out of the truck as opposed to the desk. It takes a lot of pieces to put together the puzzle together. People have different work environments.

I spend most of my time at my desk or the podium, more than with a tool belt on. That wasn't the case in the past. There are people here wearing tool belts full time, and people handling mouses (computer) full time.

**What sort of tools, machines, or equipment do you use regularly?**

In the manufacturing facility, we use a lot of large sheers, aluminum chop saws, drill press, pneumatic riveters, and things of that nature. Of course in the field, it's a diverse collection of conventional construction tools. What's unique to the solar energy industry is that you often have to have a slightly larger toolkit because you encounter so much from the point of installing the equipment to delivering the energy. For example, with a solar electric installation, you're potentially going from the roof to the mechanic room, so you pass through a variety of boundaries. You require a large toolkit because you have to deal with all different aspects. If you do a combination of solar electricity, solar water, solar air heat, you have electricians, plumbers, and mechanical contractor toolkits all in one. And of course, trucks. As a manufacturer, we receive and ship a lot of raw materials and products, so we're using large fork trucks and things of that nature.

**When you hire people for your installation team, do you expect them to have skills with all the aspects of solar energy?**

The short answer is no. It would be difficult for any one person to have all those skills. From a project management perspective, it makes more sense for us to partner with other people in those situations. Our installation team has a broad spectrum of skills, but there are always aspects of our projects where we need to partner with others. There's a lot of on-the-job training as well.

We don't expect people to completely understand the process when we hire them. And although we're growing, it's not like we are hiring people on a regular basis.

**What skills or personal qualities are good for this job?**
I don't know if there's anything really unique about the renewable energy industry in terms of employability characteristics. With our particular mission as a non-profit, being a good people person is particularly important. We work with a broad spectrum of demographics, so being comfortable and competent with our clients is important. For people on the manufacturing team, I guess being a people person is less important than people who are actually interfacing with clients. But I'm not sure there's anything specific about our work and the set of employability skills.

Is there anything specific that you look for when you are hiring people?

A lot of what we consider when we hire people has to do with their commitment to our mission, and how well they'd fit with our existing team. We want people who are aware of the fact, and willing to put in long days. We can have a really rigorous work schedule, especially during the construction season, although that's not unique to solar energy. And as a non-profit, things are often very intense and amorphous. We never know what any day will bring.

Describe how your job involves working with energy efficiency or conservation?

Energy efficiency definitely plays prominently in our work in that we stress the importance of conservation before renewable energy. Renewable energy isn't really conservation. Whether your energy comes from a coal-fired power plant or a solar electric system, you're still using energy. It's not really conserving the energy you're using. It's just ensuring that it's from a cleaner source. At some level, it's a more efficient use of resources. We always stress the need for energy efficiency and conservation.

What do you enjoy most about your job?

All of us here love our work, and we're very dedicated to the work. It is never a struggle to get up and go to work in the morning. More often than not it's a blast. The most enjoyable for me is definitely working with our lower-income families. That's the most rewarding aspect of it. It's great hearing the feedback from them that it has made a dramatic difference in their ability to weather the heating season. And to hear that we're using clean energy to address poverty, that's what you work for. Those stories and feedback are what it's all about.

It's also easy to become jaded. In the grander schemes of things, we're using such monumental quantities of energy on the planet. It seems like it is just a drop in the bucket. If everyone pitches in and contributes their drop to the bucket, the effect in the aggregate is positive.

What future changes do you expect to see in the field?

I think there's going to be a lot more regulation and a lot more competition. I think there'll be a lot more certification required for installation services and products manufactured. It's kind of a double-edge sword in a way, because at a time when we need to be fast-tracking renewable energy technologies, we also need to be ensuring quality in the marketplace. It's a hard balance to strike. I really hope we start to see more demand.
Are there any common misconceptions about this type of work?

I think for the work it really depends because different people have different misconceptions. People who have been in the trades for a long time have the misconception that they can easily understand what's involved with a solar energy installation. We encounter a lot of people who have been builders of different types for a long period of time, who often assume they can just simply incorporate it into their regular trade without the understanding that solar energy is an oscillating resource, requires some rigorous math, and other aspects that might not have been part of their regular skill set.

What is your advice to someone interested in this field?

Great question because we actually have a youth training program. The refrain I use is today's youth are making tomorrow's energy choices. It's important, at a bare minimum, to expose young adults to the different renewable energy options so it can at least be on the menu in the future. Whereas most people making the dominant energy choices don't see it on the menu.

I guess in terms of concrete advice: get your hands dirty — volunteer, figure out if it's what you want to do and if it's a good match with your skill set.

If somebody was in rural Minnesota and didn't know any solar panel installers in their area, what would be a comparable thing to get in to? Would you suggest working with an electrician or a general contractor?

Because solar energy crosses so many trades, any exposure (to an electrician or general contractor) would be useful. It's such a large industry. It depends on where you see yourself fitting in. For example, we just hired a young mechanical engineer and his skills are integral to what we're doing. All the skills are important, so it really just depends on where you want to fit in. Get your hands dirty either metaphorically or literally.