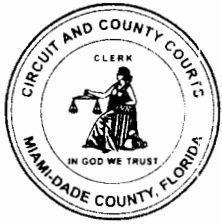


4. Miscellaneous items received for filing:

- a. Third Amended and Restated Interlocal Agreement for Regional Transportation Planning and Coordination in West Central Florida involving the Pinellas County Metropolitan Planning Organization (MPO).
- b. Miami-Dade County Board of County Commissioners Resolution No. R-315-15 adopted April 21, 2015, supporting the expansion of solar photovoltaic energy by local governments; welcoming the publication of the *"Florida Solar Financing Action Plan, A Menu of Options"*; and encouraging all other Florida counties to adopt the resolution.
- c. Town of Kenneth City Ordinances Nos. 2015-636 through 2015-638 adopted July 8, 2015, annexing certain property.
- d. City of Pinellas Park proposed Ordinance No. 3953 voluntarily annexing certain property; public hearing held July 23, 2015.

If a copy of a report or CD is desired, please check the web page of the organization/municipality or contact Board Records at 464-3465.

Harvey Ruvin
CLERK OF THE CIRCUIT AND COUNTY COURTS
Miami-Dade County, Florida



CLERK OF THE BOARD OF COUNTY COMMISSIONERS
STEPHEN P. CLARK CENTER
SUITE 17-202
111 N.W. 1st Street
Miami, FL 33128-1983
Telephone: (305) 375-5126

May 15, 2015

Mr. Mark S. Woodard, County Administrator
Pinellas County
315 Court Street
Clearwater, Florida 33756

Dear Mr. Woodard:

A copy of Resolution No. R-315-15 adopted on April 21, 2015, is provided to you at the request of the Miami-Dade County Board of County Commissioners.

If you have any questions or need additional information, please contact this office.

Respectfully yours,

HARVEY RUVIN, Clerk
Circuit and County Courts

By: _____

Christopher Agrippa, Director
Clerk of the Board Division

CA/ocv
Attachment

RECEIVED
BOARD OF
COUNTY COMMISSIONERS
PINELLAS COUNTY FLORIDA
2015 JUL 28 AM 11:36

OFFICIAL FILE COPY
CLERK OF THE BOARD
OF COUNTY COMMISSIONERS
MIAMI-DADE COUNTY, FLORIDA

MEMORANDUM

Amended
Agenda Item No. 8(M)(2)

TO: Honorable Chairman Jean Monestime
and Members, Board of County Commissioners

DATE: April 21, 2015

FROM: R. A. Cuevas, Jr.
County Attorney

SUBJECT: Resolution supporting the
expansion of solar photovoltaic
energy by local governments;
welcoming the publication of the
"Florida Solar Financing Action
Plan, A Menu of Options"; and
encouraging all other Florida
counties to adopt this resolution

Resolution No. R-315-15

The accompanying resolution was prepared by Regulatory and Economic Resources Department
and placed on the agenda at the request of Prime Sponsor Commissioner Daniella Levine Cava.



R. A. Cuevas, Jr.
County Attorney

RAC/cp

Memorandum



Date: April 21, 2015

To: Honorable Chairman Jean Monestime
and Members, Board of County Commissioners

From: Carlos A. Gimenez
Mayor

A handwritten signature in black ink, appearing to read "Carlos A. Gimenez", written over the name in the "From:" field.

Subject: Resolution Supporting the Expansion of Solar Photovoltaic Energy and Welcoming the Publication of the *Florida Solar Financing Action Plan, A Menu of Options*

Recommendation

It is recommended that the Board of County Commissioners (Board) approve the attached resolution supporting the expansion of solar photovoltaic energy by local governments and welcoming the publication of the "*Florida Solar Financing Action Plan, A Menu of Options*," in accordance with the objectives of the Go SOLAR Florida Grant. The attached resolution was prepared pursuant to Resolution No. R-927-14, which was approved by the Board on October 21, 2014.

Scope

The objectives of the Go SOLAR Florida Grant are countywide, as they pertain to unincorporated Miami-Dade County and are available for municipalities that choose to apply them.

Fiscal Impact/Funding Source

The attached document was developed in part by County staff and its completion will result in a federal task payment of \$1,000 to the County, which will offset the cost of staff time.

Track Record/Monitor

Juliana H. Salas, P.E., Assistant Director, Department of Regulatory and Economic Resources (RER) is responsible for the execution of the commitments of the interlocal agreement set forth in Resolution No. R-927-14. In addition, Mark Woerner, Assistant Director, RER, will share responsibility for this Resolution.

Background

In September 2013, the US Department of Energy awarded funding under Phase II of the Rooftop Solar Challenge to Broward County and its partners, including Miami-Dade County. The goal of the Rooftop Solar Challenge is to reduce the cost and delays associated with the installation of rooftop solar photovoltaic systems by developing a streamlined online permitting process, eliminating zoning barriers, exploring financial options and educating the public about the economic and environmental benefits of solar power. Florida, with more than 100 independent jurisdictions, faces considerable challenges to standardize the approval processes for rooftop photovoltaic installation and use. Therefore, the regional approach by Broward County includes six counties across Florida, 23 municipalities within the counties, the Florida Solar Energy Center, and Florida Atlantic University. The combined population impacted by this collaboration is approximately 4 million people.

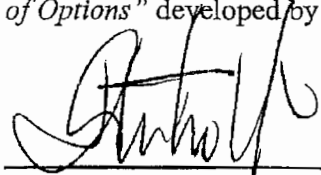
On October 21, 2014, via Resolution No. R-927-14, the Board approved an Interlocal Agreement with Broward County to increase the use of, and access to, solar energy pursuant to the US Department of Energy Rooftop Solar Challenge II grant award agreement. Under the Interlocal Agreement, which incorporated the terms of the Rooftop Solar Challenge II grant award agreement, Miami-Dade County committed to develop several deliverables with associated deadlines and task payments upon completion. One such deliverable is the development and review of the "*Florida Solar Financing Action Plan, A Menu of Options*" (*Action Plan*), a report of financial options for governments, homeowners

Honorable Chairman Jean Monestime
and Members, Board of County Commissioners
Page 2

and businesses to expand solar photovoltaic energy in Florida (Attachment 1). The grant award agreement also calls for a proclamation adopted by all Florida counties on the value of solar energy and providing a wide range of financial options to pursue the installation of solar energy systems.

The associated *Action Plan* developed by the Go SOLAR Florida team presents financing options for the entire State of Florida. It explores and explains a variety of financing options for all levels of government as well as homeowners and business interested in installing solar photovoltaic systems. The report compiles all financing options used by all partnering jurisdictions, available rebates at the federal, state and local level, and other financing options used by not-for-profits dedicated to solar. Applicability of the options in the *Action Plan* depend on diverse factors such as the type of electrical utility present in the area, federal, state and local incentives available, local political environment, etc. In addition, solar financing is an ever-evolving sector and only some of the options listed in the report may be applicable in each local government. The attached resolution does not endorse or adopt any particular financing option within the *Action Plan*.

As part of Miami-Dade County's commitment to the Go SOLAR Florida grant, the *Action Plan* will be distributed and available via the website: green.miamidade.gov. Accordingly, the attached resolution supporting the expansion of solar energy use by local governments, promoting broader access to solar energy in Florida, and supporting the publication of the "*Florida Solar Financing Action Plan, A Menu of Options*" developed by the Go SOLAR Florida team, is recommended for approval.



Jack Osterholt, Deputy Mayor




MEMORANDUM

(Revised)

TO: Honorable Chairman Jean Monestime
and Members, Board of County Commissioners

DATE: April 21, 2015

FROM: 
R. A. Cuevas, Jr.
County Attorney

Amended
SUBJECT: Agenda Item No. 8(M)(2)

Please note any items checked.

