

THE Green Economy

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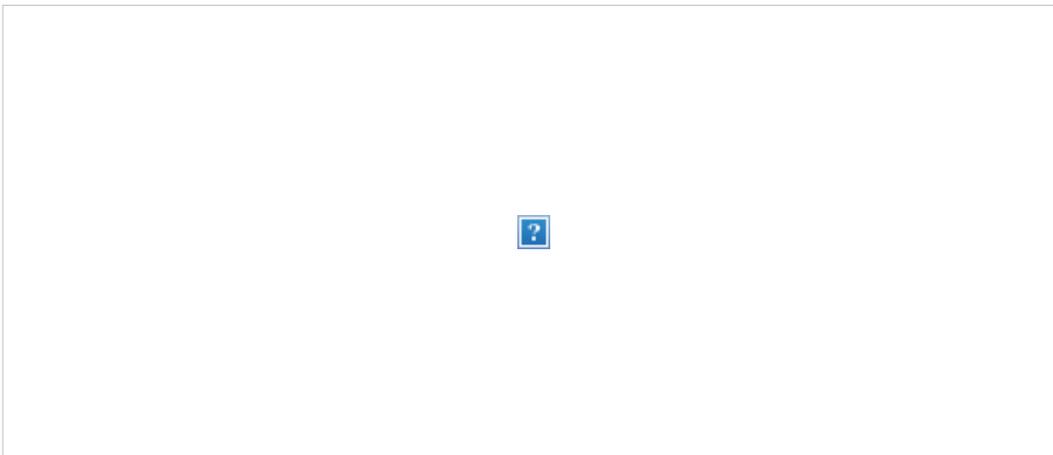
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Making Money: Invest on “Someone Else’s Roof”



Who wouldn't want to install a solar thermal system when there's no upfront costs?

If your business doesn't use enough hot water—for manufacturing, cleaning or other uses—the option is to become an investor in a local project. Either way, the starting point is finding the right partners: installers and developers who know their way around the often complex financing that makes solar thermal a win for investors, tenants, owners, developers and utilities. Based on a recent project in North Carolina, Solar thermal looks like a great bet with lots of upsides.

Advantages of Solar Thermal

Unlike solar panels (photovoltaics), commercial and residential solar thermal uses the sun to heat water instead of generating electricity. The sun heats a fluid, akin to anti-freeze, threaded through a system of tubes on large panels on a



carbon reduction.

New Diamonds: Wealth from Carbon Reduction

New Diamonds: Wealth Creation through Carbon Reduction. Strategies, technologies and ideas for



cash on hand — look for new opportunities, readers and experts chime in on where to put corporate investments.

Corporate Investing in a Time of Record Cash

How to invest in an evolving economy? As businesses — many of whom have record levels of



What's Next?: January 2012

Companies, readers and analysts had a lot to say about what happened in 2011 and what it means for

rooftop. The heated fluid is then piped through boilers filled with water and back up to the roof where it is re-heated. Heated fluid and water never touch, so that the water is not contaminated by the circulating fluid. It is a simple technology with many advantages.

- “Here now” technology. Unlike photovoltaic’s, solar thermal is unlikely to see major improvements nor are there competing technologies with multiple trade-offs.
- Low-cost answer for an otherwise high operational expense. According to the [National Renewable Energy Lab](#), energy heating and storing hot water typically costs America 3.5 quadrillion BTUs of energy, or at least 6% of the average commercial building’s energy bill.
- Provides own storage. Water heated during a sunny day can be used during the evening because the water in the well insulated tanks stays hot even when the sun stops shining. In one hotel installation, most of the hot water heated during the day is stored overnight and used during the morning “shower rush”.
- Higher and faster IRR than other, more complex solar technologies, because of the relative simplicity.
- Easy to run and maintain because it contains few moving parts
- Uses no rare earth or strategically valuable elements such as silicon or mercury.
- The fluid is low or non-toxic, and can easily and safely be disposed of at the end of life of the project.

Investing: How it Works

For businesses, investing in solar thermal projects brings tax credits, depreciation, cash flow and community benefits. One example of a project financed by several investors is the [Glen Rock Depot](#) workforce housing in North Carolina. With a total of 60 separate solar thermal panels in the installment, the project provides a panel for each apartment, so dwellers have control over their hot water costs. While the system will heat all the water for bathing, laundry and dishwashing, any overage due to lengthy bad weather or overuse will be reflected in the back-up utility costs.



The project has been developed through [FLS Energy](#), a solar thermal and photovoltaic company based in Asheville, North Carolina. They worked with an experienced syndication partner—[CityScape Capital Group](#) in El Segundo, California—to complete a complex financing that included investors such as Bank of America.

Paul Hoffman, Managing Director at CityScape said: “Companies that invest in renewable energy projects receive a reduction in their carbon footprint, create jobs in the local economy, and benefit their own bottom line for shareholders.”

There are three principal financial benefits for investors:

- Tax credits

2012. Read the best of the reader’s responses, along with interviews with Panasonic, Mohr Davidow, Jones Lang LaSalle, Duke Energy, Acorn Energy, and Advantage for Analysts.

- Depreciation
- Cash flow that is consistent and efficient

According to Brownie Newman, FLS Director of Project Financing, solar—even solar thermal—requires a complex set of mathematical equations to determine how much an investor will contribute, because there are many “moving parts”. By combining FLS’s significant experience in both development and installation, with CityScape’s financial expertise, they were able to bring the project to completion with benefits for all parties.

