



## **Financial Committee**

## **Best Practices**

**November 2012**

*Research for best practices regarding financial options for Broward County including a summary of findings with links to reports, documents, and references*



## Go SOLAR BROWARD ROOFTOP SOLAR CHALLENGE

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## Disclaimer

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## Go SOLAR Grant Requirements for Solar-Friendly Financing

The Broward County Go SOLAR! Broward Rooftop Solar Challenge Statement of Project Objectives (SOPO) includes the following objective which addresses the investigation of solar financing options and best practices:

**Objective 3:** Investigate potential financing options for the installation of rooftop photovoltaic (PV) systems in residential and small commercial structures, identify the benefits and challenges of each option and provide information to stakeholders.

This document is presented in fulfillment of **Sub-Task 3.2:** Develop and make available best practices regarding solar financing models, including residential PACE or other financial incentive programs.

## Executive Summary

According to the Florida Solar Energy Center, Florida has 85% of the maximum photovoltaic (PV) potential of any place in the country. Although residents of the “Sunshine State” should be able to easily generate power from PV systems, Florida has historically lagged behind other states (e.g., California, New Jersey) in adopting solar power. The availability of financing, the low cost of electricity and the current regulatory environment in Florida are factors contributing to slow adoption of the technology. This document contains examples of financing models and incentives for rooftop solar photovoltaic (PV) programs from around the country and within the State of Florida. In addition, we have included the results of a Broward Go SOLAR financing survey conducted to understand the perspective of local property owners, solar industry representatives and financial institutions. Some general recommendations for improving solar PV financing in Florida are provided.

A variety of financing models and incentives exist across the country for residential and small commercial solar PV installation. Many have proven effective in stimulating growth in the rooftop solar PV market such as power purchase agreements, solar leasing, Feed-in-Tariffs and renewable portfolio standards. Financing models have been most successful in markets with relatively high energy costs (~\$0.20 /kWh) where the price point for installing solar provides a balanced cost-benefit ratio and a return on investment occurs in a 10-15 year timeframe.

The solar market in Florida has a number of challenges. Florida and the service areas of Florida Power and Light, in particular, have relatively inexpensive electricity cost (~\$0.11/kWh). Early adopters of solar PV in this state were able to take advantage of a now defunct state rebate program to bring down total installation costs. Mechanisms for financing the upfront costs are limited, potentially due to the long term return on investment. Another challenge is that Florida has not yet set a renewable portfolio standard so few regulatory incentives exist to encourage solar PV adoption. In addition, the Florida Public Service Commission prohibits investor-owned utilities, solar vendors and third-party financing groups from using some the model financing programs successful in other parts of the country. A small number of Florida’s municipal-owned and cooperative utilities have shown leadership in adopting financing programs such as Feed-In-Tariffs and utility-based loan programs to encourage installation of solar and create distributed generation networks. Local incentives, tax credit programs and third-party financing options are discussed.

For the past two years, Broward County has been researching viable option to create and operate an energy efficiency financing program for residential and small business property owners within the existing regulatory environment. Existing financing programs in the state include three Property Assessed Clean Energy (PACE) Programs and one Community Development Financial Institution. These nascent programs are awaiting their first applicants. The additional issues related to the Federal Housing Finance Agency and PACE have further limited the utility and creation of PACE programs within the state.

A Broward Go SOLAR finance survey and workshop conducted with property owners and the solar industry revealed a number of concerns regarding and recommendations for improving financing in this market. Policy, regulatory, and fiscal incentives for solar were highlighted especially related to a renewable portfolio standard, increased opportunity for third party financing and flexibility in defining who can “sell” electricity. Education of all stakeholders on financing options and increasing the number and diversity of those options, including PACE type programs, was also considered of high importance. While existing incentive programs are important for marketing and growing interest in solar, low interest financing will be critical to maintaining a solar industry in Florida.

In closing, as the price of solar PV installation becomes more competitive, Florida will likely be an active market for solar installation. However, the solar market in this state has a number of challenges including inexpensive electrical rates, limited regulatory incentives and prohibitions on model financing programs successful in other parts of the country. While a small number of Florida’s municipal-owned and cooperative utilities have shown leadership in adopting financing programs such as Feed-In-Tariffs and utility-based loan programs, the larger investor-owned utilities have not adopted or been able to adopt such programs. The review of these financing and incentive models highlights the need to tailor options to the economic and regulatory realities within a given jurisdiction.

## Introduction

According to the Florida Solar Energy Center, Florida has 85% of the maximum photovoltaic (PV) potential of any place in the country. Although residents of the “Sunshine State” should be able to easily generate power from PV systems, Florida has historically lagged behind other states (e.g., New York, New Jersey) in adopting solar power. As South Floridians come to recognize the value of retrofitting their homes and businesses for energy efficiency, the market is beginning to shift to solar energy solutions. The cost of installing and maintaining solar PV systems remains high and continues to pose a major barrier to widespread adoption of the technology. In recent years, state and federal tax credits/deductions and rebates have aided motivated property owners who were early adopters of the technology. While incentive programs have demonstrated the clear demand, they are limited to those who can pay the full up-front costs of rooftop solar PV installation. For this reason, a variety of financing mechanisms are needed to make solar PV a realistic option for energy efficiency retrofit for more residential and commercial properties.

A variety of financing models exist in other parts of the country for residential and small commercial solar PV installation but many of them are not allowable for investor-owned utilities or solar vendors in the State of Florida. For the past two years, Broward County has been researching viable opportunities to create and operate an energy efficiency financing program that will provide low cost funding to facilitate the integration of renewable energy sources, installation of energy efficient devices, and implementation of other energy conservation strategies for residential and small business property owners. Research has revealed an increasing array of low cost energy efficiency finance strategies and programs within the State of Florida which include the installation of rooftop solar PV as a financeable option. These strategies generally fall into one of the following five categories: Property Assessed Clean Energy (PACE); Community Development Financial Institutions (CDFI); bank and vendor-based financing, utility loan and rebate programs; and performance-based incentives.

Examples of model programs are summarized within this document and more detailed information from the Database of State Incentives for Renewables & Efficiency (DSIRE – [www.dsireusa.org](http://www.dsireusa.org)) is provided in the Appendix. In this assessment, several potential options have emerged that the County might utilize to advance an energy efficiency finance program locally; these involve potential partnerships with governmental entities, quasi-governmental entities, and public or private lenders/service providers. More complex financing options, especially related to tax equity and large commercial applications, are touched on briefly.

## Financing Programs

### Property Assessed Clean Energy (PACE) Programs

Section 163.08 (4) Florida Statutes Supplemental authority for improvements to real property allows the State and local governments to move forward with the implementation of residential Property Assessed Clean Energy (PACE) or other financial incentive programs. PACE financing allows residential and commercial property owners to access capital for clean energy and energy-efficient improvements with the issuance of an “assessment” on their property tax bill. However, PACE Programs have been substantially hindered due to objections raised by the Federal Housing Finance Agency regarding the seniority of the PACE assessment to a Federal Housing Authority (FHA) loan. As such, PACE and PACE-like program financing is, for the most part, currently limited to commercial owners, those free of a residential mortgage, and non-Fannie Mae/Freddie Mac residential borrowers. While default on PACE program loans has been reported at less than 1%, there exists the potential for assessments not be collectable as liens on the property, with the program administrator potentially assuming greater risk of collection. Despite the continued federal limitations on PACE programs, several prominent program options have emerged that Broward County might utilize to advance an energy efficiency finance program.

#### PACE Green Corridor

A PACE Commercial Consortium was established to provide long-term funding to advance renewable energy installations and energy efficiency retrofits with a focus on the commercial sector. According to a briefing document prepared by Energi Insurance Services, Inc, the consortium includes financing institutions, an insurance partnership, and energy solutions services administered by Ygrene Energy Fund. The Consortium will initially invest \$550 million in funding for cities within a pilot “Green Corridor” in Miami-Dade County and with an additional \$100 million in funding for a parallel effort in the City of Sacramento, CA. The south Florida start-up project has been organized by the Town of Cutler Bay and includes Palmetto Bay, Pinecrest, Coral Gables, and South Miami. The Town of Cutler Bay was recently successful in its efforts to gain legislative authority to create a district to provide a Financing Initiative for Renewable and Solar Technology (FIRST). The establishment of the energy finance district will allow businesses and citizens in participating areas to voluntarily opt-in to the program and thereby seek funding for solar panel installations, wind generators, insulation or shutters, and other eligible improvements.

Bonds are issued by the special district and backed by property tax liens on the residences of owners who are awarded PACE loans from the bond pool. The property owner repays the loan over a 10, 15 or 20-year period through an increase on their annual property taxes approximately equal to one-twentieth of the loan plus interest. For many homeowners, the annual energy cost savings they will realize from the retrofitting will exceed the cost of the annual repayment costs

In this model program, the Ygrene Energy Fund assumes all financial liabilities, with no financial participation or bond requirements on the part of the participating local governments. The program is delivered to ensure that annual energy cost savings from the retrofitting will exceed the cost of the annual repayment costs as determined by an energy audit conducted prior to funding approval. Ygrene services also include contractor certification and training, marketing outreach, WEB-based administrative and audit software and customer support.

### **Florida PACE Funding Agency**

The Florida PACE Funding Agency (Agency) was formed in June 2011 by joint action of the City of Kissimmee and Flagler County and the execution of a master bond resolution authorizing the issuance of revenue bonds or obligations for the purpose of providing funds to finance qualifying improvements. The Agency was created to facilitate the implementation, planning, development, funding, financing, marketing and management of a statewide finance platform so that counties and cities could take advantage of a uniform, scalable program that encourages energy retrofits by property owners. The Agency has employed the services of Bryant Miller Olive to validate the Agency's ability to issue bonds to fund the various voluntary financing agreements entered into pursuant to general law. A master bond resolution will authorize the issuance of not-to-exceed \$2 billion of revenue bonds in various series. As with other PACE programs, property assessments will be sized to repay the debt.

### **GreenBiz Energy Collaborative Program**

The GreenBiz Energy Collaborative Program was created by the Town of Lantana in partnership with the Greater Lake Worth and Greater Boynton Beach Chambers of Commerce and is supported by EcoCity Partners, L3C to deliver a commercially-based PACE program. The team from EcoCity Partners includes Renewable Funding providing energy financing expertise and EcoChamber, the non-profit global green chamber of commerce. The team will create both the financing and the green business certification program that participants can use to market the green goals they achieve. The initiative will leverage up to \$15-million in private bank financing to enable businesses to complete energy efficiency or renewable energy projects on their buildings and facilities, which should result in lower energy costs while generating new jobs for local contractors. The Program is available to other municipal and county governments in Florida who want to opt-in and provide these benefits to their local businesses.

### **Financial Institution Lending**

Property owners can turn to their local bank or credit union to arrange a home equity loan or take out a second mortgage to finance installation of a solar array. According to the Broward County Financing Survey (discussed later in this document), the understanding of financial institutions of solar as commodity and the credit worthiness of property owners are barriers to lending for solar PV. Even so, this type of lending is occurring on a limited basis.

## **Community Development Financial Institutions (CDFI)**

Community Development Financial Institutions (CDFIs) promote economic development by providing communities with access to capital through an array of financial services in their target areas. These include mortgage financing, financing for building rehabilitation, commercial loans to small and microenterprise businesses, and financial services needed by low-income households and businesses in the target areas. Partners receive Community Reinvestment Act Credits for their investments, with 60% of loans to benefit low and middle-income (LMI) communities (a CDFI requirement). Approximately 30% of urban Broward County is designated as an LMI community.

St. Lucie County has chosen to employ a CDFI finance model and is partnering with a non-profit organization to expand the well-established CDFI into the green sector. In this case, local financial institutions and community leaders will set up the non-profit Solar and Energy Loan Fund and seek certification as Community Development Financial Institution (CDFI) through the U.S. Treasury Department. This is not a government program, but a public-private partnership with a board of community leaders. This process was facilitated by the services of the D.C. Group of South Florida and was funded with an initial \$2.9 million in EECBG funds distributed through a revolving loan fund. Once the County's Solar Energy and Loan Fund is awarded CDFI status, it will have access to a committed pool of public and private monies—from financial partners including PNC, SunTrust, Oculina Banks, and IBM/PGA Credit Union—worth \$20 million.