- ☐ "3-Day Rule" for committees applicable if raised
- ☐ 6 weeks required between first reading and public hearing
- ☐ 4 weeks notification to municipal officials required prior to public hearing
- ☐ Decreases revenues or increases expenditures without balancing budget
- ☐ Budget required
- ☐ Statement of fiscal impact required
- ☐ Ordinance creating a new board requires detailed County Mayor's report for public hearing
- ☐ No committee review
- ☐ Applicable legislation requires more than a majority vote (i.e., 2/3's ____, 3/5's ____, unanimous ____) to approve
- ☐ Current information regarding funding source, index code and available balance, and available capacity (if debt is contemplated) required

Approved _____ Mayor
Veto _____
Override _____

Amended
Agenda Item No. 8(M)(2)
4-21-15

RESOLUTION NO. R-315-15

RESOLUTION SUPPORTING THE EXPANSION OF SOLAR PHOTOVOLTAIC ENERGY BY LOCAL GOVERNMENTS; WELCOMING THE PUBLICATION OF THE "*FLORIDA SOLAR FINANCING ACTION PLAN, A MENU OF OPTIONS*"; AND ENCOURAGING ALL OTHER FLORIDA COUNTIES TO ADOPT THIS RESOLUTION

WHEREAS, this Board desires to accomplish the purposes outlined in the accompanying memorandum, a copy of which is incorporated herein by reference; and

WHEREAS, solar photovoltaic energy offers many potential benefits, including lower electricity costs for homeowners, businesses and governments, local jobs and economic development, reduced dependence on imported fuels, and pollution-free electricity generation; and

WHEREAS, the Go SOLAR Florida team is a partnership consisting of the counties of Broward, Alachua, Miami-Dade, Monroe, Orange and St. Lucie, the City of Venice, the Florida Solar Energy Center, and Florida Atlantic University, for the purpose of standardizing the online solar permitting system and growing the use of solar energy in this state; and

WHEREAS, in late 2013, the Go SOLAR Florida team received a \$1.6 million grant from the United States Department of Energy (the "Rooftop Solar Challenge II grant") to expand the streamlined online solar permitting system developed by Broward County under an earlier grant award; and

WHEREAS, on October 21, 2014, via Resolution No. R-927-14, this Board approved an Interlocal Agreement with Broward County to increase the use of, and access to, solar energy pursuant to the Rooftop Solar Challenge II grant; and

WHEREAS, one of the Rooftop Solar Challenge II grant deliverables is the *Florida Solar Financing Action Plan, A Menu of Options*, exploring the benefits of solar energy and containing financing options to improve access to solar financing in the state, a copy of which is attached hereto; and

WHEREAS, to build support for solar photovoltaic energy and awareness of solar financing options within the State of Florida, the Go SOLAR Florida team is seeking to secure resolutions of support from all 67 counties in Florida,

NOW, THEREFORE, BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF MIAMI-DADE COUNTY, FLORIDA, that this Board:

Section 1. Supports the expansion of solar photovoltaic energy by local governments in this state.

Section 2. Welcomes the publication "*Florida Solar Financing Action Plan, A Menu of Options*" as a valuable resource for local governments seeking to expand the use of solar photovoltaic energy in their communities, without specifically endorsing or adopting any of the individual options contained within.

Section 3. Encourages all other Florida counties to adopt this Resolution.

Section 4. Directs the Clerk of the Board to transmit a certified copy of this resolution to the Mayor, County Manager or other Chief Administrative Officer of each of the other 66 counties in Florida and the Executive Director of the Florida Association of Counties.

The foregoing resolution was offered by Commissioner **Daniella Levine Cava**, who moved its adoption. The motion was seconded by Commissioner **Audrey M. Edmonson** and upon being put to a vote, the vote was as follows:

Jean Monestime, Chairman	aye		
Esteban L. Bovo, Jr., Vice Chairman	aye		
Bruno A. Barreiro	aye	Daniella Levine Cava	aye
Jose "Pepe" Diaz	aye	Audrey M. Edmonson	aye
Sally A. Heyman	aye	Barbara J. Jordan	aye
Dennis C. Moss	aye	Rebeca Sosa	aye
Sen. Javier D. Souto	absent	Xavier L. Suarez	aye
Juan C. Zapata	absent		

The Chairperson thereupon declared the resolution duly passed and adopted this 21st day of April, 2015. This resolution shall become effective upon the earlier of (1) 10 days after the date of its adoption unless vetoed by the County Mayor, and if vetoed, shall become effective only upon an override by this Board, or (2) approval by the County Mayor of this resolution and the filing of this approval with the Clerk of the Board.



MIAMI-DADE COUNTY, FLORIDA
BY ITS BOARD OF
COUNTY COMMISSIONERS

HARVEY RUVIN, CLERK

By: **Christopher Agrippa**
Deputy Clerk

Approved by County Attorney as
to form and legal sufficiency.

Eduardo W. Gonzalez

A handwritten signature in black ink, appearing to be "EWG", written over a horizontal line.



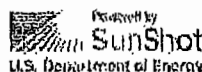
Florida Solar Financing Action Plan: A Menu of Options

11 March 2015

*Research for best practices regarding solar financing listing a summary of findings
with links to reports, documents, and references*

Acknowledgment: This material is based upon work supported by the U.S. Department of Energy under Award Number DE-EE0006309.

Disclaimer: This report was prepared as an account of work sponsored by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, express or implied, or assumes any legal liability or responsibility for the accuracy, completeness, or usefulness of any information, apparatus, product, or process disclosed, or represents that its use would not infringe privately owned rights. Reference herein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof. The views and opinions of authors expressed herein do not necessarily state or reflect those of the United States Government or any agency thereof.



Introduction

Florida—the Sunshine State—has more rooftop solar potential than all states but California and Texas,¹ yet it ranks 13th in the nation for cumulative installed solar capacity.² For a state that has more to lose from sea level rise and other climate impacts than any other, expanding the use of carbon-free energy sources like solar photovoltaic (PV) power could be considered a high priority.

Individuals, businesses, and governments that can obtain electricity at competitive rates from solar PV systems not only enjoy the environmental benefits of solar power, but also financial gain.

Until recently, solar photovoltaic energy systems made little financial sense, except perhaps in very isolated locations where other sources of energy were even more expensive—the International Space Station, for example. Of course, individuals, businesses, and institutions with a strong interest in pollution-free energy could pay the premium cost for solar PV systems, and many did.

Over the last several years, however, the price of solar PV panels has dropped so much that the price of electricity generated by those panels is approaching retail grid parity with traditional generation types (i.e., those fueled by coal, oil, natural gas, and nuclear). Just since the beginning of 2011, the average price of a completed PV system has dropped by 33 percent.³

In states with higher-than-average electricity costs, a particular solar PV installation may need just a small assist from one or two of the incentives described in this document in order to ensure a strong, favorable financial calculation. In states with relatively low-cost electricity, such as Florida, a combination of policy levers and financial incentives may need to be applied as a catalyst to build market momentum so that distributed solar PV systems can be truly competitive with, or even cheaper than, conventional power sources.

This report focuses primarily on actions local governments can take under existing state and federal law, as well as options available to homeowners and businesses which could be supported by local governments. Although it is hoped that local governments, homeowners, and businesses will choose to employ some of these strategies to expand solar PV energy in Florida, this Plan does not take a position on which options are best.

Go SOLAR Florida

In December 2011, Broward County was awarded a \$646,367 grant from the U.S. Department of Energy called the Rooftop Solar Challenge. The goal of Go SOLAR Broward was to reduce the cost and wait time associated with the installation of rooftop photovoltaic (PV) solar systems. Broward County partnered with fourteen municipalities (Coconut Creek, Dania Beach, Davie, Deerfield Beach, Fort Lauderdale, Hallandale Beach, Hillsboro Beach, Lauderdale-by-the-Sea, Miramar, North

¹ Anthony Lopez, Billy Roberts, Donna Helmiller, Nate Blair, and Gian Porro, *U.S. Renewable Energy Technical Potentials: A GIS-Based Analysis*, National Renewable Energy Laboratory, Technical Report NREL/TP-6A20-51946, October 2012. <http://www.nrel.gov/docs/fy12osti/51946.pdf>

² Solar Energy Industries Association. <http://www.seia.org/state-solar-policy/Florida>

³ Solar Energy Industries Association. <http://www.seia.org/policy/solar-technology/photovoltaic-solar-electric>

Florida Solar Financing Action Plan: A Menu of Options

Lauderdale, Oakland Park, Pompano Beach, Sunrise, Tamarac), unincorporated Broward County, Broward County Public Schools, the Florida Solar Energy Center, Florida Power and Light Company, the Broward County Board of Rules and Appeals, the Building Officials Association of Florida, and the Broward League of Cities. The grant's objectives included developing a streamlined, online permitting process; identifying and eliminating zoning barriers; exploring financing options; and educating the community about the economic and environmental benefits of solar power.