Tax Credits

A back of the napkin calculation shows that syndicate investors will ante up cash equivalent to the tax credits available for the project. In this case, North Carolina provided 35% and the Federal credit was 30%. This provided 65% of the total investment. On a system like Glen Rock, the project installation costs were about \$300,000, so the credits yielded around \$195,000.

Typically, a local developer can’t use such large tax credits because the credits significantly exceed the developer’s income tax liability. By partnering with large institutional investors, like banks, a win-win partnership is formed. In some cases, investors can choose to spread the tax credits over several years, guaranteeing predictable, long term tax benefits.

Depreciation

In the case of depreciation, size matters. “The equipment depreciates over a 5-year period and that depreciation shield can be monetized and has value to someone who can use the losses to offset other income from other areas. Most developers can’t use depreciation on this scale,” says Hoffman, but often large investors can.

Cash Flow

Another major benefit is predictable, reliable cash flow. In the case of Glen Rock, the partnership maintains ownership of the project, leasing the panels to the building. The building pays for the lease through tenant fees with are stabilized through agreements with the local utility as well as FLS, which manages the maintenance.

The energy that is not consumed by the building, due to the panels on the roof, is covered under a 12 year Power Purchase Agreement (PPA) with the local utility. For Glen Rock, the utility is incented to purchase the Glen Rock output through North Carolina’s Renewable Portfolio Standard (RPS) which requires local utilities to show a set percentage from renewable energies. The State RPS has created a market for Renewable Energy Credits (RECs), which the utility purchases. RECs not only help them meet their RPS standards, but also decrease the capital costs of investing in their own projects. In the case of solar thermal, with the storage capacity of heated water, the project also helps balance peak



FLS's Brownie Newman on the roof in Asheville

demand when the draw on the grid is highest. Since utilities must build to peak capacity, anything that lowers energy demand, such as hot water used for washing dishes during mid day, is a boon for utilities. In addition, the utility buys back the BTU equivalents from Glen Rock at a set price. Since utility prices are likely to rise, long term agreements can benefit the utility down the line.

As Brownie explains, “Duke has committed to purchasing all of our RECs for a ten year period at \$40 per REC per year, which is equivalent to about \$7,200 annually.” He added, “We recoup our investment through the PPA within 2-3 years.”

At the end of the PPA, the building owners can renew the agreement, choose to purchase the system from FLS and CityScape, or ask to have the installation removed from the building if it no longer benefits them. However, FLS’s Newman believes that “We think it is likely we will be operating it at their facility for 20 to 30 years for long-term revenue.”

Finding projects and partners

There are multiple places to start looking for projects. Taking a drive around the community can provide insights into who has the expertise in such projects. Syndication and developers know who are doing projects and where the opportunities lie, as do utilities.

Syndication

Syndication partners, in addition to financing specific projects, can help developers to bring the costs down on smaller scale renewable projects. Companies like CityScape are boutique organizations working in a small niche market, focusing on smaller scale projects in the \$5 million to \$25 million range.

“In the case of the Glen Rock project, we provided a fund that allowed FLS Energy to drop individual, smaller scale deals into the fund. This created the economies of scale that allowed them to get top tier pricing for smaller scale, one-off transactions,” explains Hoffman.

Developers

Even in the struggling economy, there are project developers who have financial knowledge but little or no technical project installation expertise to back it up. Companies like FLS, which has been developing solar thermal and photovoltaics for over 12 years, has already tried and tested options and made the mistakes endemic to all early technologies. Between their very large installation at Camp La Jeune in North Carolina, Food Lion or a solar project on a landfill, they understand the financing as well as the installation opportunities and perils

Developing your own project

Brownie talked about the [Proximity Hotel](#) in

Greensboro, the first **LEED** Platinum hotel in the US. The owner was adamant that the solar panels had to be hidden in order not to rile the community or visitors. FLS agreed and designed the project. At almost the last minute, the hotel owner changed his mind and said that everyone was talking about solar, and he had realized that panels on his roof were a draw, not a drawback. He finds that a new breed of cost savvy eco-tourists would rather vacation in North Carolina at a hotel that has invested in sustainable technologies, rather than travel to Borneo to ride a canoe down an endangered river.



Since FLS was able to help the hotel bring together a financing package that minimized the hotel's upfront costs, it proved to be a win for everyone. For many companies, their presence in the community is enhanced by projects that can be seen and that provide a benefit beyond the great financial story. One of the reasons that **Bank of America** is an investor in Glen Rock is that they feel that this is the kind of project that will help promote the bank's presence and commitment to the local community.

Investing now for tomorrow

For any company with a tax appetite, the investment opportunities abound. In addition, a strong desire to see local economic growth and environmental improvement motivates investors to put money into their own communities. Renewable energy projects, like Glen Rock, provide local jobs, growth in the alternative energy market, benefit the environment, and of course, improve the bottom line for investors. As many from the hospitality sector, industry, government, the military and others have discovered, investing now in such projects provides the proverbial triple bottom line: profit, people and planet.

As Newman said, "This [Glen Rock workforce housing project] has completely transformed our company's business. We think this is really exciting. We've shown what's possible, even for community redevelopment projects."

*By Maryruth Belsey Priebe, Senior Editor, THE GREEN ECONOMY
and A. Tana Kantor*



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[...] Energy and Mountain Housing Opportunities were featured in The Green Economy as a model for solar investing. FLS Energy is an amazing company both for what they do and who [...]

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