## **State/City-based Financing Models**

### **The Keystone Home Energy Loan Program - Keystone HELP®**

The Pennsylvania Treasury Department, PA Department of Environmental Protection and the PA Housing Finance Agency support the Keystone HELP® program. The program offers low interest loans for energy efficiency home improvements. These include heating and cooling systems, insulation, windows, and "whole house" improvements and geothermal heat pumps to eligible residents. The amount and exact interest rate depends on the type of retrofit, ranging from 2.99% to 8.99% with terms from 3 to 20 years. Keystone HELP® is administered by AFC First Financial Corporation, a Pennsylvania energy efficiency lender. AFC offers non-Keystone loans for other energy improvements including solar at interest rates from 6.375% to 8.875%. While the Keystone HELP program excludes solar, it is demonstrative of a targeted state-funded loan program for energy efficiency retrofit.

### **Warehouse for Energy Efficiency Loans (WHEEL)**

The Energy Programs Consortium and the National Association of State Energy Officials established the Warehouse for Energy Efficiency Loans (WHEEL) program. Its main objective is to deliver more capital at a lower cost to state and utility-sponsored energy loan programs by

creating a secondary market for residential clean energy loans. WHEEL purchases unsecured residential energy efficiency loans originated in participating programs and brokers market sales of the loans. By aggregating energy loans, WHEEL supports the issuance of investment grade rated securities. This keeps costs low and accesses capital on a national scale. In addition, this program helps establish public performance data on energy loans aiding in the calculation of investment risk. If the percentage of loan payback is high, investor demand may increase and further lower rates for consumers.

### **Milwaukee Shines**

Milwaukee Shines is the City of Milwaukee Wisconsin's solar program which includes a financing component. In 2008, Milwaukee was designated as a Solar America City and has been working to expand solar energy use through a comprehensive, citywide approach. This has included the Milwaukee Power Pack, a limited time solar purchase program to help reduce the cost of solar energy and support local solar PV and solar water heater manufacturers. The financing component includes a partnership with a local credit union with the City providing a loan loss reserve. The City also offered a \$1,000 incentive to the first 20 applicants of the solar loan program to install a solar water heater or up to a 6 kW PV system. The loan terms are up to \$20,000 for a maximum 15 year term at an interest rate of prime plus 1.5% to 2.25%. In a recent webinar on the topic, program administrators noted that the availability of financing alone was not sufficient to create demand. A very viable outreach and marketing program is imperative to ensure success further noting that solar contractors needed additional training to improve their marketing abilities.

### **Lauderhill Revolving Loan**

The City of Lauderhill within Broward County offers Interest Free Energy Appliance loans through a municipal revolving loan program. Homeowners purchasing Energy Star appliances or new tankless water heaters, solar photovoltaic systems and solar water heating systems are eligible for loans from \$400 to \$2,000. Loan funds must be repaid within a two year period. Loan funds are made payable directly to the retailer and must be paid back within a two year period. For Solar Powered Systems, 10% of the costs are retained until submittal of a signed Completion Certificate and copies of all required city permits.

### **Utility-based Loan Programs**

According to the Database of State Incentives for Renewables and Efficiency, Utility Loan Programs are also available through the following utilities in the state: Orlando Utilities Commission, Gainesville Regional Utilities, City of Tallahassee Utilities and Clay Electric Cooperative, Inc. These utilities provide their customers with low-interest loans for solar photovoltaic (PV) systems and solar water heating (SWH) systems. Customers may borrow up to \$7,500 for a SWH system or up to \$20,000 for a PV system, and loans are repaid over time as fixed payments on customers' monthly utility bills. Interest rates for SWH systems vary

from 0% to 4% over a term ranging from three years to seven years. Interest rates for PV systems vary from 2% to 5.5% over a term ranging from three years to 10 years.

Another example for financing water heaters, which could potentially be applied to solar PV, is through a joint program between Regenes Power and the City of Lakeland, FL. Lakeland Electric customers who own their home and have roof space exposed to the south are eligible. A solar collector is installed on the customer's roof at no cost with a new 80 gallon hot water tank replacing the existing tank. The entire system is maintained for free. The homeowner pays a solar service fee of just \$34.95 a month on their utility bill. The sun heats the water and is stored in the tank which has electric back-up heating available if needed. Immediate cost benefits are realized for households of 4 or more at a low long-term flat rate that never goes up.

## **Third Party Financing**

### **Solar Contractor-based Financing**

A popular model for providing short term loans is the vendor-based financing model. The most familiar example is the ability of car dealerships to offer and process a loan for a new car. According to the Broward County Financing Survey (discussed later in this document), few if any solar contractors are offering financing due a lack of interest on the part of financing institutions, the current market demand and the credit worthiness of property owners.

### **Solar Power Purchase Agreement (PPA)**

A solar Power Purchase Agreement (PPA) is a financial arrangement in which a third-party developer owns, operates, and maintains the PV system, and a host customer agrees to site the system on its roof or elsewhere on its property and purchases the system's electric output from the solar services provider for a predetermined period. This financial arrangement allows the host customer to receive stable, and sometimes lower cost electricity, while the solar services provider or another party acquires valuable financial benefits such as tax credits and income generated from the sale of electricity to the host customer (see Benefits and Challenges table below).

With this business model, the host customer buys the services produced by the PV system rather than the PV system itself. This framework is referred to as the "solar services" model, and the developers who offer PPAs are known as solar services providers. PPA arrangements enable the host customer to avoid many of the traditional barriers to adoption for organizations looking to install solar systems: high up-front capital costs; system performance risk; and complex design and permitting processes. In addition, PPA arrangements can be cash flow positive for the host customer from the day the system is commissioned.

Florida Legislation presently does not allow Power Purchase Agreements whereby the PV system is owned by a third-party (not owned by the utility or site host).

<b>Benefits &amp; Challenges of Solar Power Purchase Agreements</b> (Adapted from <a href="http://www.epa.gov/greenpower/buygp/solarpower.htm">http://www.epa.gov/greenpower/buygp/solarpower.htm</a> )	
<b><i>Benefits for Host Customer</i></b>	<b><i>Challenges for Host Customer</i></b>
<p>No upfront capital cost.</p> <p>Predictable energy pricing.</p> <p>No system performance or operating risk.</p> <p>Projects can be cash flow positive from day one.</p> <p>Visibly demonstrable environmental commitment.</p> <p>Potential to make claims about being solar powered (if associated RECs are retained).</p> <p>Potential reduction in carbon footprint (if associated RECs are retained).</p> <p>Potential increase in property value.</p> <p>Support for local economy and job creation.</p>	<p>More complex negotiations and potentially higher transaction costs than buying PV system outright.</p> <p>Administrative cost of paying two separate electricity bills if system does not meet 100 percent of site's electric load.</p> <p>Potential increase in property taxes if property value is reassessed.</p> <p>Site lease may limit ability to make changes to property that would affect PV system performance or access to the system.</p> <p>Understand tradeoffs related to REC ownership/sale.</p>

### **Solar Leasing**

A solar lease is a legal contract in which a homeowner leases solar photovoltaic panels from a provider. In this agreement, the homeowner does not have to pay any upfront costs, just a flat monthly fee to lease the panels. A typical solar lease lasts anywhere between 15-25 years. Since the monthly cost of the lease does not change, the homeowner does not have to worry about inflating energy rates. At the end of the contract, homeowners may have the choice of renewing the contract, purchasing the system, or having the equipment removed.

A solar lease has no upfront costs, allowing the lessee to save money from the day the system is installed. The monthly lease payment is the only cost, protecting the customer from inflating

energy rates and swings in the market. The panel provider assumes all risks and responsibilities associated with owning the system. They perform all maintenance free of charge to the homeowner, assuring that the system is always operating at optimal levels. The overall savings potential is less than if the customer paid in full. Just like any financing plan, a premium is paid for the privilege to pay the costs over time. Also, solar leases are only available in certain areas.

<b>Comparison of Three Solar Leasing Arrangements</b> (Adapted from <a href="http://www.residentialsolar101.org/where-can-i-get-solar-lease/">http://www.residentialsolar101.org/where-can-i-get-solar-lease/</a> )			
<b>Lease Terms</b>	<b>Sungevity</b>	<b>SolarCity</b>	<b>SunRun</b>
Length of Lease	10 to 20 years (with 5 year extension option)	20 years (with 5 year extension option)	18-20 years
Credit Score Requirements	FICO score of 680 or greater	FICO score of 700 or greater	FICO score of 700 or greater
\$0 down option	√	√	√
Free Maintenance and Cleaning	√	√	√
Free Monitoring	√	√	√
Insurance	√	√	√
Performance Guarantee	√	√	√
Annual Lease Payment Increase	2.9%	3.9%	2.9%
What happens if I sell my house before the end of the lease	<ul style="list-style-type: none"> <li>• Transfer to new homeowner</li> <li>• Prepay remaining lease payments and add it to the asking price (after year 6)</li> <li>• Prepay the remaining lease payments and have it removed for free (after Year 6)</li> </ul>	<ul style="list-style-type: none"> <li>• Transfer to new homeowner</li> <li>• Prepay remaining lease payments and add it to the asking price</li> <li>• Prepay the remaining lease payments &amp; have it removed for free</li> </ul>	<ul style="list-style-type: none"> <li>• Transfer to new homeowner</li> <li>• Prepay remaining lease payments and add it to the asking price</li> <li>• Prepay the remaining lease payments and have it removed for free</li> </ul>
End of lease options	<ul style="list-style-type: none"> <li>• Renew lease</li> <li>• Sign a new lease with new equipment</li> <li>• Have it removed for free</li> <li>• Buy outright</li> </ul>	<ul style="list-style-type: none"> <li>• Renew lease</li> <li>• Sign a new lease with new equipment</li> <li>• Have it removed for free</li> </ul>	<ul style="list-style-type: none"> <li>• Renew lease</li> <li>• Sign a new lease w/ new equipment</li> <li>• Have it removed for free</li> <li>• Buy outright</li> </ul>

Florida Legislation presently does not allow for solar leasing whereby the PV system is owned by a third-party (not owned by the utility or site host).

<b>A Comparison of Solar Leasing versus Equipment Purchase</b> (Adapted from <a href="http://solarleasevsbuy.com/">http://solarleasevsbuy.com/</a> )		
<b>Benefits/Drawbacks</b>	<b>Solar Lease</b>	<b>Buy Solar</b>
30% Tax Credit	The tax credit goes to the solar leasing company because they own the equipment.	Tax credit applies to the property owners because they own the solar system.
Cash Rebate From Utility Company	The cash rebate goes to the solar leasing company because they own the equipment.	Cash rebate is awarded to the property owners because they own the solar system.
Stable Monthly Cost.	Monthly solar lease payments are increased on an annual basis. An annual lease payment increase of 3.9% each year for 20 years is not uncommon.	Fixed interest payments are available from many sources which can lock in the investment.
Reduction of the Current Electric Bill	A solar system which is currently being recommended by a popular solar leasing company for a \$249.00 per month electric bill in Edison territory would reduce that electric bill by \$117.00 per month. The lease payment would be \$132.00 per month so your monthly savings with a solar lease program would be about \$15.00 per month.	By owning the system, money saved on the property's electric bill will increase over time because electric rates will rise. The savings can be used to pay off the system. Eventually, the full savings will be retained by the property owner for decades to come.

Benefits/Drawbacks	Solar Lease	Buy Solar
Consequences or benefits when selling your home.	If the new home-buyer is unable to qualify for the solar lease or is not interested in assuming a lease on the solar system, the existing owner is obligated to the lease. The lease cannot be broken without financial consequences.	Homes that are sold with a solar system included in the purchase price can sell for more money than homes without a solar system. The system can be moved to the new home or can be sold as part of the home's sale, improving the home's sale price and its marketability.
Solar System Ownership/Equity After Completion Of Financing.	After paying 20 years of lease payments, the property owner will have zero ownership and will have no equity in the solar system. One may have the option of extending the lease payments, or buying the system or having the solar leasing company remove the system from the roof.	Upon paying off the solar system, it will continue to produce free electricity for many years to come. In fact, the solar panels typically come with a 25 year warranty and have a life expectancy of more than 40 years. Inverters which have a 10 year warranty, have a life expectancy of 12 years. Inverters constitute a relatively small percentage of the overall solar system cost and are expected to drop in price over the life of the system.
Renewable Energy Credits (RECs).	The Renewable Energy Credits go to the solar leasing company because they own the equipment.	Renewable Energy Credits apply to the property owners because they own the solar system.
System Maintenance.	No System Maintenance when leasing a Solar System.	A properly installed solar system needs virtually no maintenance other than a good rain or a rinsing off every few months of accumulated dust on the solar panels with a simple garden hose.