In September 2013, Broward County was awarded another Rooftop Solar Challenge grant (RSCII) of \$2,276,575 from the U.S. Department of Energy. For this grant, Broward County is partnering with nine more Broward County municipalities (Cooper City, Hollywood, Lauderdale Lakes, Lauderhill, Lighthouse Point, Margate, Pembroke Pines, Plantation, and Wilton Manors), six non-Broward jurisdictions outside of Broward County (Alachua County, Miami-Dade County, Monroe County, Orange County, St. Lucie County, and the City of Venice), the Florida Solar Energy Center (FSEC), and Florida Atlantic University (FAU) in Go SOLAR Florida.

Origin of This Plan

The Broward County Go SOLAR Florida RSCII Statement of Project Objectives (SOP) includes the following objective:

The team will work to change the financing options landscape within Florida.

Subtask 5.1 of the work plan contained within the Statement of Project Objectives provides details regarding the development of this Florida Solar Financing Action Plan:

Subtask 5.1: Develop Florida Solar Financing Action Plan

Financing options used by all partnering jurisdictions will be reviewed and documented in a revision to the Go SOLAR-Broward Financial Options Best Management Practices. With input from all partners and not-for-profits dedicated to Solar (for example, the Solar and Energy Loan Fund), the Best Management Practices document will be revised in a Florida Solar Financing Action Plan. The team will seek formal support of, or agreement to, the plan by the State Energy Office.

Related subtasks commit each partner jurisdiction to implementing the Plan "to the extent possible," the development of a model proclamation supporting solar energy and a wide range of financing options, outreach to all 67 counties in Florida requesting adoption of the proclamation, preparation of an electronic action packet to help promote financial options in counties and the state as a whole, and education of key local and state stakeholders and decision makers regarding solar financing options.

Interested readers are directed to the "Go SOLAR-Broward Financial Options Best Management Practices" report, published in November 2012 as part of Broward County's original Rooftop Solar Challenge grant. It describes a wider array of solar financing options used throughout Florida and the United States, some of which are outside the scope of this report.

Florida Solar Financing Action Plan: A Menu of Options

The November 2012 solar financing options report also included the results of an online survey of property owners, solar industry professionals, and financial institution representatives, and a review of an in-person workshop. As the report stated, "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." Solar industry representatives reported that inconsistent demand for solar PV systems—stoked by short-term incentive programs, only to recede when the programs ended—was a serious problem for the industry.

The Case for Solar Photovoltaic Energy in Florida

Local, state, and federal governments have many reasons to support solar PV development.

- **Employment and Economic Development.** Solar installation and maintenance jobs are local by their very nature and keep money in the local economy. The Florida economy sends billions of dollars out of state every year to purchase fossil and nuclear fuels, very few of which are produced in the state.
- **Energy Equity.** Low- and moderate-income families can benefit from lower electricity bills when solar PV systems are installed on their homes. A growing number of solar programs aim to serve this population.
- **Fiscal Responsibility.** Investments by governments in solar PV on their own facilities can pay for themselves over the life of the project, reducing energy expenditures and hedging against higher retail electricity prices in the future, thereby freeing up funds for other purposes. For example, Neptune Beach in northeastern Florida installed 140 solar PV panels on the roof of its city hall and reduced the building's electric bill to \$6 in the first monthly billing cycle of 2013 (compared to \$491 for the same period a year before). The \$147,000 cost was paid for by a combination of city funds, contributions from other local governments, and a federal grant.⁴ An even more striking example comes from the Scottsdale Unified School district in Arizona, which agreed to buy electricity at below-market rates from solar panels installed on 19 school facilities by solar developers, saving \$500,000 a year. "With the savings," Superintendent David Peterson told the *Wall Street Journal* in 2012, "I was able two years ago to recall six teachers who had been laid off due to budget cuts."⁵
- **Sustainability.** Solar photovoltaic systems require no fuel—only occasional maintenance and cleaning. Therefore, they produce no carbon emissions or other pollution, other than that which occurred in the original manufacturing of the systems and their transport to the installation site. Many governments have ambitious goals for reducing carbon pollution, which would be furthered by wider use of solar power.
- **Energy Diversity.** Increased use of solar power makes the energy system more diverse. As both the supply and prices of fossil and nuclear fuels are subject to global market forces and cannot be guaranteed into the future, it is prudent to diversify energy portfolios.
- **Resilience.** Distributed generation, such as rooftop solar photovoltaic systems, can be incorporated into "microgrids" that generate, store, and distribute power in a local area and

⁴ Jim Schoettler, "Solar power saving Neptune Beach big bucks so far," *Florida Times-Union*, 22 March 2013, <http://jacksonville.com/news/premium-news/2013-03-22/story/solar-power-saving-neptune-beach-big-bucks-so-far>

⁵ Jim Carlton, "The Enlightened Classroom," *Wall Street Journal*, 18 June 2012, <http://online.wsj.com/news/articles/SB10001424052702303674004577433930635426386>

can operate independently of the larger grid to which they are connected under normal conditions. Due to this independence and potential autonomy, microgrids can be more resilient in the face of natural disasters or other disruptions to the larger electrical grid.

- **Responsiveness.** Solar PV systems typically generate the most energy during the sunniest part of the day. In the summer, this means providing electricity to the grid when it is subject to the heaviest demand, largely from air conditioning systems. This reduces the risk of brownouts or blackouts.
- **Infrastructure Savings.** Solar PV systems owned by households, businesses, and public institutions can help meet growing demands for electricity, thereby reducing the need for the construction of extremely expensive central power plants, the costs of which are borne by all utility customers.

Challenges to Widespread Solar PV Installation in Florida

Due to the relatively low cost of electricity in Florida, the financial advantages of rooftop solar PV systems are not as overwhelming as they are in other markets with higher electricity prices.

Therefore, to spur greater development of solar PV systems in Florida, the actual hardware costs of solar PV systems must be reduced, the non-hardware or "soft" costs of solar PV installation systems must be reduced (permitting, design, etc.), financing options need to be made more widely available, or a combination of all three.

Solar PV systems have both hard and soft costs, and both can be reduced. Hard costs include the cost of the physical equipment—panels, inverters, frames, and other elements of solar PV systems. The price of solar panels has dropped 99 percent over the past 40 years,⁶ and additional improvements in technology and lower soft costs could reduce the overall costs of solar PV systems even further.

Local governments have a special role to play in reducing some of the soft costs of solar PV. Soft costs include the expenses associated with the design, permitting, and installation of solar PV systems. Efforts by local governments to streamline and standardize the permitting and approval processes for solar installations could lead to significantly lower soft costs. Indeed, this is the main purpose of the Go SOLAR Florida initiative.

According to research by the National Renewable Energy Laboratory, soft costs accounted for 64 percent of total solar installation costs on residential property, as of the first half of 2012. Soft costs accounted for 57 percent of total costs for commercial installations of less than 250kW, and 52 percent of larger commercial installations.⁷

The other strategy for increasing solar PV adoption is making financing more widely available. Here, local governments can play a significant role, both through financing solar PV systems for their own

⁶ Bloomberg New Energy Finance, "Global Trends in Clean Energy Investment," April 2012.

⁷ Barry Friedman, Kristen Ardani, David Feldman, Ryan Citron, Robert Margolis, and Jarett Zuboy, *Benchmarking Non-Hardware Balance-of-System (Soft) Costs for U.S. Photovoltaic Systems, Using a Bottom-Up Approach and Installer Survey - Second Edition*, National Renewable Energy Laboratory, Technical Report NREL/TP-6A20-60412, October 2013.

facilities and through policies that expand financial options for residential and commercial property owners. The State of Florida and federal government can also adopt policies which improve financing options for households and businesses.

