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The pleasant way to go solar: Neighborhood cooperatives

By [George Musser](#) in [60-Second Solar](#)

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Editor's Note: Scientific American's George Musser will be chronicling his experiences installing solar panels and taking other steps to save energy in 60-Second Solar. Read his introduction [here](#) and see all posts [here](#).

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In my last post, I described one way to get around the bureaucracy of solar power: [power-purchase agreements](#), whereby a company does the legwork in exchange for a cut of the government subsidies. Another way is to join forces with like-minded neighbors, which spreads the burden over a larger number of people and gives you some negotiating clout with installers, utilities, and city officials. A friend of mine in Washington, D.C., Ilana Harrus, is a member of the [Mt. Pleasant Solar Cooperative](#), and I've invited one of the leaders of the group, [Jeff Morley](#), to write a guest post describing their efforts—and explaining how you and your neighbors can do the same. Their experiences are very similar to mine, except that they've faced the challenges as a community.

<!--[if !supportEmptyParas]--> In September 2006, my son Diego dragged me into seeing [An Inconvenient Truth](#), which I had been resisting out of a vague and lazy hostility to Al Gore. Diego, then 12, and his friend Walter Lynn were on something of a green kick at the time, and the movie persuaded me I should be a little less cynical and little more supportive. After the show, we started talking and Walter said, "Why don't we get solar power on our house?"

<!--[if !supportEmptyParas]--> That was a good question, I thought. A lot of people are talking about global warming. Why don't we do something? So Diego and Walter and Walter's mother, Anya Schoolman, and I decided to create the Mt. Pleasant Solar Cooperative to bring the power of the sun to our neighborhood. [Mt. Pleasant](#) is a leafy, tree-lined residential enclave in Washington D.C., located less than two miles north of the White House, featuring lots of flat-roofed row houses inhabited by tree-hugging lawyers, green activists, sensitive social workers, and other public-interest types who would love go solar.

<!--[if !supportEmptyParas]--> At Anya's kitchen table, we sketched our four-step plan:

1. Get a whole bunch of neighbors to install solar at the same time.
2. Get city government, local business and environmental groups to support our efforts.
3. Find a solar contractor who would give the Solar Coop a discount because of economies of scale.
4. Install those panels.

<!--[if !supportEmptyParas]--> I figured we could get something going within a year. Boy, were we wrong. As we grappled with what was actually involved in making our dreams real, we spent two years climbing the solar power learning curve, and it was steep.

First of all, we hit the reality that solar power is relatively expensive, costing up to a third more than carbon-based energy sources. If we were going to do something, we had to figure out how to cut every cost possible. Second, the economies of scale that we envisioned simply don't exist in residential solar installations; at least that's what veteran solar installers around Washington told us. Third, the practical realities of going solar in a cost-effective way turned out to be a fiendishly complex set of interrelated problems.

We learned, for example, that holding down the price of solar power depended, in part, on the implementation of solar-friendly practices such as "net metering" and "smart metering" by our local utility, the [Potomac Electric Power Company](#), otherwise known as Pepco. But Pepco's willingness to do right by solar customers depended on the views of the local [Public Service Commission](#) (PSC), a powerful but opaque body that moved with the speed and friendliness of a glacier. The PSC, in turn, looked for guidance from the D.C. City Council, a dozen elected officials from a majority African-American city, who were hearing complaints that a previous solar rebate program amounted to a handout to wealthy whites.

Amidst this welter of conflicting forces, our beautiful but innocent idea of neighborhood solar power was not enough. We needed expertise to give our project credibility with decision makers who could deliver real financial benefits for our members. So we scaled back our ambitions and started with smaller steps. We touted basic energy-efficiency measures to our members as the prerequisite for going solar. (Drafty windows and outdated appliances waste solar energy just as fast as they waste carbon energy!) We arranged for discounted home energy audits for our members. We bought compact fluorescent bulbs wholesale and sold them at cost to Coop members. And we started networking with City Council aides, national green groups, PSC members, and industry experts seeking advice about how to make solar power cheaper and more accessible.