## Solar Dividends

The Connecticut Clean Energy Fund (CCEF) and CT Solar Leasing, LLC have combined the CCEF's Solar Rebate program and the financial option of leasing to create an opportunity for qualifying homeowner customers to add solar energy to their homes for the lowest possible cost.

CT Solar Leasing will aggregate and then sell the Renewable Energy Credits it owns which are generated by the customers' solar system as well as others in the CT Solar Lease Program and will set aside a significant portion of the proceeds for the customers' benefit. The value of the RECs is made possible by the Renewable Portfolio Standards adopted in the State of Connecticut. Florida does not currently have a Renewable Portfolio Standard.

## Performance Contracting

Performance Contracting is an attractive way to get large scale energy efficiency retrofits in commercial buildings with little or no capital investment. In many cases, an Energy Services Company (ESCO) performs a comprehensive energy audit on a government or commercial facility. The ESCO recommends retrofits, potentially including solar PV, which will result in significant energy savings for the property owner. The ESCO finances the retrofits and guarantees that they will result in a certain electric utility cost reduction annually. The property owner pays the ESCO from saving on their utility bill over a set term of years. As long as the retrofits perform at the level promised, the property owner costs are neutral. In many cases, performance contracts do not include solar PV because the current energy costs do not allow for a return on investment within a 10 year time frame.

## Incentive Programs

### State and Utility Rebate Programs

A number of incentive programs are, or have been, available for Broward property owners. As noted early, many incentive programs favor those who can afford the upfront costs of the system and therefore are not a substitute for true financing of the investment.

### The Florida Solar Energy Systems Incentives Program

The Florida Solar Rebate Program was a four-year program created by the passage of the 2006 Florida Renewable Energy Technologies and Energy Efficiency Act. The rebate program was designed to incentivize new solar installations by offering various rebates for solar thermal pool heaters, solar hot water heaters, and solar photovoltaic systems. The program was open to both residential and commercial property owners who had to install new solar equipment prior to applying for a rebate. The program offered residents \$100 rebates on solar thermal pool heaters, \$500 for commercial/residential solar hot water heaters, and up to \$20,000 for residential/\$100,000 for commercial solar photovoltaic installations. Over the life of the program,

the Florida Energy Office received over 26,000 applications for solar rebates. During this time, over 1,200 solar systems were installed in Broward County. The majority of the equipment was pool heaters and solar thermal water heaters. It is likely that upfront costs were an important factor in limiting the solar PV installations to 7.5% of the total. While the state rebate program was very popular, available funding was quickly exhausted and the Legislature did not appropriate any additional funding during their 2010 session. As a result, the program closed on June 30, 2010.

### **Florida Power and Light Solar PV and Solar Thermal Rebates**

Several utilities in the state, including Florida Power and Light (FPL), offer several incentives to encourage residential and business customers to install solar water heating and solar photovoltaic (PV) systems on eligible property. The program is open to all business and residential customers, however incentives are not guaranteed. Rebates are provided based on nameplate rating and only apply to systems which are properly certified according to program rules.

Residential rebates through FPL are provided on a flat rate of \$2 per DC watt nameplate rating for PV systems and \$1,000 per system for solar water heating. Business customers who utilize eligible solar water heating systems are eligible for a rebate of \$30 per 1,000 BTU<sub>h</sub> per day. The business rebate for PV systems provides \$2 per DC watt nameplate rating for systems up to 10kW, a rebate of \$1.50 per DC watt nameplate rating for systems 10kW - 25kW, and \$1 per DC watt nameplate rating for all systems larger than 25 kW. All collectors must be approved and certified by the Florida Solar Energy Center (FSEC) and have an FSEC system certification number. There is no minimum or maximum size limit, other than the dollar limit on the rebate.

During the first round of funding in June 2011, more than 300 customers applied for approximately \$5.6 million in solar PV rebates. Available funds were exhausted within the first hour of registration. In Broward County, 35 residential rebates (for \$315,000) and 14 commercial rebates (worth \$495,000) were awarded for solar installation.

### **Performance-based Incentives**

Performance-based incentives (PBIs), also known as production incentives, provide cash payments based on the number of kilowatt-hours (kWh) or BTUs generated by a renewable energy system, paid out based on the number of actual kilowatt hours a PV system produces over some fixed time period (5-10 years). A "Feed-in-Tariff" is an example of a PBI. To ensure project quality, payments based on a system's actual performance are generally more effective than payments based on a system's rated capacity. This approach often reduces cash flow challenges for incentive programs where system benefits charge funding comes in monthly, as incentive funds are parsed out over time instead of in large upfront payments.

Normally under performance-based incentives, the customer does not receive any upfront financing for the PV system. While this may not be truly considered as a financing option, it is a means by which the cost of solar PV installation may be offset.

### **Net metering**

Net metering is the system whereby the power that is produced from a residential solar PV system is actually used in the home first (as an offset to the power bill) and any excess electricity created is fed back into the grid.

In March 2008, the Florida Public Service Commission (PSC) adopted rules for net metering and interconnection for renewable-energy systems up to two megawatts (MW) in capacity. The PSC rules apply only to the state's investor-owned utilities; the rules do not apply to electric cooperatives or municipal utilities. Municipal utilities and electric cooperatives are required to offer net metering, but specific standards are not set by law. Net metering is available to customers who generate electricity using solar energy, geothermal energy, wind energy, biomass energy, ocean energy, hydrogen, waste heat or hydroelectric power.

Customer net excess generation (NEG) is carried forward at the utility's retail rate (i.e., as a kilowatt-hour credit) to a customer's next bill for up to 12 months. At the end of a 12-month billing period, the utility pays the customer for any remaining NEG at the utility's avoided-cost rate. Renewable energy credits (RECs) are the property of the system owner, and customers may sell RECs back to the utility. There is no stated aggregate capacity limit for net-metered systems.

### **Feed-in-Tariff**

Gainesville Regional Utilities (GRU), a municipal utility owned by the City of Gainesville, offers a solar Feed-in-Tariff (FIT) for solar photovoltaic (PV) systems. Modeled on Germany's FIT, GRU purchases energy from qualified PV systems via a standard offer contract at predetermined rates for a period of 20 years, plus the remaining balance of the calendar year in which the contract is executed. Both residential and commercial generators are eligible. Commercial generators can either enter into a FIT agreement or net meter. Residential customers with PV systems less than 10 kilowatts (kW) have the option to enter into a FIT agreement and sell 100% of their electricity to GRU, or to net meter and only send the excess electricity to GRU under the terms established for that program. For those residential customers who choose to net meter, GRU offers a rebate to those who qualify.

For contracts executed in 2012, the fixed rate for the life of the contract started at \$0.24/kWh, \$0.22/kWh or \$0.19/kWh (depending on size and application) and decreased over time. Separate rates are applied for rooftop- or pavement-mounted systems or ground-mounted systems.

## Renewable Energy Credits

The Orlando Utilities Commission (OUC), through its Solar Program, offers to purchase the environmental attributes or renewable energy credits (RECs) from customers who install a photovoltaic (PV) and/or solar thermal energy system on their property. Incentive payments are equal to \$0.05 per kilowatt-hour (kWh) for PV and \$0.03/kWh for solar water heating (SWH) systems and appear in the form of a credit on customer monthly utility bills.

Under this program, the electricity output of the PV system is used on-site and REC payments are based on the system's total output. Any net excess generation produced by PV systems is credited to the system owner at the utility's full retail rate.

Production agreements have an initial term of five years and automatically renew for five-year terms unless terminated by written notice by either party.

## Tax Code Rebates to Defray Solar PV Installation Costs

### 2005 Energy Policy Act

For business owners and developers, the 2005 Energy Policy Act created Section 179D for business owners and developers. This Section of the Internal Revenue Code allows a federal tax deduction for installing specific energy efficient systems in commercial buildings. The tax deduction is worth up to \$1.80 per square foot for improving the energy efficiency of existing commercial buildings or designing high efficiency into new buildings. Commercial properties designed to significantly reduce heating, cooling, water heating, and interior lighting energy costs will benefit the most. Architects or engineers who design buildings may also take advantage of the deduction. In order to be eligible, the building's interior lighting systems, heating, cooling, ventilation, and hot water systems, and building envelope must be certified to reduce the total annual energy and power costs by 50 percent or more as compared to a Reference Building that meets the minimum requirements of Standard 90.1-2001. Because large square footage is required to create significant tax equity and the design or engineering firm must be able to use the tax equity, this type of tax credit is generally not useful for small commercial applications. In addition, solar applications are not eligible for the credit at this time.

### Qualified Energy Conservation Bond (QECBs)

The Qualified Energy Conservation Bond (QECB) was established by the 2008 Energy and Improvement and Extension Act. U S Department of Energy (DOE Guidance) on July 27, 2010, and provides for the use of Energy Efficiency and Conservation Block Grant Program (EECBG) dollars to support QECB. QECB allows for a bond structure to create low percentage loans to residents and businesses to reduce energy consumption that will lead to reduced energy usage,

lower energy bills for business and residents, lower greenhouse gas emissions and lower peak energy demands for utilities. The advantages of QECB are that they create jobs in Green Building Sector; lead to long term sustainability; and reduce energy usage leads to less dependence on foreign oil, which improves national security.

Utilization of the Program requires written confirmation by the State Legislature or an Executive Order from the Governor. Without authorization from the State Legislature or a Governor's Executive Order, per US DOE Guidance, opportunities for local governments, residents and businesses to participate in this bond program may be reduced. To date, Florida has not provided the opportunity for the local governments to participate in this funding option.

## **Housing and Urban Development (HUD's) Section 203(k) Program**

The Federal Housing Administration (FHA), which is part of the Department of Housing and Urban Development (HUD), administers various single family mortgage insurance programs. These programs operate through FHA-approved lending institutions which submit applications to have the property appraised and have the buyer's credit approved. These lenders fund the mortgage loans which the Department insures. HUD does not make direct loans to help people buy homes.

The Section 203(k) program is the Department's primary program for the rehabilitation and repair of single family properties. As such, it is an important tool for community and neighborhood revitalization and for expanding homeownership opportunities. Energy conservation improvements, including solar equipment, are eligible for funding.

## **Broward Go SOLAR Financing Survey**

In order to evaluate and assess financial barriers to installing solar rooftop photovoltaic (PV) systems on residential and small commercial structures, Broward County performed an online survey. Input was solicited from solar PV stakeholders including property owners, solar industry representatives and financial institution representatives to help better understand perceptions and issues regarding investing in solar PV. The survey results are included in the Appendix of Supporting Materials.

## **Property Owner Responses**

Forty-five surveys were completed in the Property Owner and Interested Parties category, 75% of which owned a single family home. While 60.5% of the respondents wanted to be able to install rooftop solar PV, the expense of solar panels and the upfront costs were the highest ranked reasons for waiting to purchase a system. More than half of the respondents were aware of state and utility-sponsored rebate programs and net-metering. Less than half knew about tax

credits and sales tax incentives. Most were aware of financing options such as home equity loans but less than 40% were aware of other options such as energy efficiency mortgages, revolving loan funds and property assessed clean energy (PACE) programs. Respondents would be more likely to pursue financing if they had a better understanding of financing options and if PACE funding was available. When asked what the role of government should be, these property owners most often pointed to making more financing options available including PACE and revolving loan funds. Key general comments from the survey included concerns that property owners understand the full costs and impact of installing rooftop panels, desire to have information in a central repository, and the need for longer term rebate programs.

## **Solar Industry Representative Responses**

Thirty surveys were completed in the Solar Industry Representatives category. According to these respondents, customers most often pay for solar PV using financial reserves or loans. Comments were made on the importance of understanding and expanding third party financing. Customers more often pay in full upfront (70%) and 22% pay in installments in a period of less than one year. Solar industry representatives were more aware of incentives than property owners and 73% noted that incentives always increased their business. Additional comments on incentives noted the disruptive nature of short term rebate programs, concerns about Investor-Owned utility “monopoly” on electricity, and the need to diminish government’s role in the solar industry. Most were aware of financing options such as home equity loans, PACE, and solar leasing. Solar industry representatives (79%) stated their sales staff was trained to talk to customers about the variety of incentives and finance options and that customers were generally aware of fiscal options. Customers often or sometimes asked about long term financing about 50% of the time. The top barriers to vendor-based financing included getting financial support from financial institutions and market scale/volume. Better rebates and incentives were ranked the highest as tools to grow the solar market. Other tools noted include Feed-in-Tariff, allowing others to sell energy, low interest long term financing, power purchase agreements or raising the cost of energy. The most often chosen roles for government included setting a community PV goal, developing PACE program and offering more financing options. Among the comments were options to enact a renewable portfolio standard and allow power purchase agreements. Other general comments included a unified inspection evaluation criteria, job creation through the solar market, need for Feed-in-Tariffs, need to educate property appraisers and realtors, and the ineffectiveness of using of cost avoidance to market solar.