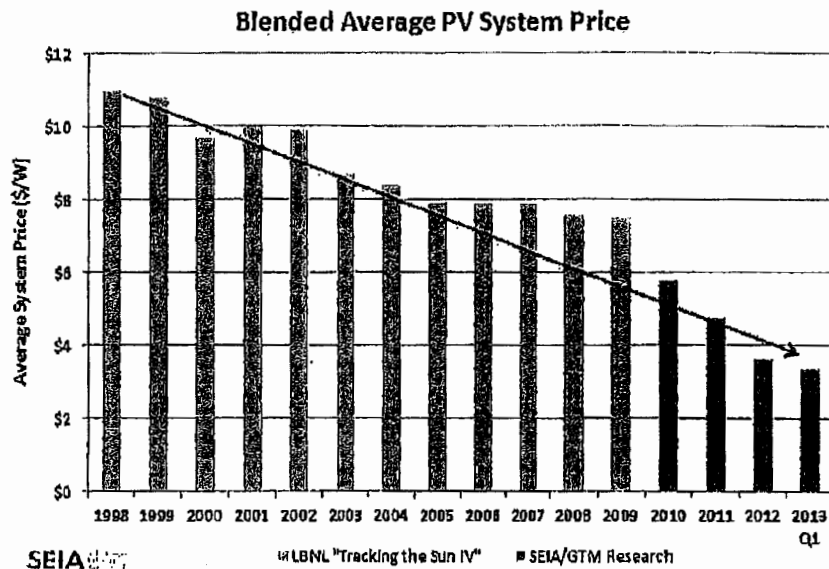


Figure 1. The cost of solar photovoltaic systems dropped from \$11/watt in 1998 to less than \$4/watt in 2013.⁸

State and Federal Contexts and Incentives

Policies and incentives at the state and federal level play important roles in establishing the context in which Florida's electricity sector operates and in determining many of the financing options discussed later in this report.

Federal Context

The Clean Power Plan proposed by the US Environmental Protection Agency in June 2014 could bring significant changes to the state's electricity sector. In its current version, the Clean Power Plan would require existing power plants to reduce their carbon dioxide emissions by 40 percent by 2030. The proposed reductions for each state were calculated by examining the effect of four common strategies, including the expansion of renewable energy, in each state, but the EPA will not mandate how to meet the overall target. Each state is free to meet the target however it wishes. The

⁸ Solar Energy Industries Association.

state of Florida, therefore, will be able to decide how much emphasis to place on renewable energy strategies in its plan to meet the Clean Power Plan goal. Given the state's solar potential, solar photovoltaic energy could play a significant role.

The federal government has begun to place a greater emphasis on preparing for disasters and national security threats through programs and infrastructure that strengthen communities' resilience—in other words, their ability to recover from disruptions and continue functioning. The traditional electrical system, with transmission lines emanating from a central generation facility, can be less resilient than a grid with many small, interconnected generating units (such as solar systems). Communities and utilities might therefore expect greater federal funding opportunities for programs and projects that improve the resilience of the electrical grid through greater use of distributed generation and "smart grid" technologies that can cope with the more dynamic, back-and-forth flow of electricity associated with distributed generation.

Federal Incentives

Residential Renewable Energy Tax Credit

The federal government currently provides a 30 percent investment tax credit for solar PV systems (and other renewable energy equipment) installed on property owned by and used as a residence by an individual taxpayer, but this tax credit is set to expire on December 30, 2016.

Corporate Renewable Energy Tax Credit

Similarly, the federal government grants corporate taxpayers a 30 percent investment tax credit for solar PV (and other renewable energy) systems they place into service. However, this tax credit will drop to 10 percent for systems installed after December 31, 2016.

Florida Context

In the state of Florida, grid-delivered electricity is provided by five investor-owned utilities, 34 municipally-owned electric utilities, and 18 rural electric cooperatives.

The top 11 utilities in Florida, according to 2012 electricity consumption, are listed in the following table:

Name	Type of Utility	2012 Consumption (MWh)
Florida Power & Light Company	Investor-owned	102,486,274
Duke Energy Florida	Investor-owned	36,380,683
Tampa Electric Company	Investor-owned	18,408,580
JEA	Municipal	11,906,884
Gulf Power Company	Investor-owned	10,987,832
Withlacoochee River Electric Cooperative	Rural electric cooperative	3,570,119
Orlando Utilities Commission	Municipal	3,223,235*

Clay Electric Cooperative	Rural electric cooperative	2,971,589
Sumter Electric Cooperative	Rural electric cooperative	2,771,266
City of Lakeland	Municipal	2,770,042
Gainesville Regional Utilities	Municipal	1,699,935

* 2011 Consumption (2012 figure was unavailable)

Each of the utilities and cooperatives has an exclusive service area in which it is the sole provider of electricity. The state's investor-owned utilities are required to provide universal electric service and meet the requirements set by the Florida Public Service Commission (PSC) in exchange for their exclusive service territories and a regulated rate of return on equity investments. Municipal electric utilities and rural electric cooperatives are not subject to the same level of regulation by the PSC. All the investor-owned utilities own generation facilities; some of the municipal and rural electric cooperatives generate power, while others purchase it from other producers and resell it to their customers.

State Incentives

Residential Solar Equipment Property Assessment Exemption

Solar PV equipment on residential property in Florida is essentially exempt from property taxes, thanks to a constitutional amendment approved by Florida voters in November 2010 which prohibits the consideration of renewable energy devices and wind resistance improvements in residential property assessments. Following passage of implementing legislation by the Florida Legislature in 2013, this exclusion began to be reflected in assessments in 2014.

Net Metering

Under net metering laws, electricity generated by a residential or commercial solar PV installation (or other renewable energy system) is measured as it is fed into the electric grid, thereby offsetting the customer's electric bill for the facility where the system is installed. Should an installation produce more electricity than is consumed on site, the electric utility pays the customer for the "net excess generation" (NEG). In Florida, the NEG is carried forward to the customer's next bill as a credit. At the end of 12 months, the utility pays the customer for any remaining NEG credit at the avoided-cost rate (Avoided cost is essentially the utility's cost of producing additional electricity from its own facilities and is therefore lower than the retail cost.) There is therefore little incentive for a property owner to install more generating capacity on his/her property than would be consumed onsite.

Florida law permits the Public Service Commission to adopt net metering rules for the state's five investor-owned utilities. The state's municipal and cooperative utilities are also required to offer net metering to their customers, but as they are not subject to the same level of oversight by the Public Service Commission as investor-owned utilities, they are only required to submit annual reports on net metering participation to the PSC.

Net metering annual reports are available on the Florida Public Service Commission website:

<http://www.psc.state.fl.us/utilities/electricgas/customerrenewable/Index.aspx>

Utility Incentives

Under a 2009 order of the Florida Public Service Commission, the five investor-owned utilities in the state were required to offer solar rebate programs to residential and commercial customers.

The PSC order expires in 2014, and investor-owned utilities in Florida will be ending their solar rebate programs for residential and commercial customers after a final round of rebate applications in 2015.

Some municipal utilities and rural electric cooperatives in Florida continue to offer renewable energy incentives.

Public Investments by Local Government

Solar-supportive local governments in Florida can lead by example, electing to install solar PV systems on their facilities. Such installations not only have obvious environmental benefits and demonstrate local government commitment to green practices, but they may also be financially responsible, allowing a local government to obtain electricity at a long-term fixed rate that insulates it from rate increases by its incumbent utility provider.

Many local governments throughout the country have begun to establish renewable energy targets for their operations. For example, in early 2013, the Broward County Commission adopted a resolution to obtain 20 percent of the electricity used in County operations from renewable sources. Solar installations can be a useful strategy for meeting these goals.

In addition, local governments in Florida are required by state law to meet green building standards. Green building systems frequently award points for or recommend on-site renewable energy generation, including solar PV systems. Local governments can advance rooftop solar PV systems in Florida by ensuring that such systems are part of any building project undertaken.

Under Section 255.2575 Florida Statutes, county and municipal buildings in Florida must be constructed to meet the requirements of a national model green building code or sustainable building rating system, such as the US Green Building Council's Leadership in Energy and Environmental Design (LEED), the Green Building Initiative's Green Globes rating system, Florida Green Building Coalition standards, International Green Construction Code, or other system approved by the Department of Management Services.

Many local governments have gone a step further and adopted their own ordinances specifying the green building standards to be used for their buildings. For example, Broward County established a green building policy by ordinance that requires eligible construction projects to achieve a minimum rating of "LEED Certified."

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The City of Gainesville, in Alachua County, passed a requirement that all City-owned civic, office, and residential projects meet either Florida Green Building Coalition standards (residential projects) or US Green Building Council LEED certification (non-residential projects). This requirement is embedded within a more expansive green building program that seeks to spark voluntary participation by private builders by offering lower building-permit fees, fast-track permit processing, and other incentives.

