



Solar Power for your Town

a way for Solar Citizens
to introduce to town governments
the concept of photovoltaic-supplied electricity
in town-owned buildings

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Has your town got the solar message? Does your town hall, the most prominent building around (one would hope), show off the progressive thinking of your town officials with an array of solar panels generating clean energy with zero fuel cost? Are any of your municipal buildings so equipped?

Some towns do get the message and reduce operating costs this way, while others have yet to experience that CFL bulb going on over their heads. But for some of those that have 'gone solar', the impetus came from townspeople doing a little organizing, a little research, and a little civic activism.

That's what this special publication from *Solar Nation* is about: pointing you at the tools you could use to push your town government in the direction of solar, should you decide to be the one leading the charge. We've provided you with:

- a PowerPoint slide presentation and notes that you can use, with a little modification, to put the case before your town fathers and other citizens.
- a recording of this presentation being given 'live' (without animations) to give you the flavor of it.

Links to these files can be found in the newsletter article that led you to the current document.

Before opening the toolbox, however, we should answer a couple of the questions you're probably already asking. For example:

Why Me?

Why me—a good question. Don't my local taxes go to pay someone at Town Hall/City Hall to work this kind of project?

Perhaps not. It's a sad truth that many towns across the land have no energy committee, a sadder one that even those that do are often not much wiser about renewables. And just as importantly, they may be totally in the dark about the creative financing options that can help ease a solar project through.

A good example of a citizen activist who answered the 'why me?' question was reported on the Solar Nation website in August 2007¹, with a follow-up story in the April 2008 edition of Solar Citizen².

Peter White of Cape Cod, Massachusetts found he needed to organize only ten citizens in each of five Cape towns to have a suitable article put on their town meeting warrants. Of those five, one town (Yarmouth) went ahead with the project, and in early Spring 2008 the town hall started using power provided by sixty PV modules on its roof. Peter commented that, while the selectmen were not opposed to the project, they were really swept along by *the enthusiasm of town meeting members for it*. The solar array, highly visible as it is from Main Street, has become a point of pride for the people of Yarmouth.

Since then, four other Cape towns (including three more of the original five) are considering installations on their libraries, schools and community centers, while a fifth is exploring wind power for its waste transfer station. And Yarmouth itself not only increased the size of its town hall array by 20%, but also voted for a second installation at the Chamber of Commerce/Rec. Dept. building.

The salient points about the experience are that:

- the effort was initiated not by town government but by a citizen convinced of the value of solar power;
- a relatively small effort was needed to start the process;
- it was citizen support that carried the day in Yarmouth;
- the visual prominence of the town hall there worked to grow the role of renewable energy in neighboring towns;
- the project gave work to local contractors;
- the cost-saving benefits of solar energy will accrue to townspeople through the municipal budget.

1 <http://www.solar-nation.org/2007/08/21/solar-citizen-of-the-month-september-2007/>

2 <http://www.solar-nation.org/newsletter/2008-04/>

Why the town's buildings?

Another good question: What's so important about public buildings, that they need to be solarized?

The short answer is that getting local authorities attuned to the benefits of distributed clean energy pays dividends downstream. As mentioned above, the Yarmouth, MA installation used local labor, reduced town management costs, and had a ripple effect in nearby towns. It also introduced town planners to the idea of solar as a deployable technology with measurable economic benefits. This understanding should mean a smoother permitting path for town residents and businesses—no slight achievement, given the rocky road some have to travel when their town and state officials regard solar as black magic belonging in the lab.

Finally, think of the public buildings in your town: what are they and where are they? They're police stations, firehouses, chambers of commerce, libraries, courthouses, schools, water and waste treatment facilities, etc. They're probably highly visible and, suitably accoutered in solar panels, send a message to the world of a smart, forward-looking town; in the case of school buildings the planning and installation process itself becomes an educational experience.

First Steps

1. First, don't assume your town is *not* on board the solar express. Make enquiries of your selectmen, town manager, or councillors, and quiz the energy committee if there is one. What are their plans for introducing renewable energy to the town? Have they looked at the financing options for solar? Are they aware of any interest from townspeople in seeing this become a reality? Are there any organized groups already working to this end?¹

¹ Most states have groups with some level of interest in promoting clean energy solutions. Check this resource to find some of them in your state: http://www.seia.org/cs/state_fact_sheets. You may even find citizens' groups in your town with an interest in this kind of initiative.

2. If you find your town or city got left on the platform as the train pulled out, or there's simply no interest in the idea among officials, you'll need to show them that there's interest from the people they serve—your fellow-residents. Because nothing gets an elected official's interest more than a town meeting full of voters clearly in support of an initiative or article.

This is the part that will take some work. You will need to organize at least as many citizens as are required by your town's bylaws for the initiation of petitions, articles, etc. And that's where you may want to launch a media campaign to gauge and build interest; not a saturation ad campaign in expensive glossies, but the guerilla marketing of flyers in public buildings, op-eds and letters in local newspapers, house parties and feet on the street. You may find the slide presentation we've provided will help convince both your neighbors *and* your town officials.²

3. At some point, you should enlist the expert help of a solar specialist to confirm the assumptions made in the presentation. This could be a local solar installer or one of the organized renewable energy groups mentioned in Step 1. Here are some resources that can help you identify allies in making your presentation convincing:

- Directories of solar professionals:
<http://www.findsolar.com/>
<http://www.solarpowerdirectory.com>
- A listing of state chapters of the American Solar Energy Society:
http://www.ases.org/index.php?option=com_content&view=article&id=10&Itemid=14
- A listing of state chapters of the Solar Energy Industries Ass'n:
http://www.seia.org/cs/about_seia/state_chapters

² *Important! You should view or print the slides along with the notes pages. We've added a lot of detail in the notes to help you with what could be unfamiliar issues.*

4. At this point, the procedures followed by your town or city are going to dictate much of what you do. But if we were the mayor, administrator or town manager, we'd probably want you to formally make the case for investigating the costs and benefits of a PV installation. And this could mean standing up before the energy committee, the board of selectmen or the complete town meeting and arguing for the project with the help of our presentation, modified to suit your needs.