## **Financial Institution Representative Responses**

Only two representatives from financial institution representative responded to the survey. For this very limited number of responses, awareness of incentives and knowledge of financing strategies was slightly higher than that of property owners. Both responded that they were and would continue to be interested in discussing vendor-based financing with solar contractors. The long term return on investment was the number one ranked concern for investing in Solar PV loans. They agreed that reduction in the total cost of solar PV installations was needed to make

financing solar PV more attractive. While PACE style programs would be welcome as an additional solar PV financing instrument, one representative cautioned that the PACE programs should “respect existing mortgage holders' senior liens by seeking their permission to proceed with a PACE project ("lender consent") and should avoid the residential market until regulatory concerns with FHFA, Fannie Mae and Freddie Mac are resolved” or risk having Broward County be “redlined” from access to FHA supported mortgages.

## **Broward Go SOLAR Financing Workshop Recommendations**

On Tuesday October 30, 2012, a Broward Go SOLAR Financing Workshop was held. Solar industry representatives, property owners, and third-party financing representatives were present. The objective of the meeting was to discuss solar PV financing options for residential and small commercial structures and to identify the benefits and challenges of each option. Following a discussion of the preliminary survey results, the workshop participants were asked to provide feedback on fundamental financing issues, barriers and recommendations.

### **Property Owner Finance Issues**

The fundamental solar PV financing issues related to Property Owners included overall expense, upfront costs, a lack of understanding of the financing options, long term return on investment and low cost of energy per kW in our area. Education for the financial community as well as for the realtors and appraisers (see Sandia National Lab – PV value assessment tool) was also identified. Many of the key issues were policy based and related to the need for a renewable portfolio standard in the state and concern over fuel diversity due to the Public Service Commission tendency to favor the lowest cost option without considering other society benefits (air quality, fuel sources, carbon footprint, etc.) beyond rate payer cost. While social equity issues are used to support this approach, new regulations could exempt low income customers from certain types of rate hikes.

Economic issues identified included property owner qualification for financing and low credit scores, the challenge of increased rate payer cost related to adopting Feed-in-Tariffs and an assertion that loans needed to be offered at the interest rate of 3.5% or lower to make the investment in solar panels meet the return on investment.

Incentive options and barriers were also discussed. The current Florida Power and Light Solar PV Rebate was noted to provide too little funding, the uncertainty for the perspective customer of qualifying, and the challenge of not being available continually. Other incentives noted included sale tax exemption and tax credits. Participants expressed frustrations that the state property tax incentive that prevents solar installations from increasing the assessment on your home was still pending approval and implementation. While property-owner incentives from the government were welcome, private enterprise and market forces should drive the market, not incentives.

Current financing options for property owners in Broward County are somewhat limited. Financial reserves and traditional loan instruments (home equity, second mortgage, etc.) were the main options identified. PACE Program were a welcome addition if available locally. Conversely, some participants stated that low interest financing should be attached to the equipment only and not to the property. Vendor-based financing was limited by interest rates and the credit-worthiness of customers. In general, property owner education on finance options was needed.

The group made the following recommendations for the role of government in supporting solar PV financing. The County should reach out to financial industry and create a list of banks offering solar loan for property owners. Programs are needed to better educate realtors and appraisers on the value of solar. In general, we need a better understanding of how third party ownership financing can be used within the existing legal framework of Florida. Government was encouraged to research existing installed solar PV systems to understand how they were financed and to support non-profit organizations who are raising solar PV awareness. On the legislative side, Property Appraisers have a role in advocating for property tax exemption for solar installation. Further, local governments could create a solar fund within government using a revolving loan fund model.

### **Solar Industry Finance Issues**

The Workshop participants were asked to provide feedback on fundamental financing issues, barriers and recommendations related to the Solar Industry. Having a consistent demand for the solar PV product was an issue. Past and present incentive programs have created surges in demand but cannot sustain the industry long term. Few companies that made capital investments under the State Solar Rebate Program were successful when the program ended, resulting in the need for a new wave of initial capital investment to restart the industry.

Financing options was another concern especially in this market where electricity costs are relatively inexpensive. Workshop participants suggested that financial institutions need education/outreach on what solar is about as a commodity. They expressed concerns related to applicant credit scores and associated fiscal risk. One representative emphasized the need for low interest financing at a rate 3.5% or less to keep solar competitive. It was stated that the cost point for solar compared to other energy/fuel sources is likely to be reached in the next 12-18 months. Current profit levels and financial resources limit the ability of solar vendors to pursue contractor-based financing.

The policies of the Public Service Commission were discussed at length especially related to the Renewable Portfolio Standard, who can “sell” electricity and prohibitions or complicated regulations related to solar leasing, community solar and power purchase agreements. Regulations allowing and simplifying third party financing structures would help move the market forward in Florida. Feed-in-Tariffs, effective in other areas in Florida, were encouraged to be considered by the Public Service Commission at a target of \$0.05/kW above current rate.

The Solar Industry Representatives suggested encouraging Feed-in-Tariff programs, adopting a Renewable Portfolio Standard and working to allow Power Purchase Agreements and Community Solar Agreements. Additional suggestions included having FPL fund Solar PV rebates from early cost recovery dollars, eliminating utility monopoly on selling energy and sharing policy/legislative recommendations at local, regional and state scales to increase awareness of issues and get them incorporated into planning documents and legislative platforms.

Solar Industry Representatives saw a number of opportunities for the role that government could play. We discussed using the 1% tax on luxury purchases to fund Energy Efficiency and Conservation programs and create revolving loan programs with low interest (<3.5%). Flexibility in Florida energy legislation could improve tailoring successful programs from other locations to our own region. Local or state level carbon footprint standards were also thought to support the solar market as well as the use of local ordinances, such as the City of Lauderhill requirement to prepare new building stock for solar.

## Conclusions

As the price of solar system installation becomes more competitive, Florida will likely be an active market for solar installation. However, the solar market in this state has a number of challenges including inexpensive electrical rates, limited regulatory incentives and prohibitions on model financing programs successful in other parts of the country. While a small number of Florida's municipal-owned and cooperative utilities have shown leadership in adopting financing programs such as Feed-In-Tariffs and utility-based loan programs to encourage installation of solar and create distributed generation networks, the larger investor-owned utilities have not adopted or been able to adopt such programs. A review of these financing and incentive models highlights the need to tailor options to the economic and regulatory realities within a given jurisdiction.

## Sources and Reference Material

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<http://www.ecocitypartners.com/greenbiz-energy-collaborative>

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Housing and Urban Development (HUD's) Section 203(k) Program

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Keystone Home Energy Loan Program - Keystone HELP®

<http://www.keystonehelp.com/>

Lakeland Solar Hot Water Service

<http://www.solarlakeland.com/>

Lauderhill Revolving Loan

<http://www.lauderhill-fl.gov/green-esl.asp>

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PACE Green Corridor

<http://ygrene.us/districts>

Qualified Energy Conservation Bond

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Solar Leasing

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## Appendix of Supporting Materials

### Applicable Florida Statutes

The 2012 Florida Statutes – 163.08

#### **163.08 Supplemental authority for improvements to real property.—**

(1)(a) In chapter 2008-227, Laws of Florida, the Legislature amended the energy goal of the state comprehensive plan to provide, in part, that the state shall reduce its energy requirements through enhanced conservation and efficiency measures in all end-use sectors and reduce atmospheric carbon dioxide by promoting an increased use of renewable energy resources. That act also declared it the public policy of the state to play a leading role in developing and instituting energy management programs that promote energy conservation, energy security, and the reduction of greenhouse gases. In addition to establishing policies to promote the use of renewable energy, the Legislature provided for a schedule of increases in energy performance of buildings subject to the Florida Energy Efficiency Code for Building Construction. In chapter 2008-191, Laws of Florida, the Legislature adopted new energy conservation and greenhouse gas reduction comprehensive planning requirements for local governments. In the 2008 general election, the voters of this state approved a constitutional amendment authorizing the Legislature, by general law, to prohibit consideration of any change or improvement made for the purpose of improving a property's resistance to wind damage or the installation of a renewable energy source device in the determination of the assessed value of residential real property.

(b) The Legislature finds that all energy-consuming-improved properties that are not using energy conservation strategies contribute to the burden affecting all improved property resulting from fossil fuel energy production. Improved property that has been retrofitted with energy-related qualifying improvements receives the special benefit of alleviating the property's burden from energy consumption. All improved properties not protected from wind damage by wind resistance qualifying improvements contribute to the burden affecting all improved property resulting from potential wind damage. Improved property that has been retrofitted with wind resistance qualifying improvements receives the special benefit of reducing the property's burden from potential wind damage. Further, the installation and operation of qualifying improvements not only benefit the affected properties for which the improvements are made, but also assist in fulfilling the goals of the state's energy and hurricane mitigation policies. In order to make qualifying improvements more affordable and assist property owners who wish to undertake such improvements, the Legislature finds that there is a compelling state interest in enabling property owners to voluntarily finance such improvements with local government assistance.

(c) The Legislature determines that the actions authorized under this section, including,

but not limited to, the financing of qualifying improvements through the execution of financing agreements and the related imposition of voluntary assessments are reasonable and necessary to serve and achieve a compelling state interest and are necessary for the prosperity and welfare of the state and its property owners and inhabitants.

(2) As used in this section, the term:

(a) “Local government” means a county, a municipality, a dependent special district as defined in s. 189.403, or a separate legal entity created pursuant to s. 163.01(7).

(b) “Qualifying improvement” includes any:

1. Energy conservation and efficiency improvement, which is a measure to reduce consumption through conservation or a more efficient use of electricity, natural gas, propane, or other forms of energy on the property, including, but not limited to, air sealing; installation of insulation; installation of energy-efficient heating, cooling, or ventilation systems; building modifications to increase the use of daylight; replacement of windows; installation of energy controls or energy recovery systems; installation of electric vehicle charging equipment; and installation of efficient lighting equipment.

2. Renewable energy improvement, which is the installation of any system in which the electrical, mechanical, or thermal energy is produced from a method that uses one or more of the following fuels or energy sources: hydrogen, solar energy, geothermal energy, bioenergy, and wind energy.

3. Wind resistance improvement, which includes, but is not limited to:

- a. Improving the strength of the roof deck attachment;
- b. Creating a secondary water barrier to prevent water intrusion;
- c. Installing wind-resistant shingles;
- d. Installing gable-end bracing;
- e. Reinforcing roof-to-wall connections;
- f. Installing storm shutters; or
- g. Installing opening protections.

(3) A local government may levy non-ad valorem assessments to fund qualifying improvements.

(4) Subject to local government ordinance or resolution, a property owner may apply to the local government for funding to finance a qualifying improvement and enter into a financing agreement with the local government. Costs incurred by the local government for such purpose may be collected as a non-ad valorem assessment. A non-ad valorem assessment shall be collected pursuant to s. 197.3632 and, notwithstanding s. 197.3632(8)(a), shall not be subject to discount for early payment. However, the notice and adoption requirements of s. 197.3632(4) do not apply if this section is used and complied with, and the intent resolution, publication of notice, and mailed notices to the property appraiser, tax collector, and Department of Revenue required by s. 197.3632(3)(a) may be provided on or before August 15 in conjunction with any non-ad valorem assessment authorized by this section, if the property appraiser, tax collector, and local government agree.

(5) Pursuant to this section or as otherwise provided by law or pursuant to a local government’s home rule power, a local government may enter into a partnership with one or

more local governments for the purpose of providing and financing qualifying improvements.

(6) A qualifying improvement program may be administered by a for-profit entity or a not-for-profit organization on behalf of and at the discretion of the local government.

(7) A local government may incur debt for the purpose of providing such improvements, payable from revenues received from the improved property, or any other available revenue source authorized by law.

(8) A local government may enter into a financing agreement only with the record owner of the affected property. Any financing agreement entered into pursuant to this section or a summary memorandum of such agreement shall be recorded in the public records of the county within which the property is located by the sponsoring unit of local government within 5 days after execution of the agreement. The recorded agreement shall provide constructive notice that the assessment to be levied on the property constitutes a lien of equal dignity to county taxes and assessments from the date of recordation.