Of course, local governments may not wish to wait for new building projects or substantial renovations to install solar PV systems on their facilities. For local governments pursuing solar PV on existing facilities, local governments have several financing options. Appendix B features a table which briefly outlines some of the major advantages and disadvantages of each of the options described below.

Direct Purchase

Solar PV systems can be purchased outright by local governments for installation on their property through funds provided by the annual appropriations process. Absent strong community and political support for solar installations on public facilities, however, local governments are unlikely to consider large upfront expenditures for the outright purchase of solar systems. This situation would change if state or federal grants were provided to local governments for solar PV installations, of course.

Bond Financing

Local governments could also choose to pay for solar PV systems through bond financing. In Florida, local government ad valorem bond and general obligation bond issues, both of which are backed by property tax proceeds, must be approved by voters. In addition, both municipalities and counties are subject to a borrowing cap equal to 10 mills (1 percent) of the assessed value of real estate and tangible personal property within the respective jurisdiction.

General Obligation Bonds

Traditional general obligation bonds, in which municipalities use tax revenues to repay the principal plus interest to investors, are one option.

Qualified Energy Conservation Bonds (to Support Public Facilities or Programs)

Qualified Energy Conservation Bonds (QECBs) will soon be another potential option for some communities in Florida. QECBs were created through federal legislation enacted in 2008 and 2009 to allow state, local, and tribal governments to finance energy-efficiency and clean energy projects at below-market rates. In essence, the federal government picks up some or all of the interest costs of the bonds. States must opt in through legislation or an executive order from the governor. In Florida's case, legislation authorizing the issuance of these bonds passed during the 2014 session.

The \$3.2 billion nationwide bond cap was allocated to states based on their population; Florida's share is \$190 million. The Florida Office of Energy is currently working to establish a program for the allocation of the QECB bond authority based on a population formula established in the federal legislation. Only counties and municipalities with populations exceeding 100,000 (as of 2007) will

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be eligible, subject to the specific federal formula; the state will receive any remaining allocation. Qualifying municipalities and counties are not required to issue QECBs; should they choose not to, their share of the allocation will revert to the state, which can either add it to its share or reallocate it to other participants.

Seventy percent or more of the bond proceeds must be spent on public facilities or programs, with up to 30 percent of the bond proceeds potentially able to support private-sector projects.

Solar Leasing

Alternatively, local governments unable or unwilling to purchase their own solar PV equipment can consider solar leasing agreements. Under solar leasing, a solar developer leases the rooftop PV equipment to the property owner, who uses the electricity generated by the system onsite. (Power purchase agreements, under which the developer owns the equipment and sells the power generated onsite to the customer, are not currently permitted under Florida law.)

Solar Services

A rarer type of third-party ownership is structured to sell "solar services." A solar developer would contract with a customer to provide services including ownership, operation, maintenance, and performance guarantees for the solar PV equipment for a monthly fee. The customer uses the power generated by the equipment, but because the sale is for services rather than the electricity itself, this "solar service" agreement would be permitted in states like Florida that classify and regulate as utilities any entities selling electricity to customers.

One example of this type of third-party financing model has recently emerged from a solar development company in Virginia: Customer Self-Generation Agreements (CSGAs). Unlike Power Purchase Agreements, in which a customer purchases the electricity generated by the solar PV equipment installed on the customer's property by a developer, under a CSGA, the customer "self-generates" electricity from the solar PV equipment, which is owned and offered as a service by the solar developer. Customers pay a monthly service fee to the developer, in exchange for the solar equipment ownership, operation, and maintenance services provided by the developer. The performance of the solar PV system is guaranteed by the developer.

Currently, CSGAs are a proprietary product of the Virginia developer, Secure Futures, but the company's founder and chief executive officer, Tony Smith, has expressed interest in licensing the CSGA model to a nonprofit group that could propagate the model more widely.⁹

Performance Contracting

Guidance from the US Department of Energy suggests that local governments consider including solar PV systems and other renewable energy improvements as part of energy savings performance

⁹ <http://powerforthepeopleva.com/2014/03/31/a-new-business-model-for-non-profits-brings-solar-into-hostile-territory/>

contract (ESPC) arrangements, which many local governments have been pursuing. ESCPs allow local governments to receive building energy-efficiency improvements up front, paid for by a vendor, with repayment to the vendor over the contract period from the savings resulting from lower energy bills. Renewable energy systems could be incorporated in ESPC procurements from the outset, combining in cost-effective ways with energy-efficiency improvements and maximizing the total energy-reduction benefits of the overall project.¹⁰

Bulk Purchases (for Local Government Facilities)

Local governments could potentially reduce the cost of solar PV equipment for installation on their own facilities by coordinating bulk purchases of solar PV equipment with other local governments.

One leading example of this type of initiative is the Alameda County Regional Renewable Energy Procurement Project (R-REP), a collaborative procurement and purchasing effort among three counties, 11 cities, and four other local government units in the region east of San Francisco Bay in California.¹¹

R-REP began organizing in 2011, building on the successes—and lessons learned—from an earlier collaborative purchasing effort, the Silicon Valley Renewable Energy Project (SV-REP), among many of the same entities. R-REP is coordinated by two local nonprofit conveners, a government agency in charge of leading the government procurement process and negotiations with possible participants and vendors, and a steering committee of participants and experts providing overall direction and leadership. These three leadership entities also hired technical consultants, a finance consultant, and an economic analyst to provide specialized expertise.

Ultimately, R-REP produced discounted solar projects for 186 sites, including schools, municipal facilities, medical centers, and libraries. Before selection, projects were evaluated for their suitability. R-REP solicited bids for bundles of sites, rather than individual sites, which not only reduced the administrative workload for the collaborative, but were also more attractive to potential vendors.

According to Caroline Judy, assistant director of the Alameda County General Services Agency, projects under the R-REP procurement saved 15–47 percent over market prices. “We’re going to save taxpayers \$108 million and generate 470 local jobs,” she told Solarenergy.net.¹²

Although two-thirds of participating entities opted to sign Power Purchase Agreements for solar power under R-REP, the remaining one-third of the participants purchased the solar PV equipment directly or entered into a solar lease.¹³

¹⁰ *Solar Powering Your Community: A Guide for Local Governments. Second Edition.* January 2011. US Department of Energy.

¹¹ A Model of Collaborative Solar Purchasing: The Alameda County Regional Renewable Energy Procurement Project, Clean Energy States Alliance

¹² <http://solarenergy.net/News/how-one-calif-county-takes-group-solar-purchasing-to-huge-new-level/>

¹³ A Model of Collaborative Solar Purchasing: The Alameda County Regional Renewable Energy Procurement Project, Clean Energy States Alliance

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Combination of Strategies

Local governments in Florida could choose to combine two or more of the above strategies in deploying solar PV energy systems on their facilities, depending on their specific needs and circumstances.

Fostering Solar in Local Communities

Of course, government facilities make up only a small fraction of the potential sites for rooftop solar PV installations. Local governments looking to foster solar deployment on residential and commercial properties in their communities have a variety of financial options they can employ. In addition, Appendix C features a table which briefly outlines some of the major advantages and disadvantages of each of the options described below.

Property Assessed Clean Energy (PACE) Programs

Property Assessed Clean Energy (PACE) programs have taken hold in many local communities across the United States. In PACE programs, property owners receive up-front financing from lenders to pay for renewable energy systems (or other improvements) and repay the loan over a period of years through a special assessment included in property tax bills. The debt is attached to the property, rather than the owner, and can transfer to the new owner upon a sale.

One significant barrier to wider use of this tool in the United States by homeowners is the Federal Housing Finance Authority's prohibition on any federally-backed mortgages from participating in PACE programs. As approximately 90 percent of all mortgages in the United States are backed by Freddie Mac or Fannie Mae, this presents a challenge. But the remaining 10 percent of homes and all homes owned outright, as well as commercial buildings, still represent a sizable number of properties which could participate in PACE programs. (See Federal-Level Options for more information.)

The Florida Legislature authorized PACE in Florida in 2010. Municipalities, counties, dependent special districts of a county or municipality, and separate legal entities created by interlocal agreements may create PACE programs. Local governments must authorize PACE programs within their jurisdiction by adopting a resolution or ordinance creating a program or joining an existing program by interlocal agreement.