The Critical Difference

What will make the difference between your town management taking the proposal seriously and just saying "That's nice. Next!"?

First, they have to be open to what many people in authority still consider a new and exotic idea. It would be a shame to get this far only to hear, in

effect, "Don't confuse me with facts, my mind is made up."

Second, the news that state or federal government is prepared to support such projects with grants or subsidies should tell them that there are plenty of people at higher levels of government who believe in a solar future.

And third, if a third-party organization is eager to enter into a power purchase agreement that would mean no upfront costs to the town, it means that the finance committee can't reasonably argue the case of lost opportunity costs.

But the critical difference between success and failure may well lie in the degree of support your proposal enjoys from other townspeople. A well-attended public meeting, with strong evidence of support from property taxpayers, will do much to convince the powers-that-be to go forth and solarize.

Some Towns that got the Solar Message

Pendleton, Oregon

Water treatment plant (100kW system)



photo courtesy of Energy Trust of Oregon

Yarmouth, Massachusetts

Town hall (10.5kW system)



photo courtesy of CapeCodToday.com

San Geronimo, California

Lagunitas School District (49.3kW system)



photo courtesy of Solar Power Partners

Blythe, California

Chuckawalla Valley State Prison (1000kW system)



photo courtesy of SunEdison

The Presentation at a Glance

What the Solar Power for our Town slide presentation will tell your town government (and neighbors)

Purpose

To introduce the concept of using solar energy to supplement the power supply for town buildings

Why Solar is so Important

To stabilize our climate, we must reduce emissions drastically; we can only do this with non-fossil power.

Over 50% of our electricity comes from coal; every kilowatt of clean energy that displaces a kilowatt generated from coal, the biggest GHG emitter of all, helps stabilize our climate.

What can a Municipal PV System do?

For part of the municipal energy load, it can eliminate expenditure on fuel and replace it with clean, fuel-free power; as fuel prices rise it will deliver greater savings. Local businesses can be gainfully employed in construction, and the public image of the town will benefit.

Financing

A PV system can be purchased outright, leased, or leased-to-own. All these options involve considerable outlay, either at the outset or through the life of the system. An alternative is the Solar Power Purchase Agreement, under which a Third Party finances the system and sells the power to the town at an agreed rate over a long (e.g., 20-year) period. Another alternative could be the 'flip' model, in which the Third Party and the town jointly fund the system; the town buys the power for set (e.g. 6-year) period, after which it becomes majority owner. In both Third Party arrangements, the town could have the option eventually to buy the system.

While town governments, as non-tax-liable entities, cannot enjoy clean energy tax credits, there are state and federal funds of varying generosity and applicability that might be used to defray costs; these should be thoroughly investigated. See *Resources and References* below.

Case Study—Yarmouth, MA

A citizen of Massachusetts organized residents of this Cape Cod town to press, successfully, for a solarized town hall. It's expected to be the first of many in the area.

Next Steps

Where do we go from here? (See *Next Steps* below).

Why Should we Take Action Now?

Fuel prices are still rising; we must reduce emissions everywhere; government funding assistance is available now.

Next Steps

After you've convinced your town officials that they should be in hot pursuit of solar power, you should be able to hand the reins over and let them continue the chase. And here's what you might expect them to do next:

- Define the scope of the project: size, # of buildings, maximum price, etc.
- Identify possible installation locations
- Research more accurate installation costs, with firm bids from vendor(s)
- Confirm rebate/subsidy entitlements from state and federal sources
- Assess energy efficiency measures and costs¹
- Decide on financing model to be used and find investors/partners/vendors appropriate to that model
- Negotiate contract

Final Steps

As the prime mover in this endeavor, see if you can get yourself invited to the grand turn-on of the solar array on your town hall. In fact, make sure they let you turn the switch yourself!

Resources and References

- Database of State Incentives for Renewable Energy (<http://www.dsireusa.org/>)
- Solar Radiation Maps of North America:
 - NREL (<http://www.solar-nation.org/why-solar/solar-maps>)
 - 3Tier (<http://firstlook.3tiergroup.com>)²
- Rarus Institute, *the Customer's Guide to Solar Power Purchase Agreements* (www.CaliforniaSolarCenter.org)
- National Renewable Energy Laboratory,

1 An inefficient building will waste power no matter what the source of the energy used, but what better time for an energy audit of your town offices? Besides, you may find that the source of those state or federal funds will insist on such an audit before considering disbursing money.

2 3Tier Group charges a fee for a full site analysis.

Solar Photovoltaic Financing: Deployment on Public Property by State and Local Governments

(<http://www.nrel.gov/docs/fy08osti/43115.pdf>)

- National Renewable Energy Laboratory, *PVWATTS: A Performance Calculator for Grid-Connected PV Systems* (http://rredc.nrel.gov/solar/codes_algs/PVWATTS/)
- Solar Renewable Energy Certificates discussion: (www.Resource-solutions.org) and (www.GREEN-E.ORG)
- Real-time monitoring of solar array performance at Yarmouth, MA town hall: (<http://view2.fatspaniel.net/PV2Web/marge?&view=PV/detailDC/HostedAdmin&eid=105854>)