(9) Before entering into a financing agreement, the local government shall reasonably determine that all property taxes and any other assessments levied on the same bill as property taxes are paid and have not been delinquent for the preceding 3 years or the property owner's period of ownership, whichever is less; that there are no involuntary liens, including, but not limited to, construction liens on the property; that no notices of default or other evidence of property-based debt delinquency have been recorded during the preceding 3 years or the property owner's period of ownership, whichever is less; and that the property owner is current on all mortgage debt on the property.

(10) A qualifying improvement shall be affixed to a building or facility that is part of the property and shall constitute an improvement to the building or facility or a fixture attached to the building or facility. An agreement between a local government and a qualifying property owner may not cover wind-resistance improvements in buildings or facilities under new construction or construction for which a certificate of occupancy or similar evidence of substantial completion of new construction or improvement has not been issued.

(11) Any work requiring a license under any applicable law to make a qualifying improvement shall be performed by a contractor properly certified or registered pursuant to part I or part II of chapter 489.

(12)(a) Without the consent of the holders or loan servicers of any mortgage encumbering or otherwise secured by the property, the total amount of any non-ad valorem assessment for a property under this section may not exceed 20 percent of the just value of the property as determined by the county property appraiser.

(b) Notwithstanding paragraph (a), a non-ad valorem assessment for a qualifying improvement defined in subparagraph (2)(b)1. or subparagraph (2)(b)2. that is supported by an energy audit is not subject to the limits in this subsection if the audit demonstrates that the annual energy savings from the qualified improvement equals or exceeds the annual repayment amount of the non-ad valorem assessment.

(13) At least 30 days before entering into a financing agreement, the property owner shall provide to the holders or loan servicers of any existing mortgages encumbering or otherwise secured by the property a notice of the owner's intent to enter into a financing agreement together with the maximum principal amount to be financed and the maximum

annual assessment necessary to repay that amount. A verified copy or other proof of such notice shall be provided to the local government. A provision in any agreement between a mortgagee or other lienholder and a property owner, or otherwise now or hereafter binding upon a property owner, which allows for acceleration of payment of the mortgage, note, or lien or other unilateral modification solely as a result of entering into a financing agreement as provided for in this section is not enforceable. This subsection does not limit the authority of the holder or loan servicer to increase the required monthly escrow by an amount necessary to annually pay the qualifying improvement assessment.

(14) At or before the time a purchaser executes a contract for the sale and purchase of any property for which a non-ad valorem assessment has been levied under this section and has an unpaid balance due, the seller shall give the prospective purchaser a written disclosure statement in the following form, which shall be set forth in the contract or in a separate writing:

QUALIFYING IMPROVEMENTS FOR ENERGY EFFICIENCY, RENEWABLE ENERGY, OR WIND RESISTANCE.—The property being purchased is located within the jurisdiction of a local government that has placed an assessment on the property pursuant to s. 163.08, Florida Statutes. The assessment is for a qualifying improvement to the property relating to energy efficiency, renewable energy, or wind resistance, and is not based on the value of property. You are encouraged to contact the county property appraiser's office to learn more about this and other assessments that may be provided by law.

(15) A provision in any agreement between a local government and a public or private power or energy provider or other utility provider is not enforceable to limit or prohibit any local government from exercising its authority under this section.

(16) This section is additional and supplemental to county and municipal home rule authority and not in derogation of such authority or a limitation upon such authority.

**History.**—s. 1, ch. 2010-139; s. 1, ch. 2012-117.

The 2012 Florida Statutes- 366.91

366.91 Renewable energy.—

(1) The Legislature finds that it is in the public interest to promote the development of renewable energy resources in this state. Renewable energy resources have the potential to help diversify fuel types to meet Florida's growing dependency on natural gas for electric production, minimize the volatility of fuel costs, encourage investment within the state, improve environmental conditions, and make Florida a leader in new and innovative technologies.

(2) As used in this section, the term:

(a) "Biomass" means a power source that is comprised of, but not limited to, combustible residues or gases from forest products manufacturing, waste, byproducts, or products from agricultural and orchard crops, waste or coproducts from livestock and poultry operations, waste or byproducts from food processing, urban wood waste, municipal solid waste, municipal liquid waste treatment operations, and landfill gas.

(b) “Customer-owned renewable generation” means an electric generating system located on a customer’s premises that is primarily intended to offset part or all of the customer’s electricity requirements with renewable energy.

(c) “Net metering” means a metering and billing methodology whereby customer-owned renewable generation is allowed to offset the customer’s electricity consumption on site.

(d) “Renewable energy” means electrical energy produced from a method that uses one or more of the following fuels or energy sources: hydrogen produced from sources other than fossil fuels, biomass, solar energy, geothermal energy, wind energy, ocean energy, and hydroelectric power. The term includes the alternative energy resource, waste heat, from sulfuric acid manufacturing operations and electrical energy produced using pipeline-quality synthetic gas produced from waste petroleum coke with carbon capture and sequestration.

(3) On or before January 1, 2006, each public utility must continuously offer a purchase contract to producers of renewable energy. The commission shall establish requirements relating to the purchase of capacity and energy by public utilities from renewable energy producers and may adopt rules to administer this section. The contract shall contain payment provisions for energy and capacity which are based upon the utility’s full avoided costs, as defined in s. [366.051](#); however, capacity payments are not required if, due to the operational characteristics of the renewable energy generator or the anticipated peak and off-peak availability and capacity factor of the utility’s avoided unit, the producer is unlikely to provide any capacity value to the utility or the electric grid during the contract term. Each contract must provide a contract term of at least 10 years. Prudent and reasonable costs associated with a renewable energy contract shall be recovered from the ratepayers of the contracting utility, without differentiation among customer classes, through the appropriate cost-recovery clause mechanism administered by the commission.

(4) On or before January 1, 2006, each municipal electric utility and rural electric cooperative whose annual sales, as of July 1, 1993, to retail customers were greater than 2,000 gigawatt hours must continuously offer a purchase contract to producers of renewable energy containing payment provisions for energy and capacity which are based upon the utility’s or cooperative’s full avoided costs, as determined by the governing body of the municipal utility or cooperative; however, capacity payments are not required if, due to the operational characteristics of the renewable energy generator or the anticipated peak and off-peak availability and capacity factor of the utility’s avoided unit, the producer is unlikely to provide any capacity value to the utility or the electric grid during the contract term. Each contract must provide a contract term of at least 10 years.

(5) On or before January 1, 2009, each public utility shall develop a standardized interconnection agreement and net metering program for customer-owned renewable generation. The commission shall establish requirements relating to the expedited interconnection and net metering of customer-owned renewable generation by public utilities and may adopt rules to administer this section.

(6) On or before July 1, 2009, each municipal electric utility and each rural electric cooperative that sells electricity at retail shall develop a standardized interconnection agreement and net metering program for customer-owned renewable generation. Each governing authority shall establish requirements relating to the expedited interconnection and net metering of customer-owned generation. By April 1 of each year, each municipal electric utility and rural electric

cooperative utility serving retail customers shall file a report with the commission detailing customer participation in the interconnection and net metering program, including, but not limited to, the number and total capacity of interconnected generating systems and the total energy net metered in the previous year.

(7) Under the provisions of subsections (5) and (6), when a utility purchases power generated from biogas produced by the anaerobic digestion of agricultural waste, including food waste or other agricultural byproducts, net metering shall be available at a single metering point or as a part of conjunctive billing of multiple points for a customer at a single location, so long as the provision of such service and its associated charges, terms, and other conditions are not reasonably projected to result in higher cost electric service to the utility's general body of ratepayers or adversely affect the adequacy or reliability of electric service to all customers, as determined by the commission for public utilities, or as determined by the governing authority of the municipal electric utility or rural electric cooperative that serves at retail.

(8) A contracting producer of renewable energy must pay the actual costs of its interconnection with the transmission grid or distribution system.

History.—s. 1, ch. 2005-259; s. 41, ch. 2008-227; s. 16, ch. 2010-139.

## DSIRE Financial Incentives Florida

Information available from [www.dsireusa.org](http://www.dsireusa.org) as of October 2012.

### Corporate Tax Credit

- [Renewable Energy Production Tax Credit](#)

### Green Building Incentive

- [Miami-Dade County - Expedited Green Buildings Process](#)
- [Volusia County - Green Building Program](#)

### Industry Recruitment/Support

- [Miami-Dade County - Targeted Jobs Incentive Fund](#)

### Local Loan Program

- [St. Lucie County - Solar and Energy Loan Fund \(SELF\)](#)

### Local Rebate Program

- [City of Fort Lauderdale - Smart Watts Rebate Program](#)
- [City of Longwood - Raising Energy Efficiency Rebate Program](#)
- [Lake County - Go Green Get Green Energy Efficiency Program](#)
- [Miami-Dade County - Commercial Energy Star Appliance Rebate Program](#)
- [Miami-Dade County - Residential Energy Star Appliance Rebate Program](#)

### Other Incentive

- [Lakeland Electric - Solar Water Heating Program](#)
- [Progress Energy Florida - SunSense Schools Program](#)

### PACE Financing

- [Local Option - Special Districts](#)
- [Miami-Dade County - Voluntary Energy Efficiency and Renewable Energy Program](#)

### Performance-Based Incentive

- [Gainesville Regional Utilities - Solar Feed-In Tariff](#)
- [Orlando Utilities Commission - Solar Programs](#)

### Sales Tax Incentive

- [Solar and CHP Sales Tax Exemption](#)

### Utility Grant Program

- [City of Tallahassee Utilities - Low-Income Energy Efficiency Grant Programs](#)

- [Orlando Utilities Commission - Home Energy Efficiency Fix-Up Program](#)

### **Utility Loan Program**

- [City of Tallahassee Utilities - Efficiency Loans](#)
- [City of Tallahassee Utilities - Solar Loans](#)
- [Clay Electric Cooperative, Inc - Energy Conservation Loans](#)
- [Clay Electric Cooperative, Inc - Solar Thermal Loans](#)
- [Gainesville Regional Utilities- Low-Interest Energy Efficiency Loan Program](#)
- [Orlando Utilities Commission - Residential Solar Loan Program](#)

### **Utility Rebate Program**

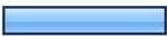
- [Beaches Energy Services - Residential Energy Efficiency Rebate Program](#)
- [Beaches Energy Services - Solar Water Heating Rebate Program](#)
- [Central Florida Gas - Energy Efficient Appliance Rebate Program](#)
- [City of Tallahassee Utilities - Energy Star Certified New Homes Rebate Program](#)
- [City of Tallahassee Utilities - Residential Energy Efficiency Rebate Program](#)
- [City of Tallahassee Utilities - Solar Water Heating Rebate](#)
- [Clay Electric Cooperative, Inc - Energy Smart Energy Efficiency Rebate Program](#)
- [Clay Electric Cooperative, Inc - Energy Smart Solar Water Heater Rebate Program](#)
- [Florida City Gas - Residential Energy Smart Rebate Program](#)
- [Florida Power and Light - Business Energy Efficiency Rebates](#)
- [Florida Power and Light - Residential Energy Efficiency Program](#)
- [Florida Power and Light - Solar Rebate Program](#)
- [Florida Public Utilities \(Gas\) - Residential Energy Efficiency Rebate Programs](#)
- [Florida Public Utilities - Commercial Energy Efficiency Rebate Programs](#)
- [Florida Public Utilities - Residential HVAC Rebate Program](#)
- [Fort Pierce Utilities Authority - Residential Energy Efficiency Rebate Program](#)
- [Fort Pierce Utilities Authority - Solar Water Heating Rebate](#)
- [Gainesville Regional Utilities - Business Energy Efficiency Rebate Program](#)
- [Gainesville Regional Utilities - Energy Efficiency Rebate Program](#)
- [Gainesville Regional Utilities - Solar Water Heating Rebate Program](#)
- [Gainesville Regional Utilities - Solar-Electric \(PV\) System Rebate Program](#)
- [Gulf Power - Commercial Energy Efficiency EarthCents Program](#)
- [Gulf Power - Residential Energy Efficiency EarthCents Program](#)
- [Gulf Power - Solar PV Program](#)
- [Gulf Power - Solar Thermal Water Heating Program](#)
- [JEA - Commercial Energy Efficiency Rebate Program](#)
- [JEA - Green Built Homes of Florida Builder Rebate Program](#)
- [JEA - ShopSmart Residential Rebate Program](#)
- [JEA - Solar Incentive Program](#)
- [Kissimmee Utility Authority - Commercial Energy Efficiency Rebate Program](#)
- [Kissimmee Utility Authority - Residential Energy Efficiency Rebate Program](#)