The law governing PACE in Florida permits property owners to finance not only renewable energy improvements such as wind energy and solar energy systems, but also energy efficiency and wind resistance improvements. In addition, under Florida law, the sponsoring local government or entity may engage a third party to offer the financing and administrative services.

Communities in Florida looking to offer PACE within their jurisdictions have three options:

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- Join an existing statewide program
- Join an existing local program
- Create their own program

Two entities currently offer multi-jurisdictional PACE programs to municipalities and counties statewide:

- The Florida Green Finance Authority offers the Florida Green Energy Works program, which provides PACE funding to commercial properties. (It has not yet offered residential PACE programs.) The Authority was initially formed by the towns of Lantana and Mangonia Park in Palm Beach County.
- The Florida PACE Funding Agency was created by the city of Kissimmee and Flagler County and offers residential and commercial PACE programs.

To join either of these programs, a local government would need to adopt by resolution or ordinance an interlocal agreement with the sponsoring agency.

In addition, several locally-focused PACE programs have been established in Go SOLAR Florida partner jurisdictions.

- The Clean Energy Green Corridor District was formed by seven municipalities in Miami-Dade County to offer PACE financing. The municipalities are South Miami, Pinecrest, Palmetto Bay, Miami, Miami Shores, Cutler Bay, and Coral Gables. Both commercial and residential properties are eligible for PACE financing in five of the seven municipalities; however, only commercial properties are eligible in Coral Gables, and Miami does not allow single-family residential properties to participate.
- A Clean Energy Coastal Corridor District is under development by the communities of Surfside, Bay Harbor Islands, Biscayne Park, Key Biscayne, El Portal, and North Bay Village in Miami-Dade County, but is not yet fully operational. In the meantime, however, the Coastal Corridor District entered into an interlocal agreement with the Clean Energy Green Corridor District to allow eligible property owners to access PACE financing immediately.
- A third district is also developing in northwest Miami-Dade County. Miami Lakes and Medley are the first jurisdictions to participate.
- Broward County has taken significant steps towards establishing a PACE program, but it is not yet operational. The Broward County Commission directed staff to negotiate with two third-party administrators to offer PACE financing within the County. If PACE financing is approved by the Board of County Commissioners, property owners will be able to assess both administrators' offerings and select the financing arrangement that suits them best.
- The Solar and Energy Loan Fund, based in St. Lucie County, unveiled a commercial PACE program in 2014.
- Alachua County and Monroe County are currently considering PACE programs, and Miami-Dade County is looking into PACE for properties in unincorporated areas.

In October 2014, the Florida Bankers Association filed a lawsuit asserting that the Florida Property Assessed Clean Energy Act unconstitutionally allows PACE special assessments to take priority over other property liens, such as mortgage loans. Many communities pursuing PACE programs are watching this case carefully, with some even pausing their efforts to create programs while they await a decision by the Florida Supreme Court, which is expected in mid-2015.

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Low-Interest Loans

Local Government Authority

At least one local government in Florida offers low-interest loans for solar PV systems directly to its residents: Lauderhill in Broward County. Residents may apply to borrow between \$400 and \$2,000 interest-free for up to two years; the loan term may be shortened if desired. If the application is approved by city staff, the loan funds are paid directly to the contractor installing the solar PV system. Ten percent of the loan amount is held back until a project completion certificate is signed by both the contractor and the borrower and copies of all required permits are submitted to the city.

Community Development Financial Institutions

Community Development Financial Institutions (CDFIs) are private-sector financial organizations with community development goals, focusing especially underserved areas or populations.

The Solar and Energy Loan Fund (SELF) was created in 2009 by the St. Lucie Board of County Commissioners as a nonprofit organization to finance clean energy and energy efficiency improvements for homeowners and businesses. SELF won a \$2.9 million grant from the US Department of Energy in 2009, including \$1.65 million to capitalize a revolving loan fund. Lending operations began in St. Lucie County in 2011, and the US Department of the Treasury certified SELF as a CDFI in December 2012.

SELF targets low- and moderate-income households in its service areas. Upon pre-approving a borrower, SELF conducts an energy assessment on the borrower's property and assists in identifying the energy efficiency improvements and solar systems that would be most cost-effective. Solar PV is one of the options. Residential loans for solar PV systems average approximately \$25,000, with a maximum term of 10 years and an interest rate of 6.5-7.5 percent, while commercial solar PV loans average \$30,000, with a maximum loan term of 15 years and a similar interest rate, 6.5-7.5 percent.

SELF has expanded beyond St. Lucie County to also offer its services in Okeechobee, Martin, Indian River, and Brevard counties. It will expand into the metro Orlando area in late 2014, and it has also identified the Tampa Bay area as a likely area for future expansion.

Partnerships with Financial Institutions

Local governments and municipal or cooperative utilities could work with financial institutions to offer low-interest loans for solar PV systems.

For example, the Orlando Utilities Commission (OUC) has partnered with the Orlando Federal Credit Union to offer low-interest loans to OUC customers for solar PV systems. The property must be owner-occupied, but single-family, townhouse, duplex, and condominium units can qualify.

Economic Incentive Programs

Mitigation of the Tangible Personal Property Tax on Leased Equipment

Solar leasing arrangements offer benefits similar to power purchase agreements without violating the state's prohibition on the third-party sale of electricity. Property owners lease a solar PV system from a provider for a predictable monthly fee, and the electricity generated by the system offsets the property's electrical bill through net metering. At the end of the lease term, customers often have the option of purchasing the system outright.

However, one barrier to wider adoption of solar leasing arrangements in Florida is the tangible personal property tax that solar equipment providers must pay on any equipment leased to customers. Solar developers have estimated that this tax can add 2.5 cents or more per kWh of electricity generated by leased solar PV systems, thereby undermining the financial case for solar leasing.

Counties and municipalities could seek to induce wider adoption of solar leasing by using revenue generated by the tangible personal property tax to fund an economic incentive program for leased solar installations. In essence, the county or municipality's share of the tangible personal property tax generated by a solar PV leasing project would be refunded to the project developer. Knowing its tax burden would be reduced, a solar developer might be more likely to offer solar leasing agreements in the jurisdiction offering the incentive.

Such a program would be revenue-neutral, as the revenue would be generated by solar leasing activity which would not otherwise occur but for the existence of this incentive.

The program would be even more effective if both a county and municipality were to offer the incentives. In Broward County, for example, the County receives roughly 25 percent of the property tax collected; a municipality receives approximately 20 percent; Combined County and municipality incentives could reduce the property tax burden by nearly half.

This incentive program could be designed to end automatically should a Florida law take effect reducing or eliminating the tangible personal property tax on leased renewable energy equipment.

Broward County is currently investigating the practicality of this approach.

Cash Incentives and Rebates

Local governments could also choose to fund economic-incentive programs for residential or commercial rooftop solar PV systems directly out of their operating budgets or through other means (e.g., grants). Such incentives could be designed in any number of ways, including rebates or grants for set amounts tied to the type and size of solar PV systems or a production-based incentive linked to the amount of energy produced by a solar PV system. The budgetary impact of such incentive programs could be limited, by capping the number of participants or setting a maximum expenditure level.

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Bulk Purchasing (for Homeowners and Businesses)

In addition to establishing bulk purchasing programs for government entities themselves (see above), local governments could facilitate bulk purchases by homeowners and businesses.

For example, the Solar Chicago bulk purchasing program offers discounted solar PV systems to owners of single-family or two-family residences in seven counties in the Chicago metro area. The program sponsors—the City of Chicago, World Wildlife Fund, Vote Solar, the Environmental Law and Policy Center, and ICLEI-Local Governments for Sustainability—Issued a Request for Proposals in early 2014 and selected Juhl Renewable Energy System and Microgrid Solar as the solar installer team. Their winning proposal offered a base cost of \$3.49 per watt for solar PV systems, “more than a 25 percent discount off the average market installation costs.”

Additional per-watt charges apply for installations outside of the City of Chicago and several other central partner municipalities, to account for travel costs. Furthermore, as the amount of solar capacity installed through the program reaches certain levels, property owners will receive additional rebates at the end of the program (\$0.15/watt if total capacity exceeds 100 kW and \$0.30/watt if total capacity exceeds 400 kW). The installation team also partnered with a local bank to offer loans through the program.