While many of our early ideas did not pan out, our Cooperative structure proved resilient and valuable. Collectively, the array of issues facing an aspiring solar homeowner is daunting. But with a committed core of Coop members addressing these problems, they became manageable. Anya, who had worked at the Interior Department and several national environmentalist groups, took the lead in pressing elected officials and regulators for more solar friendly policies. Walter and Diego leafleted the neighborhood and collected statistics on energy usage in member households. That gave us insight into what size solar installations our members needed and the ability to estimate what kind of savings could be realized.

We joined forces with an Arlington, Va., firm, [Switch](#), whose CEO Chris Graves developed a sophisticated model of how long it would take a solar system to pay for itself. A couple of Coop members who know their way around a spreadsheet and financial jargon refined Chris's work and translated the numbers into simple concepts that the rest of us could understand. We found that, conservatively speaking, a D.C. residential solar installation could pay for itself in as little as seven years.

A Coop member who works at the powerhouse law firm of Skadden Arps arranged for pro bono legal advice on regulatory issues. The firm of Kaye Scholer also lent a hand. For the would-be solar homeowner, facing issues of liability and permitting, this expertise provided reassurance that the risks of going solar are manageable. The core group passed along what we had learned with all Coop members via living-room meetings, email, and a website. By sharing this information, we effectively reduced the cost (monetary and psychic) going solar for everyone. As the Coop members gained confidence that we knew what we were doing, everyone became more excited and willing to make the photovoltaic investment.

In time, we came to understand that two arcane but related concepts were key to our dreams. The first was the [Renewable Energy Credit](#) (REC). A REC represents 1,000 kilowatt-hours of electricity production from a renewable energy source. With state and local governments mandating that utilities generate more power from renewable sources, those utilities are willing to buy solar generated powers from individual homeowners in order to meet the government-imposed goals. Our members, we realized, could sell their RECs to help defray the cost of their system.

The second key concept was the Alternative Compliance Fee (ACF). The ACF is what utilities have to pay if they don't comply with renewable energy standards. With a relatively low ACF, Pepco was simply willing to pay a fine rather than purchase RECs. By lobbying D.C. City Council to raise the ACF, we created and bolstered the price of the RECs and protected this new income stream for our members.

This spring the Coop finally started to achieve its goals when 49 Mt. Pleasant homeowners signed contracts for solar installations, about four percent of the 1,200 single-family homes in the neighborhood. We'll be celebrating our solar launch on September 19 with a neighborhood-wide green celebration at the [Bancroft School](#), home of the kids who tend First Lady Michelle Obama's organic garden on the grounds of the White House.

It has been three years since we founded the Mt. Pleasant Solar Cooperative, and everybody's still talking about global warming. But here in Mt. Pleasant, we've done something about it. And we're just getting started. <!--[endif]-->

From the start, Anya, Diego, Walter, and I hoped that Mt. Pleasant Solar Cooperative could serve as a model for other neighborhood groups. While we have learned that the challenges of going solar vary widely by jurisdiction, we're convinced there are certain common challenges. From our experience, a solar cooperative has to educate and empower its members about the challenges of going solar, including:

- The costs and savings of a standard solar installation that will suit the needs of most members
- The relevant local regulations and permitting process for solar installations

- The federal tax credit for solar installation, as well as state and local incentives
- How to sell Renewable Energy Credits (RECs)
- How to talk to a solar contractor

<!--[if !supportEmptyParas]--> A successful Coop will also have the ability to reach out beyond its membership to:

- Cultivate relationships with elected officials and regulators. Once the DC officials saw that there was a tax-paying and voting constituency demanding solar power, they took effective action.
- Cultivate relationships with solar contractors looking to grow their markets. As soon as the Coop proved it could deliver large numbers of paying customers, local installers began offering discounted prices to our members.

<!--[if !supportEmptyParas]--> In short, educate, organize, and act. Of course, what Congress, the White House, and the international community do about global warming is crucially important. But you don't have to wait for someone else to act to make a difference. We can attack global warming one neighborhood at a time.

<!--[if !supportEmptyParas]--><!--[endif]-->If you'd like to learn more, you can reach Jeff Morley at solarcoop@yahoo.com.

Photos of solar-ready rooftops in the Mt. Pleasant neighborhood, courtesy of Mt Pleasant Solar Cooperative



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