- [Lake Worth Utilities - Energy Conservation Rebate Program](#)
- [Lake Worth Utilities - Residential Solar Water Heating Rebate Program](#)
- [Lakeland Electric - Commercial Conservation Rebate Program](#)
- [Lakeland Electric - Residential Conservation Rebate Program](#)
- [New Smyrna Beach - Commercial Energy Efficiency Rebate Program](#)
- [New Smyrna Beach - Residential Energy Efficiency Rebate Program](#)
- [Ocala Utility Services - Energy Efficiency Rebate Program](#)
- [Ocala Utility Services - Solar Hot Water Heating Rebate Program](#)
- [Orlando Utilities Commission - Residential Energy Efficiency Rebate Program](#)
- [Progress Energy Florida - Commercial Energy Efficiency Rebate Program](#)
- [Progress Energy Florida - Home Energy Check Audit and Rebate Program](#)
- [Progress Energy Florida - SunSense Commercial PV Incentive Program](#)
- [Progress Energy Florida - SunSense Solar Photovoltaics Rebate Program](#)
- [Progress Energy Florida - SunSense Solar Water Heating with EnergyWise](#)
- [Tampa Electric - Commercial Energy Efficiency Rebate Programs](#)
- [Tampa Electric - Residential Energy Efficiency Rebate Program](#)
- [Tampa Electric - Solar Rebate Program](#)

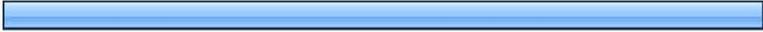
## October 2012 Financing Survey Results

Broward County conducted a Rooftop Solar Photovoltaic (PV) Financing Survey an on-line in the Fall of 2012 to better understand financing issues for three audiences: Property Owners, the Solar Industry and Financial Institutions. Key topics included awareness of financing options, financial barriers to installing Solar PV systems, interaction between solar industry and their customers, the relationship of solar industry with financial institution, and the role of government in supporting the financial side of Solar PV. The results of the 78 surveys submitted are attached.

ou familiar with the Broward County Go SOLAR Rooftop Solar PV Challenge Program? (check one)

		Response Percent
Yes		85.9%
No		14.1%
		answered question
		skipped question

**would like to be able to share the many activities of the GoSolar program with you. What is your GoSolar contact information (check one)**

		Response Percent
Interested in the Broward GoSolar mailing list.		66.7%
Not interested in being added to the list at this time.		10.3%
Would like to be added to the Broward GoSolar mailing list.		23.1%

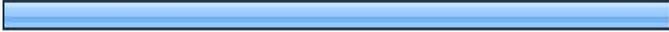
My email address is

answered question

skipped question



**Would like to take the survey designed for: (check one)**

		<b>Response Percent</b>
<b>Owners and Interested Parties</b>		<b>58.4%</b>
<b>Industry Representatives</b>		<b>39.0%</b>
<b>Financial Institution Representatives</b>		<b>2.6%</b>
		<b>answered question</b>
		<b>skipped question</b>



**3. I am a property owner of a: (check one)**

		Response Percent
Townhome	<input type="checkbox"/>	15.8%
<b>Single family residence</b>	<input checked="" type="checkbox"/>	<b>73.7%</b>
Multifamily residence	<input type="checkbox"/>	2.6%
Commercial facility	<input type="checkbox"/>	0.0%
Please my home or facility.	<input type="checkbox"/>	2.6%
Other	<input type="checkbox"/>	5.3%

Other (please specify)

answered question

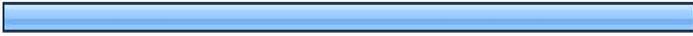
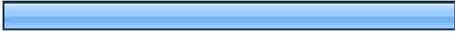
skipped question

**4. I am a property owner of a: (check one)**

Educational Institution

Oct 24, 2012

**Property: (check one)**

		Response Percent
want to be able to install rooftop Solar PV system.		60.5%
already installed rooftop Solar PV system.		0.0%
not currently considering installing a Solar PV system.		39.5%
		answered question
		skipped question

**You have considered investing in a Solar PV system for my property but have not moved forward for the following reasons. Rank your answers by clicking on the pull down box on the left, with #1 being your first choice. You can keep changing your answers in the boxes until the list reflects your priorities. Click N/A if an answer is not applicable.)**

	1	2	3	4	5	6	7	8	9	N/A	Rating Average
Waiting for the price of solar installation to come down.	<b>32.4%</b> <b>(12)</b>	29.7% (11)	16.2% (6)	10.8% (4)	2.7% (1)	2.7% (1)	0.0% (0)	0.0% (0)	0.0% (0)	5.4% (2)	2.26
Can't afford to pay for it all up front and need financing.	<b>24.3%</b> <b>(9)</b>	18.9% (7)	10.8% (4)	5.4% (2)	10.8% (4)	10.8% (4)	5.4% (2)	0.0% (0)	0.0% (0)	13.5% (5)	3.16
Waiting for better rebates or incentive programs.	5.4% (2)	21.6% (8)	<b>35.1%</b> <b>(13)</b>	13.5% (5)	2.7% (1)	2.7% (1)	13.5% (5)	0.0% (0)	0.0% (0)	5.4% (2)	3.51
Concerned that the energy savings will not be worth it.	8.1% (3)	2.7% (1)	5.4% (2)	<b>40.5%</b> <b>(15)</b>	5.4% (2)	10.8% (4)	8.1% (3)	10.8% (4)	0.0% (0)	8.1% (3)	4.65
Concerned about insurance issues or impacts to my roof.	5.4% (2)	2.7% (1)	8.1% (3)	13.5% (5)	<b>35.1%</b> <b>(13)</b>	5.4% (2)	10.8% (4)	8.1% (3)	0.0% (0)	10.8% (4)	4.91
Waiting for the technology to mature and improve.	5.4% (2)	2.7% (1)	10.8% (4)	2.7% (1)	18.9% (7)	<b>32.4%</b> <b>(12)</b>	2.7% (1)	10.8% (4)	0.0% (0)	13.5% (5)	5.19
Property investments are a higher priority than solar panels.	8.1% (3)	16.2% (6)	2.7% (1)	5.4% (2)	8.1% (3)	13.5% (5)	<b>29.7%</b> <b>(11)</b>	5.4% (2)	0.0% (0)	10.8% (4)	4.97
Personal investments are a higher priority than solar panels.	10.8% (4)	5.4% (2)	5.4% (2)	2.7% (1)	5.4% (2)	8.1% (3)	10.8% (4)	<b>35.1%</b> <b>(13)</b>	0.0% (0)	16.2% (6)	5.74
Other	0.0% (0)	0.0% (0)	2.7% (1)	0.0% (0)	2.7% (1)	2.7% (1)	0.0% (0)	8.1% (3)	<b>64.9%</b> <b>(24)</b>	18.9% (7)	8.47

answered question

skipped question

r reasons?

answered question

skipped question

7. Other reasons?

Could blow off in hurricane

Oct 25, 2012

The roof will need replacement soon.

Oct 23, 2012

**Aware of the following Solar PV rebates or incentives described on [www.dsireusa.org](http://www.dsireusa.org), some of which may not be currently available in Broward County or the State of Florida: (check all that apply)**

	Response Percent
Solar PV rebates previously sponsored by the State of Florida (Program no longer available)	81.5%
Solar PV rebates for commercial and residential properties currently available from Florida Power and Light (FPL)	74.1%
Net Metering and Renewable Energy Credits (The electricity generated by the PV system is used by the system owner and REC payments are based on the system's total output. Net metering allows the system owner to receive credit for any net excess generation produced by PV systems is credited to the system owner at the utility's full retail rate.)	51.9%
Federal Residential Renewable Energy Tax Credit	48.1%
State of Florida Corporate Renewable Energy Production Tax Credit	25.9%
State of Florida Sales Tax Exemption for Solar Equipment	25.9%

Other (please specify)



or pays the upfront costs  
tallation and the property  
ays the vendor back over  
e based on the utility bill  
savings achieved.)



32.0%

uderhill - Revolving Loan  
n which includes Solar PV



24.0%

ising (The property owner  
solar photovoltaic panels  
provider and pays a flat  
monthly fee).



40.0%

Other (please specify)

answered question

skipped question

9. I am aware of the following Solar PV financing strategies some of which may not be currently available in Broward County or the State  
(check all that apply)

I am not familiar with any of the above.

Oct 23, 2012 2

ould be more likely to pursue financing for rooftop Solar PV if: (Rank your answers by clicking on the pull down left, with #1 being your first choice. You can keep changing the rankings in the boxes until the list reflects your es. Click N/A if an answer is not applicable.)

	1	2	3	4	5	N/A	Rating Average
better understanding of my available rebate, incentive and financing options.	<b>46.2% (12)</b>	19.2% (5)	23.1% (6)	3.8% (1)	0.0% (0)	7.7% (2)	1.83
if offered by and arranged through the solar contractor.	11.5% (3)	<b>26.9% (7)</b>	15.4% (4)	19.2% (5)	11.5% (3)	15.4% (4)	2.91
if offered loans specifically for this purpose.	7.7% (2)	11.5% (3)	<b>30.8% (8)</b>	26.9% (7)	7.7% (2)	15.4% (4)	3.18
if the investment in Solar PV on my new property was voluntarily assessed against my annual property tax bill and the burden of repayment was transferred to the new property owner or if the property was sold and the investment was paid back.	<b>26.9% (7)</b>	23.1% (6)	3.8% (1)	23.1% (6)	7.7% (2)	15.4% (4)	2.55
if interest rates were lower.	0.0% (0)	11.5% (3)	15.4% (4)	11.5% (3)	<b>46.2% (12)</b>	15.4% (4)	4.09

answered question

skipped question

er reasons?

answered question

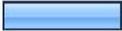
skipped question

11. Other reasons?

I do not have the cash at this time!

Oct 23, 2012

**What role(s) should local government take to improve the market for Solar PV installations? (check all that apply)**

		Response Percent
Establish a community goal for solar installations (for example - 500,000 solar PV installed in Broward County by 2020)		46.7%
Establish a revolving loan fund - A revolving fund containing a set amount of tax dollars (for example \$10 million) from which loans for a variety of purposes are processed. As loans are paid off, the money goes back into the revolving loans to be redistributed for new loans.		66.7%
Establish a Property Assessed Clean Energy (PACE) Program - This type of program allows property owners within the local jurisdiction to payback investment in energy efficiency retrofit as a voluntary assessment on their annual property tax bill.		66.7%
Encourage financial institutions to encourage more financing options		76.7%
Other		10.0%

Other (please specify)

answered question

skipped question

12. What role(s) should local government take to improve the market for Solar PV installations? (check all that apply)

Require new building construction for suitable orientation and to be solar ready.	Oct 29, 2012
Require Florida Power and Light to sue their early cost recovery dollars to fund solar installation for customers with on-bill financing.	Oct 29, 2012
50% Gov't Grant for PV's	Oct 25, 2012
Marketing, education and outreach to public	Oct 23, 2012

What other Solar PV financial issues or concerns would you like Broward County to consider? (limit of 400 characters)

answered question

skipped question

13. What other Solar PV financial issues or concerns would you like Broward County to consider? (limit of 400 characters)

Provide solar contractors/installers with low interest loans or grants.	Oct 29, 2012
Inform the Residents of Broward County that their Existing Homes could be Impacted with a Rooftop Solar Installation. Electrical Codes will have to be adhered to. Service Upgrades and Potential Panel Changes. Roof Structures will have to comply with Today's Building Codes. Could be Many Hidden Costs to the Home Owner. Make sure Contractor's Identify accurate Installation costs with Each Residence. Eliminate surprise Change Orders to the Home-Owners.	Oct 29, 2012
Single Location for all pertinent & current information. End the teaser programs that run out of money before most people are able to qualify.	Oct 24, 2012
Permitting of solar PV installation	Oct 23, 2012
Enter participants of workshops (education) into a raffle for a electric on-demand hot water heater, clothesline, solar cell phone charger, and other energy saving devices.	Oct 23, 2012

**I am a solar industry representative of (check one):**

		Response Percent
Solar PV manufacturer	<input type="checkbox"/>	10.3%
Solar equipment design and engineering	<input type="checkbox"/>	10.3%
Electrical contractor	<input type="checkbox"/>	6.9%
Energy Service Company	<input type="checkbox"/>	3.4%
Solar contractor/installer	<input checked="" type="checkbox"/>	41.4%
Other	<input type="checkbox"/>	27.6%

Other (please specify)

answered question

skipped question

**14. I am a solar industry representative of (check one):**

Training provider	Oct 29, 2012 1
Designer/Developer and equipment supplier	Oct 29, 2012 1
Wholesale and retail, solar and wind energy distribution	Oct 29, 2012 1
Gov't	Oct 29, 2012 1
and Solar Financial Services Company	Oct 29, 2012 9
Solar Fund Manager	Oct 24, 2012 2
Inspector	Oct 23, 2012 4
All the above	Oct 23, 2012 4
Building Inspector	Oct 23, 2012 3

customers pay for their Solar PV systems: (Rank your answers by clicking on the pull down box on the left, with 1 being the method most often used. You can keep changing the rankings in the boxes until the list reflects your priorities. Use N/A if an answer is not applicable.)