Local Government Infrastructure Surtax

County governments in Florida are allowed to impose a local-option sales tax within their jurisdictions to raise revenue for a variety of purposes. One variety of this local sales tax is the Local Government Infrastructure Surtax, which can be set at either ½ cent or 1 cent. In 2012, the Florida Legislature expanded the permissible uses of this surtax to include the provision of loans, grants, or rebates to both residential and commercial property owners for energy efficiency improvements, including solar PV systems.

To levy the Local Government Infrastructure Surtax, a county commission would have to adopt an ordinance, which voters would then have to approve by referendum. Similarly, authority to use the surtax revenue for energy efficiency improvements requires both a county ordinance and approval of the ordinance by countywide referendum.

To date, no county in Florida has pursued this method for funding energy-efficiency improvements, but it remains available.

Qualified Energy Conservation Bonds (to Support Private-Sector Initiatives)

Up to 30 percent of the proceeds of the Qualified Energy Conservation Bonds described earlier may be used to support private-sector initiatives, including solar equipment rebate programs and PACE programs. By designing a program that meets the “green community program” requirements of the

QECB regulations, however, up to 100 percent of the bond proceeds could be used to support private-sector loans.¹⁴

The Sustainable and Verifiable Energy Savings (SAVES) program in St. Louis County, Missouri, pursued this 100-percent option. Established in 2011, using a \$10 million QECB allocation and approximately \$600,000 in Energy Efficiency and Conservation Block Grant funds, the program offered loans of between \$2,500 and \$15,000 for owner-occupied single-family residential homes at a maximum interest rate of 3.5 percent. Although the program was primarily designed to finance energy efficiency improvements, renewable energy systems were eligible if the home was already energy efficient. Borrowers were required to have a minimum credit score of 660 and a debt-to-income ratio of 45 percent or less. After applying the federal interest rate subsidy, St. Louis County's effective interest rate on the bonds was only 0.7 percent.¹⁵

St. Louis County hoped to provide as many as 1,400 loans through the SAVES program.¹⁶ As of November 2012, the County had approved 311 loans and 178 projects had been initiated.¹⁷

Combination of Strategies

As noted above, some of these strategies could work together effectively.

Conclusion

The options presented in the Plan are exactly that: options. Every community must decide for itself which solar financing tools it wishes to employ, based on its own unique conditions and circumstances.

For those local governments interested in supporting solar PV deployment on their own facilities and by residents and businesses in their communities, there is no better time to act than the present. Solar PV systems are nearing price parity—even in Florida, with its generally low electricity prices—and action by local government could spark a wave of widespread solar PV adoption. Local governments, supported by positive policy choices at the state and federal levels and participation from homeowners and businesses, can make the Sunshine State truly live up to its name.

¹⁴ Using Qualified Energy Conservation Bonds (QECBs) to Fund a Residential Energy Efficiency Loan Program: Case Study on Saint Louis County, MO, Clean Energy Financing Policy Brief, June 20, 2011, Lawrence Berkeley National Laboratory.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ "Miami-Dade County Energy Efficiency and Renewable Energy Finance Program – Update of Existing Programs," November 2013, Office of Sustainability, Department of Regulatory and Economic Resources, Miami-Dade County.

Appendix A: Action Steps

HOMEOWNERS

Homeowners can:

1. Investigate solar options for their homes, taking advantage of any appropriate financing options.
2. Discuss solar energy policies with their state, local, and federal legislators.
3. Spread the word about the Go SOLAR Florida website to others to promote solar energy and increase awareness of financing options.

BUSINESSES

Businesses can:

1. Offer support for this Action Plan.
2. Offer support for policies and legislation which promote solar energy at the local, state, and federal level.
3. Consider installation of solar PV systems on their facilities, taking advantage of any financing options that fit their circumstances.
4. Join the Go SOLAR Industry Advisory Council.
5. Market the Go SOLAR Florida website to customers and colleagues to promote solar energy and increase awareness of financing options.

LOCAL GOVERNMENT

Local governments can:

1. Identify solar advocates within their organizations. One strategy local governments might consider is identifying one commission member to champion policy change and a staff member to implement it.
2. Study this document and other resources to become informed on the available financing options.
3. Select and implement those options that best fit local conditions and preferences for solar PV investments on public facilities:
 - a. Direct purchase
 - b. Bond financing
 - i. General obligation bonds
 - ii. Qualified Energy Conservation Bonds
 - c. Solar leasing
 - d. Solar services
 - e. Performance contracting
 - f. Bulk purchases
 - g. Combination of strategies
4. Select and implement locally-appropriate policies to support solar PV among homeowners and businesses:
 - a. Property Assessed Clean Energy (PACE) programs
 - b. Low-Interest loans

- i. Local government authority
 - ii. Community development financial institutions
 - c. Partnership with financial institutions
 - d. Economic Incentive programs
 - i. Mitigation of the tangible personal property tax on leased equipment
 - ii. Cash incentives and rebates
 - e. Bulk purchasing
 - f. Local government infrastructure surtax
 - g. Qualified Energy Conservation Bonds
 - h. Combination of strategies
5. Pursue commission approval of a resolution in support of solar energy and solar financing options in Florida (see Appendix E for sample language) and transmit it to the Go SOLAR Florida partners for posting online.
 6. Offer support for legislation and policies at the state and federal level which promote solar energy (e.g., in a local government's legislative program).
 7. Market the Go SOLAR Florida website to individuals and businesses to promote solar energy and increase awareness of financing options.

Appendix B: Public Investments by Local Government – Advantages and Disadvantages

Options	Advantages	Disadvantages
Direct Purchase	<ul style="list-style-type: none"> • Straightforward • Renewable Energy Credits accrue to buyer • Local government owns the asset 	<ul style="list-style-type: none"> • Large up-front cost • Federal tax credits unavailable to tax-exempt entities (e.g. local governments)
General Obligation Bonds	<ul style="list-style-type: none"> • Commonly used local government financing method 	<ul style="list-style-type: none"> • Bonds backed by property tax proceeds require voter approval in Florida
Qualified Energy Conservation Bonds	<ul style="list-style-type: none"> • Federal government subsidizes interest payments and lowers effective borrowing cost 	<ul style="list-style-type: none"> • May require voter approval, if backed by property tax proceeds • More complicated than general obligation bonds • Bond amount is limited to amount established by federal law
Solar Leasing	<ul style="list-style-type: none"> • No upfront costs for consumer • Known payments for lease term 	<ul style="list-style-type: none"> • Performance of system may not be guaranteed (i.e. less electricity may be generated than initially forecast) • If retail cost of electricity drops, lessee could end up paying higher-than-market rates • Federal tax credits unavailable to tax-exempt entities (e.g. local governments) • Renewable Energy Credits accrue to leasing company • Lease agreements show as debt on balance sheets, according to Financial Accounting Standards Board rules • No ownership

Options	Advantages	Disadvantages
Solar as Service	<ul style="list-style-type: none"> • Customer is buying a service, not electricity, so seller will not be regulated as a utility [end result is something similar to a Power Purchase Agreement (PPA)] • Maintenance and system performance are guaranteed • Federal tax credits accrue to lessor and savings can be passed on to local government lessee • Local government could retain Renewable Energy Credits (must be negotiated with service provider) 	<ul style="list-style-type: none"> • Relatively uncommon, so standardized contract language is not yet available • Local government customer assumes weather risk (i.e. output not guaranteed) • No ownership
Performance Contracting	<ul style="list-style-type: none"> • No up-front cost; contractor paid out of savings from reduced energy expenditures 	<ul style="list-style-type: none"> • Main focus is energy efficiency
Bulk Purchases	<ul style="list-style-type: none"> • Could significantly reduce purchase cost of solar systems 	<ul style="list-style-type: none"> • Could be complex to arrange, if multiple jurisdictions are involved