	1	2	3	4	5	N/A	Rating Average
from their personal/company financial reserves	<b>41.4% (12)</b>	37.9% (11)	6.9% (2)	3.4% (1)	0.0% (0)	10.3% (3)	1.69
home equity or business loan	10.3% (3)	24.1% (7)	<b>37.9% (11)</b>	10.3% (3)	3.4% (1)	13.8% (4)	2.68
financing I offer as a solar installer	20.7% (6)	6.9% (2)	24.1% (7)	17.2% (5)	3.4% (1)	<b>27.6% (8)</b>	2.67
do not know where they are getting the funds	10.3% (3)	13.8% (4)	13.8% (4)	20.7% (6)	13.8% (4)	<b>27.6% (8)</b>	3.19
Other	10.3% (3)	6.9% (2)	3.4% (1)	20.7% (6)	<b>34.5% (10)</b>	24.1% (7)	3.82

answered question

skipped question

## er methods?

answered question

skipped question

### 16. Other methods?

Financing that we offer as a Manufacturer	Oct 30, 2012 11:00
Rebates, Out of pocket	Oct 29, 2012 10:00
setting up Private Equity Financing	Oct 29, 2012 9:00
Power Purchase Agreements and Leasing	Oct 29, 2012 8:00
3rd Party ownership structures	Oct 24, 2012 2:00
commercial projects - done through third party financing such as PPA	Oct 24, 2012 9:00
n/a	Oct 23, 2012 4:00
Leasing	Oct 23, 2012 3:00

**Most often, I require my customers to: (check one)**

		Response Percent
Pay in full over a short time period (down payment, upon installation, following inspection)		70.4%
Installments over a period of less than one year.		7.4%
Installments over a period of less than five years.		3.7%
Pay through performance contracting		0.0%
Other		18.5%

Other (please specify)

answered question

skipped question



17. Most often, I require my customers to: (check one)

25% down Net 30	Oct 29, 2012
n/a	Oct 29, 2012
design and drive Solar (like car Industry)	Oct 29, 2012
Most of the work we do is for Solar Developers	Oct 29, 2012
Enter into solar agreemetrn	Oct 24, 2012
we are selling racking to EPCs and developers and we do not sell full systems	Oct 24, 2012
pull permit	Oct 23, 2012
Only involved in permitting process	Oct 23, 2012

**Are you aware of the following Solar PV rebates or incentives described on [www.dsireusa.org](http://www.dsireusa.org), some of which may not be currently available in Broward County or the State of Florida: (check all that apply)**

	Response Percent
State of Florida Solar PV rebates previously sponsored by the State of Florida (Program no longer available)	87.0%
State of Florida Solar PV rebates for commercial and residential properties currently available from Florida Power and Light (FPL)	82.6%
Net Metering and Renewable Energy Credits (The electricity generated by the PV system is used on-site and REC payments are based on the system's total output. Net metering allows for net excess generation to be sold back to the utility at the utility's full retail rate.)	73.9%
Federal Residential Renewable Energy Tax Credit	73.9%
State of Florida Corporate Renewable Energy Production Tax Credit	56.5%
State of Florida Sales Tax Exemption for Solar Equipment	73.9%

Performance Contracting for commercial facilities (The solar provider pays the upfront costs of installation and the property owner pays the vendor back over time based on the utility bill savings achieved.)



47.8%

Underhill - Revolving Loan which includes Solar PV



13.0%

Leasing (The property owner leases solar photovoltaic panels from a provider and pays a flat monthly fee).



60.9%

Other financing strategies and methods (please specify)

answered question

skipped question

18. I am aware of the following Solar PV rebates or incentives described on [www.dsireusa.org](http://www.dsireusa.org), some of which may not be currently available in your County or the State of Florida: (check all that apply)

I'm not aware of any.

Oct 23, 2012

19. I am aware of the following Solar PV financing strategies, some of which may not be currently available in Broward County or the State of Florida (check all that apply)

Florida needs a smart market driven energy legislation. The fact that an IOU is the ONLY retail outlet of electric energy in Florida is the real roadblock to promoting investors who would finance solar projects for residences and businesses. The Railroads were deregulated by brave truckers, Telecommunications were deregulated by brave equipment and services providers and now it is a defining moment in energy. The technology exists to deruglate electric monopolies and I see the government as the real roadblock as they are picking the OU's as the winner by protecting them from market consequencnes. Please refer to "The CATO Journal (Vol.14 No.3, Competitive Markets for Electricity Generation, John C. Moorhouse)".

Oct 29, 2012

I'm not aware of any.

Oct 23, 2012 4

**Rebate and incentive program result in a boost in my business: (check one)**

		Response Percent
Sometimes		23.1%
Always		73.1%
Never		3.8%

Explain your answer

answered question

skipped question

**20. Rebate and incentive program result in a boost in my business: (check one)**

The FPL solar rebate program is a disaster for our industry.	Oct 29, 2012 1
Rebates offer the IOU's political advantage by slick marketing of 'all' they are doing to promote renewables when all it helps them do is control the rollout of distributed generation and keeps them in control of every kWh placed into the retail space.	Oct 29, 2012 1
don't sell solar.	Oct 23, 2012
It is time for the government to get out of the solar industry. Broward County alone has received almost \$6 million and did nothing but waste it.	Oct 23, 2012

**sales staff is trained to discuss (check one):**

		<b>Response Percent</b>
Available Rebates		12.5%
Available Incentives		4.2%
Financing options		0.0%
<b>All of the above</b>		<b>79.2%</b>
None of the above.		4.2%

Other (please specify)

**answered question**

**skipped question**

**21. My sales staff is trained to discuss (check one):**

financing options too Oct 29, 2012



**customers generally seem: (check one)**

		Response Percent
of rebates, incentives and financing options		8.3%
ly aware of some of the rebates, incentives and financing options		66.7%
ware of specific rebates, es and financing options		20.8%
nowledgeable of rebates, es and financing options		4.2%
	Other (please specify)	

answered question

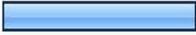
skipped question

**Q22. My customers generally seem: (check one)**

There are very few solar customers in Broward. Oct 23, 201



customers ask about financing options with payment over a multi-year term: (check one)

		Response Percent
Often		37.5%
Sometimes		16.7%
Once and a while		20.8%
Never		12.5%
It varies		8.3%
I am not sure		4.2%

Comment

answered question

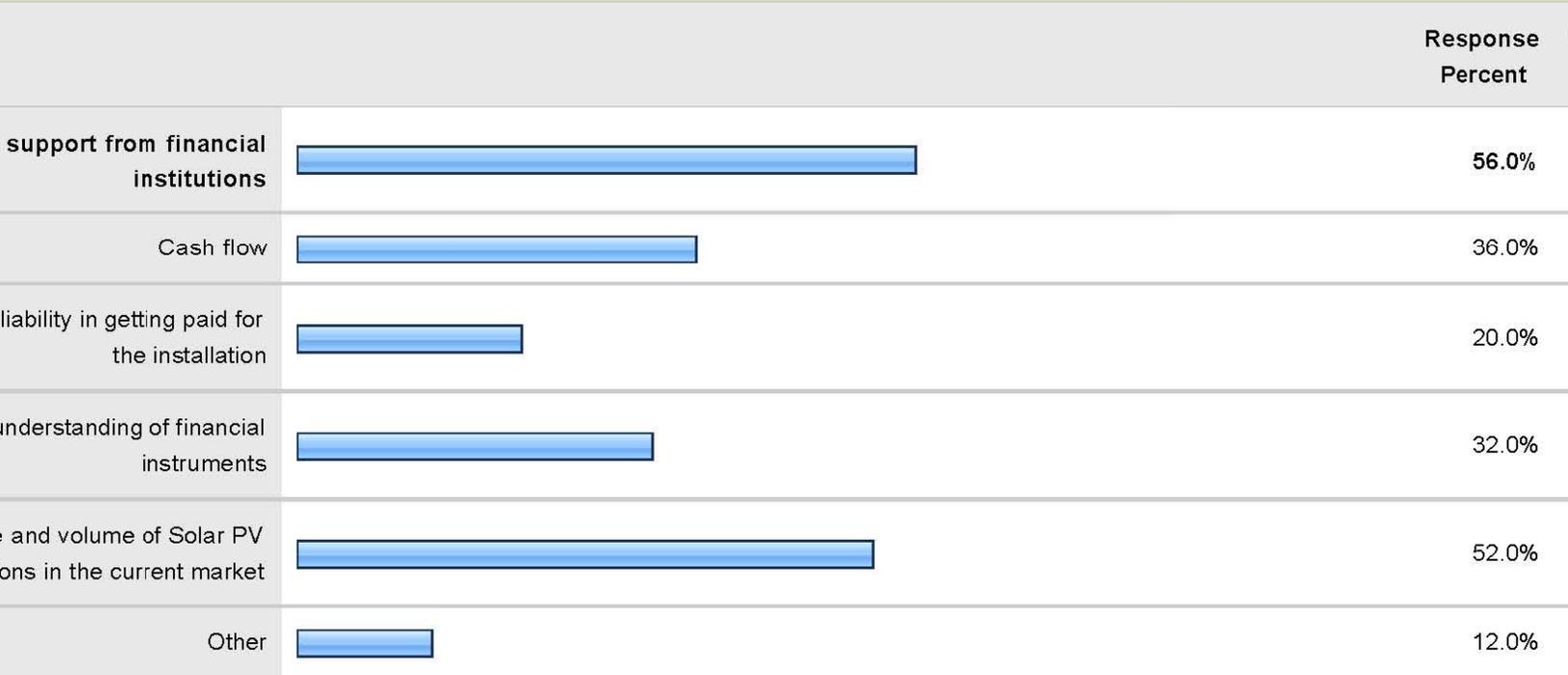
skipped question

23. My customers ask about financing options with payment over a multi-year term: (check one)

NA to our biz

Oct 24, 2012 9

**What are the barriers to arranging contractor-based financing? (check all that apply)**



Other (please specify)

answered question

skipped question

**24. What are the barriers to arranging contractor-based financing? (check all that apply)**

Shortage and high cost of tax equity	Oct 29, 2012
Good contractors who know how to do this are not interested in sharing.	Oct 23, 2012
n/a	Oct 23, 2012
Lack of reliable FPL rebates	Oct 23, 2012

By opinion, the most powerful financial way to aid growth in the Solar PV market in Broward County would be: answers by clicking on the pull down box on the left, with #1 being your first choice. You can keep changing the s in the boxes until the list reflects your priorities. Click N/A if an answer is not applicable.)

	1	2	3	4	N/A	Rating Average
More and better rebates	<b>34.6% (9)</b>	26.9% (7)	15.4% (4)	11.5% (3)	11.5% (3)	2.04
Better incentives	23.1% (6)	<b>38.5% (10)</b>	23.1% (6)	7.7% (2)	7.7% (2)	2.17
financing options for the property owner	11.5% (3)	11.5% (3)	<b>34.6% (9)</b>	<b>34.6% (9)</b>	7.7% (2)	3.00
ral/creation of a Property ed Clean Energy (PACE) financing program	23.1% (6)	15.4% (4)	15.4% (4)	<b>34.6% (9)</b>	11.5% (3)	2.70

answered question

skipped question

er powerful financial tools?

answered question

skipped question

26. Other powerful financial tools?

FIT, rebate	Oct 29, 2012
REC's, carbon credits & low interest-long term financing	Oct 29, 2012
Feed in tarriffs.	Oct 29, 2012
Just allow others to sell energy at retail. Investors who provide financing will be able to make business case at retail. They cannot make a business case when selling energy at 'avoided cost'.	Oct 29, 2012
financial institutions	Oct 29, 2012
FIT (feed in tariff), Leasing and PPAs	Oct 29, 2012
Raise the cost of energy	Oct 24, 2012
n/a	Oct 23, 2012
lease options	Oct 23, 2012
Feed in Tariff Program	Oct 23, 2012

**What role(s) should local government take to improve the market for Solar PV installations? (check all that apply)**

		Response Percent
Set a community goal for solar installations (for example- 500,000 solar PV installed by 2020)		60.0%
Set up a revolving loan fund		36.0%
Join or create a Property Assessed Clean Energy (PACE) Program		64.0%
Encourage financial institutions to offer more financing options		64.0%
Other		20.0%

Other (please specify)

answered question

skipped question

27. What role(s) should local government take to improve the market for Solar PV installations? (check all that apply)

rebate program	Oct 29, 20
need low interest-long term financing	Oct 29, 20
Renewable Energy Portfolio Standards. No Utility monopoly on electricity sale	Oct 29, 20
Just allow others to sell energy at retail. Investors who provide financing will be able to make business case at retail. They cannot make a business case when selling energy at 'avoided cost'.	Oct 29, 20
Work with the state to allow PPA (power purchase agreements) models similar to other states with successful PV markets	Oct 29, 20
Set a policy and then get out of an industry government clearly does not understand.	Oct 23, 20
n/a	Oct 23, 20

## What other Solar PV financial issues or concerns would you like Broward County to consider?

answered question

skipped question

### 28. What other Solar PV financial issues or concerns would you like Broward County to consider?

Creative financin	Oct 30, 2012 12
low interest-long term financing	Oct 29, 2012 3
Promote distributed solar power.	Oct 29, 2012 10
Communicating the request for smart legislation to the State House and Senate. In addition, request anti-trust review of the Electric Utilities by the Attorney General, who has specific duty to assure free markets without protection.	Oct 29, 2012 10
A Program For Ground Mount Installation. Many Home Owners would Benefit with this Application. Since you have created a broward County Permitting System, It would be in the Homeowners best Interest to have a Broward County Inspection Team that is CONSISTENT in their evaluations.	Oct 29, 2012 9
Solar PV can been a huge boost for local job creation	Oct 29, 2012 8
PACE by itself will not solve the problem. Cheap energy is a fact in South Florida	Oct 24, 2012 2
Explain how \$658,000 has been spent so far.	Oct 23, 2012 4
n/a	Oct 23, 2012 4
Local feed in tariff program	Oct 23, 2012 3
We continue to see PV pricing fall to below \$4 a watt. Our goal for long term viability is low interest financing to customers that allow PV to survive WITHOUT incentives and rebates. This is possible today over the 20-30 year life. Also need to focus on the recent appraisal publication increasing home value when solar is installed. Need to educate appraisers and realtors.	Oct 23, 2012 3

**I am a financial institution representative of a: (check one)**

	Response Percent
Local bank	0.0%
Investment firm	0.0%
Technology Services Company or provider	0.0%
PACE program administration	0.0%
Other	100.0%

Other (please specify)

answered question

skipped question

**Q29. I am a financial institution representative of a: (check one)**

Both PACE program administration and third-party solar services provider	Nov 1, 2012
Private Enterprize	Oct 29, 2012

**Are you aware of the following Solar PV rebates or incentives described on [www.dsireusa.org](http://www.dsireusa.org), some of which may not be available in Broward County or the State of Florida: (check all that apply)**

	Response Percent
State of Florida Solar PV rebates previously sponsored by the State of Florida (Program no longer available)	100.0%
State of Florida Solar PV rebates for commercial and residential properties currently available from Florida Power and Light (FPL)	66.7%
Net Metering and Renewable Energy Credits (The electricity generated by the PV system is used to offset the system's total output. Net metering allows the system owner to receive credit for any net excess generation produced by PV systems is credited to the system owner at the utility's full retail rate.)	66.7%
Federal Residential Renewable Energy Tax Credit	66.7%
State of Florida Corporate Renewable Energy Production Tax Credit	66.7%
State of Florida Sales Tax Exemption for Solar Equipment	66.7%

Performance Contracting for commercial facilities (The solar provider pays the upfront costs of installation and the property owner pays the vendor back over time based on the utility bill savings achieved.)



66.7%

Underhill - Revolving Loan which includes Solar PV



33.3%

Leasing (The property owner leases solar photovoltaic panels from a provider and pays a flat monthly fee.)



66.7%

Other financing strategies and methods for residential and small commercial Solar PV installations (please specify)

answered question

skipped question

Q30. I am aware of the following Solar PV rebates or incentives described on www.dsireusa.org, some of which may not be currently available in Broward County or the State of Florida: (check all that apply)

We must get off Tax Payers Dime...we must prove to Private Equity that there is an ROI and it is less than 5yrs The Average Group just does not know this... EDUCATION,EDUCATION EDUCATION...

Oct 29, 2012

Q31. I am aware of the following Solar PV financing strategies, some of which may not be currently available in Broward County or the State of Florida: (check all that apply)

Other forms of third-party ownership solar financing, particularly through PACE programs.

Nov 1, 2012

Am working on Private sector Financing...

Oct 29, 2012

**My institution is (check all that apply):**

		Response Percent
Currently offering any kind of financing for Solar PV installations		33.3%
Currently offering home equity loans to cover this activity		33.3%
Currently offering business loans to cover this type of activity		33.3%
Currently working with solar contractors to offer vendor-based financing		66.7%
Interested in working with solar contractors to offer vendor-based financing		66.7%
Other		66.7%

Other (please specify)

answered question

skipped question

**Q32. My institution is (check all that apply):**

My institution offers the only third-party ownership financing eligible through PACE programs. Nov 1, 2012

Have Solar, wind or Hydro projects will travel and Fund in side USA or Outside USA Oct 29, 2012



Institution has the following concerns with investing in a Solar PV financing. (Rank your answers by clicking on the number in the box on the left, with #1 being your greatest concern. You can keep changing the rankings in the boxes until you are satisfied with your priorities. Click N/A if an answer is not applicable.)

	1	2	3	4	N/A	Rating Average
Return on investment is often less than the term of the loan.	33.3% (1)	0.0% (0)	0.0% (0)	0.0% (0)	66.7% (2)	1.00
Market risk on these types of financing has not yet been established.	0.0% (0)	33.3% (1)	0.0% (0)	0.0% (0)	66.7% (2)	2.00
There is not currently adequate demand to support a loan program specific to financing this activity.	0.0% (0)	0.0% (0)	0.0% (0)	33.3% (1)	66.7% (2)	4.00
Financing of home improvement is considered a risky investment.	0.0% (0)	0.0% (0)	33.3% (1)	0.0% (0)	66.7% (2)	3.00
answered question						
skipped question						

#### Q34. Other concerns?

The concerns listed above are mitigated through third-party ownership financing through PACE.	Nov 1, 2012 4
More Solar Installers and Roofing Contractors do not know I exist	Oct 29, 2012 9

**What changes in the market would be needed to make financing Solar PV more attractive (check all that apply)?**

		Response Percent
Improvement in Solar PV technology		33.3%
Reduction in the total cost of Solar PV installations		66.7%
Alignment of or community goals for renewable energy		33.3%
Availability of a loan reserve pool to reduce risk		33.3%
Other		66.7%

Other (please specify)

answered question

skipped question

**Q35. What changes in the market would be needed to make financing Solar PV more attractive (check all that apply)?**

Establishment of an "open market" PACE finance program that allows capital from multiple sources: debt (through more than one lender); equity; and tax-equity.	Nov 1, 2012 4
ME	Oct 29, 2012 9

What is the best way for solar PV contractors to approach institutions regarding establishing financing agreements? (limit of 500 characters)

answered question

skipped question

Q36. What is the best way for solar PV contractors to approach institutions regarding establishing financing agreements? (limit of 500 characters)

Solar contractors already have access to capital for projects that "pencil." Solar contractors need better access to a very specific form of financing that makes projects more affordable: tax equity. Tax equity is attracted from investors who desire to own the solar installation sufficient to use the renewable energy investment tax credit and depreciation. This lowers the cost of capital to a project. Providers of debt (e.g., low interest loans) and other forms of equity do not receive the same benefits and return on investment (ROI) for providing capital to fund a solar installation. Unfortunately, tax equity investment is scarce and generally too complicated for most solar PV contractors to obtain. Ideally, a third-party would create a program or "platform" to offer competitive third-party financing for solar PV in Broward County. This could be ideally offered through an "open market" PACE program.

Nov 1, 2012

PACE mixed with my new: [not4profitsolar4all.org](http://not4profitsolar4all.org)

Oct 29, 2012

**Does your financial institution have any concerns about Property Assessed Clean Energy (PACE) programs (check all that apply)?**

		Response Percent
the PACE assessment to be a senior lien is a concern.		33.3%
Objection on the senior lien issue is a concern.		66.7%
We have no concerns as a financial institution with PACE.		33.3%
We welcome PACE to fill a gap in the current financial market.		100.0%
Other		33.3%

Other (please specify) limit of 300 characters

answered question

skipped question

**Q37. Does your financial institution have any concerns about Property Assessed Clean Energy (PACE) programs (check all that apply)?**

PACE fills a major gap in the financial market, primarily for small to medium commercial property owners. Residential owners with good credit scores (e.g., over 700) and large corporate or institutional borrowers already have access to solar financing because they have credit to stand behind the typically long-term promises within solar financing agreements. But small and medium commercial property owners lack creditworthiness without the promise of corporate or personal guarantees. PACE should respect existing mortgage holders' senior liens by seeking their permission to proceed with a PACE project ("lender consent") and should avoid the residential market until regulatory concerns with FHFA, Fannie Mae and Freddie Mac are resolved. The risks to Broward for pursuing residential are very high: that Fannie Mae and Freddie Mac may "redline" Broward County and refuse to purchase mortgages in order to protect themselves from a PACE lien being placed on a property with a mortgage they own.

Nov 1, 2012 4

**FINAL STEP: I am finished taking the survey or I would like to return to the beginning of the survey representing a target audience. (check one)**

	Response Percent
Finished taking the survey. I am now ready to hit the DONE button on the bottom of the page)	96.0%
Community Owners and Interested Parties	0.0%
Industry Representatives	4.0%
Financial Institution Representatives	0.0%

answered question

skipped question

**Provide the additional comments to share regarding Solar PV financing (limit 400 characters). Please hit the DONE button when you complete your comments.**

answered question
skipped question

Q39. I have the additional comments to share regarding Solar PV financing (limit 400 characters). Please hit the DONE button when you your comments.

Good job on taking the initiative for making this happen Oct 30, 2012 1

Thanks for your work. The ultimate goal is long term/sustainable solar policies that help hmeowners/businesses invest. Oct 29, 2012 3

FPL's current solar rebate program is incredibly disruptive to the Florida solar energy industry. The fact that the 2013 solar rebates were depleted in less that 2 minutes means hundreds of Florida residents will put off investing in solar for another 12 months. Oct 29, 2012 1

Please refer to:  
[http://3A%2F%2Fdl%2Edropbox%2Ecom%2Fu%2F21083890%2FA%2520case%2520for%2520Florida%2520Energy%2520Deregulation%2Epdf&urlhash=CgXI&t=tracking\\_anet](http://3A%2F%2Fdl%2Edropbox%2Ecom%2Fu%2F21083890%2FA%2520case%2520for%2520Florida%2520Energy%2520Deregulation%2Epdf&urlhash=CgXI&t=tracking_anet) Oct 29, 2012 1

Solar Energy is a Welcome alternative to Power Plant generation. I am sure that You are cognisant of the Revenue Generated from the Power Companies to support Government Spending. Also understand that all of the Residents using Power Plant will absorb the Costs for all of the Rebate Programs. Oct 29, 2012 9

hit um High! Hit um Low! grab their money and go cat go....LOL Oct 29, 2012 9

There are new methods being developed in other states such as community condo solar. Also use a voluntary cost recovery option to FPL customers to pay for solar PV projects instead of having to go to the FL PSC public service commission. Oct 29, 2012 8

I am a board member here at Ravenswood Estates. I am the lead for this GoSolar project. I am planning on attending the Oct 30th meeting. Please feel free to call me at 954-839-0121. Thanks, Steve J. Keskula Oct 25, 2012 3

Concern is that even though the engineering plans are preapproved, will each city require different inspections or multiple professionals for installation? General contractor? roofer? electrician? solar contractor? How will the owner be protected in terms of actually receiving rebates (Florida not consistent with this) or if a solar contractor pulls the permit additional fees? Oct 23, 2012 1

Trying to set policies based on surveys generally fails. Oct 23, 2012 4

Most of my customers both commercial and residential do not feel it makes sense to swap one payment for another-lower or no electric bill for a loan payment on a solar system Oct 23, 2012 4