Appendix C: Fostering Solar in Local Communities – Advantages and Disadvantages

Options	Advantages	Disadvantages
Property Assessed Clean Energy	<ul style="list-style-type: none"> No cost to sponsoring local governments (financing issued by private entities) Administration of program conducted by vendor(s) Uses existing, familiar property tax billing system to collect assessments to repay financing Jurisdictions can opt into existing programs easily by resolution 	<ul style="list-style-type: none"> Initial setup and vendor selection can be complex if jurisdictions choose to create their own programs, rather than join existing programs Florida PACE statute under legal challenge at present time
Low-Interest Loans – Local Government Authority	<ul style="list-style-type: none"> If loans are repaid, no net cost to jurisdiction (other than staff time/administration) Creates a revolving fund if repaid loans are loaned out again Interest and administrative fees could support program administration; any profits could be plowed back into the loan fund 	<ul style="list-style-type: none"> Requires program setup and administration Risk to jurisdiction from bad loans
Low-Interest Loans – Community Development Financial Institutions	<ul style="list-style-type: none"> If loans are repaid, no net cost to institution (other than staff time/administration) Focus on low- and moderate-income households 	<ul style="list-style-type: none"> Requires existence of Community Development Financial Institution serving the area in question Requires program setup and administration Risk to institution from bad loans

Options	Advantages	Disadvantages
Economic Incentive Programs – Tangible Personal Property Tax Mitigation	<ul style="list-style-type: none"> • Since little or no tax revenue is being generated from solar leasing projects now, local governments would not be losing any funds by choosing to mitigate the tangible personal property tax for solar leasing projects • Agreement by county and municipal governments to offer this incentive could cut tax bills by roughly half (depending on local tax rates) 	<ul style="list-style-type: none"> • Concept still in its infancy • As any one local government's share of the total tangible personal property tax bill is fairly small (25-35% at most), the incentive would be similarly modest
Economic Incentive Programs – Cash Incentives and Rebates	<ul style="list-style-type: none"> • Direct and easy to understand • Can be tailored to focus on low- and moderate-income households 	<ul style="list-style-type: none"> • Requires program setup and administration • Local government must expend funds for incentives and rebates
Bulk Purchasing	<ul style="list-style-type: none"> • No cost to local government (other than program setup and administration) 	<ul style="list-style-type: none"> • Requires program setup and administration
Local Government Infrastructure Surtax	<ul style="list-style-type: none"> • Option already exists in statute • Proceeds could support loans or economic incentives described above 	<ul style="list-style-type: none"> • Untried for this purpose • Requires voter approval

Options	Advantages	Disadvantages
Qualified Energy Conservation Bonds	<ul style="list-style-type: none"> Federal government subsidizes interest payments and lowers effective borrowing cost Proceeds could support loans or economic incentives described above Successful models exist 	<ul style="list-style-type: none"> May require voter approval, if backed by property tax proceeds More complicated than general obligation bonds Bond amount is limited to amount established by federal law Use for residential rebates or other private-sector incentives requires program setup and administration

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Appendix D:
Existing Solar Financing Options in Go SOLAR Partner Jurisdictions

Jurisdiction	Local Government	Municipal Utility
Monroe County	<ul style="list-style-type: none"> • PACE program under consideration 	<ul style="list-style-type: none"> • Florida Keys Electric Cooperative <ul style="list-style-type: none"> ◦ Net metering ◦ Simple Solar community solar program (lease of Cooperative-owned panel, customers are credited for electricity generated) • Keys Energy Services <ul style="list-style-type: none"> ◦ Net metering
Miami-Dade County	<ul style="list-style-type: none"> • PACE program in certain areas • PACE for unincorporated areas under consideration 	<ul style="list-style-type: none"> • n/a <ul style="list-style-type: none"> ◦ (only Homestead has a municipal utility, and it offers no incentives)
Broward County	<ul style="list-style-type: none"> • PACE program under development 	<ul style="list-style-type: none"> • n/a
St. Lucie County	<ul style="list-style-type: none"> • Solar and Energy Loan Fund (SELF) <ul style="list-style-type: none"> ◦ Low-interest loans for homeowners ◦ Low-interest loans for businesses • PACE for commercial properties (through Florida Green Energy Works and SELF) 	
City of Venice	<ul style="list-style-type: none"> • None 	<ul style="list-style-type: none"> • n/a
Orange County	<ul style="list-style-type: none"> • None 	Orlando Utilities Commission Incentives <ul style="list-style-type: none"> • Net metering (homes and businesses) • PV production credit program of \$0.05/kWh for homes and businesses (essentially a feed-in tariff) • Community solar program (customers subscribe to 1 kW blocks of solar PV array and enjoy the same \$0.05 production credit as customers with solar on their properties)

Jurisdiction	Local Government	Municipal Utility
		<ul style="list-style-type: none"> Low-interest loans through Orlando Federal Credit Union (homes)
Alachua County	<ul style="list-style-type: none"> PACE program under consideration 	Gainesville Regional Utilities incentives <ul style="list-style-type: none"> Net metering (for both homes and businesses) Feed-in-tariff (for both homes and businesses) – suspended for 2014

Note: In areas not served by municipal utilities, net metering is available through investor-owned utilities.

Appendix E:
Sample Resolution of Support for Solar Photovoltaic Energy
and the Florida Solar Financing Action Plan

WHEREAS, solar photovoltaic energy offers many potential benefits, including lower electricity costs for homeowners, businesses, and governments; local jobs and economic development; reduced dependence on imported fuels; pollution-free electricity generation; and contribution to more resilient electric grids; and

WHEREAS, Florida has the third-highest potential for rooftop solar energy generation in the United States, but currently ranks 13th in the nation for installed solar capacity; and

WHEREAS, in late 2013, the Go SOLAR Florida team, consisting of Broward, Alachua, Miami-Dade, Monroe, Orange, and St. Lucie counties, the City of Venice, the Florida Solar Energy Center, and Florida Atlantic University, received a \$2.3 million Rooftop Solar Challenge II grant from the U.S. Department of Energy to expand the streamlined online solar permitting system developed by Broward County under an earlier grant award; and

WHEREAS, one of the Rooftop Solar Challenge II grant deliverables is a Florida Solar Financing Action Plan, exploring the benefits of solar energy and outlining a strategy to improve access to solar financing in the state of Florida; and

WHEREAS, the *Florida Solar Financing Action Plan: A Menu of Options* contains a variety of financing options for homeowners, businesses, and local governments to consider, while recognizing there is no one-size-fits-all solution for the diverse types of communities, families, and businesses in the state of Florida; and

WHEREAS, to build support for solar photovoltaic energy generation and awareness of solar financing options within the state of Florida, the Go SOLAR Florida team is seeking to secure resolutions of support from all sixty-seven (67) counties in Florida, NOW, THEREFORE,

BE IT RESOLVED BY THE BOARD OF COUNTY COMMISSIONERS OF _____
COUNTY, FLORIDA:

Section 1. The Board supports the expansion of solar photovoltaic energy generation in the state of Florida.

Section 2. The Board welcomes the publication of the *Florida Solar Financing Action Plan: A Menu of Options* as a valuable resource for local governments seeking to expand the use of solar photovoltaic energy in their communities, without specifically endorsing any of the individual options contained therein.

Section 3. The Board directs County staff to review the Florida Solar Financing Action Plan: A Menu of Options and determine if any of the options therein should be recommended for consideration by the Board.

Section 4. The Board encourages all other counties in Florida to adopt this or similar resolutions supporting solar photovoltaic energy generation and awareness of solar financing options within the state of Florida.

Section 5. SEVERABILITY.

If any portion of this Resolution is determined by any Court to be invalid, the invalid portion shall be stricken, and such striking shall not affect the validity of the remainder of this Resolution. If any Court determines that this Resolution, or any portion hereof, cannot be legally applied to any individual(s), group(s), entity(ies), property(ies), or circumstance(s), such determination shall not affect the applicability hereof to any other individual, group, entity, property, or circumstance

Section 6. EFFECTIVE DATE

This Resolution shall become effective upon adoption.

STATE OF FLORIDA)
)
COUNTY OF MIAMI-DADE) SS:

I, **HARVEY RUVIN**, Clerk of the Circuit and County Courts, in and for Miami-Dade County, Florida, and Ex-Officio Clerk of the Board of County Commissioners of said county, **DO HEREBY CERTIFY** that the above and foregoing is a true and correct copy of Resolution No. R-315-15 adopted by the Miami-Dade County Board of County Commissioners, at its meeting of April 21, 2015, as appears of record.

IN WITNESS WHEREOF, I have hereunto set my hand and official seal on this 23th day of July, A.D., 2015.



HARVEY RUVIN, Clerk
Board of County Commissioners
Miami-Dade County, Florida

By: 
Deputy Clerk

Board of County Commissioners
Miami-Dade County, Florida