

VERO BEACH UTILITIES COMMISSION MEETING
Tuesday, July 12, 2016 – 2:00 p.m.
City Hall, Council Chambers, Vero Beach, Florida

AGENDA

- 1. CALL TO ORDER**
- 2. PRELIMINARY MATTERS**
 - A) Approval of Minutes**
 - 1. June 14, 2016**
 - B) Agenda Additions, Deletions, and Adoption**
- 3. PUBLIC COMMENT**
- 4. NEW BUSINESS**
 - A) Explanation of Utilities Bills (Electric and Water/Sewer) by Category (City/County/Indian River Shores) – Ms. Cynthia Lawson / Mr. Rob Bolton**
 - B) Reuse Water – Mr. Rob Bolton**
 - C) FMPA 2016 Annual Report – Mr. Jim O’Connor**
 - D) FMPA Solar Power Survey – Vice Chairman Auwaerter / Mr. Jim O’Connor**
- 5. OLD BUSINESS**
 - A) Analysis of How Costs from City Departments that are in the General Fund Budget that do not Directly Work for the City’s Electric and Water/Sewer Operations are Charged Back to the Electric and Water/Sewer Funds. Analysis to Include the Methodology for Allocating Costs Between these Funds and the General Fund – Ms. Cynthia Lawson (backup to be provided)**
- 6. CHAIRMAN’S MATTERS**
- 7. MEMBER’S MATTERS**
- 8. ADJOURNMENT**

This is a Public Meeting. Should any interested party seek to appeal any decision made by the Commission with respect to any matter considered at such meeting or hearing, he will need a record of the proceedings and that, for such purpose he may need to ensure that a record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based. Anyone who needs a special accommodation for this meeting may contact the City’s Americans with Disabilities Act (ADA) Coordinator at 978-4920 at least 48 hours in advance of the meeting.

VERO BEACH UTILITIES COMMISSION MINUTES
Tuesday, June 14, 2016 – 9:00 a.m.
City Hall, Council Chambers, Vero Beach, Florida

PRESENT: Chairwoman, Laura Moss; Vice Chairman/Indian River Shores Representative, Robert Auwaerter; Members: Chuck Mechling , Bill Teston, Judy Orcutt, and Alternate Member #1, George Baczynski **Also Present:** City Manager, James O’Connor; City Attorney, Wayne Coment; Water and Sewer Director, Rob Bolton; Transmission and Distribution Director, Ted Fletcher and Deputy City Clerk, Sherri Philo

Excused Absences: J. Rock Tonkel and Stephen Lapointe

1. CALL TO ORDER

Today’s meeting was called to order at 9:00 a.m.

2. PRELIMINARY MATTERS

A) Approval of Minutes

1. May 10, 2016 – Regular Meeting

Mrs. Moss referred to the first paragraph on page 2 of the May 10, 2016 regular Utilities Commission minutes. She said the word “not” is missing from the statement “*She said that she checked the City’s website this morning and the new information was there*” so the statement should read “*She said that she checked the City’s website this morning and the new information was not there.*” She then referred to page 8 noting that the word “*but*” should be excluded from the sentence “*She said the gist of the Executive Summary is that these practices were not consistent with industry practices, but utilized by other organizations of that kind.*” She noted that there were areas in the minutes where the word “*mute*” should be “*moot.*”

Mr. Mechling made a motion to approve the minutes of the May 10, 2016 regular Utilities Commission meeting as amended. Mr. Auwaerter seconded the motion and it passed unanimously.

2. May 2, 2016 – Joint Utilities/Finance Commission Meeting

Mrs. Moss referred to the fifth paragraph on page 10 of the May 2, 2016 joint Utilities/Finance Commission minutes. She said that she agreed with Mr. Tonkel on the \$20 million dollar difference in that she was also troubled by it. But, the way it reads it indicates that she agreed with Mr. Tonkel’s entire statement, “*Mr. Tonkel said although he was troubled by the fact that there was a \$20 million dollar difference in the preliminary evaluation and what was given to them today, it seems to be a reasonable analysis to take to the interested parties for further negotiations.*” She then referred to the fifth paragraph from bottom on page 10 and requested that the sentence be added “*Of course the terms would have to be favorable.*”

Mr. Mechling made a motion to approve the minutes of the May 2, 2016 joint Utilities/Finance Commission meeting as amended. Mr. Baczynski seconded the motion and it passed unanimously.

B) Agenda Additions, Deletions, and Adoption

Mr. Auwaerter said that he would like to have a discussion about the allocation of costs from the chargeback from the General Fund to the Electric Revenue Fund. He did not know if this would need to be added to the agenda or if he could bring it up under Members Matters.

Mrs. Moss asked the Commission members if anyone was opposed to discussing this under Member's Matters. There were no objections.

Mr. Mechling made a motion to adopt the agenda as amended. Mr. Baczynski seconded the motion and it passed unanimously.

3. PUBLIC COMMENT

None

4. NEW BUSINESS

A) Presentation by Dr. Edith Widder of the Ocean Research & Conservation Association (ORCA) regarding their Water-Monitoring Projects Employed in the Lagoon

Mrs. Moss said surprising not everyone in the community knows that the Utilities Commission is charged not only with the Electric Utility, but with Water, Sewer and Stormwater. She read from the 2016 Utilities Commission's Annual Report, Water and Sewer – 2016 Objectives, "*Monitor the health of the Lagoon as it relates to Water and Sewer*" and "*Continue to make recommendations and encourage open lines of communication with the County.*"

Mrs. Moss gave the Bio of Dr. Edith Widder of the Ocean Research & Conservation Association (ORCA) and welcomed her to today's meeting.

Dr. Widder said that she is a Deep Sea Biologist, but her big concern is with the ocean as a whole and the estuaries, which are the nursery of the ocean. Therefore, she has focused her efforts to try to save the ocean by trying to save its nurseries. She said the Indian River Lagoon is obviously in need of help. She then gave a Power Point presentation on Monitoring the Health of the Indian River Lagoon (attached to the original minutes).

*Please note that questions and discussion took place throughout the Power Point presentation.

Mr. Auwaerter asked is there any cost efficient methodology to clean up the canals that take into account what they have discovered.

Dr. Widder said that they have been talking a lot about it. They spoke with the Army Corp of Engineers about an algae harvesting system, which so far the Army Corp of Engineers has not been too excited about, but ORCA is still working on it.

Mrs. Moss asked locally, what is the most pressing issue.

Dr. Widder said that is what she wants to know and what they are trying to figure out. She said that she recently has become very interested in the potential effects of bio-solids. She was not saying that is the problem, but it might be more of a problem then she originally thought. She noted that switching septic to sewer is a great idea, but it doesn't make the problem go away. She explained that sewage treatment plants produce bio-solids (sludge) that have to be distributed, which often is distributed to ranchlands, which adds a lot of phosphate to the land.

Mrs. Moss asked how long have they been measuring with the Kilroy (monitoring system) in the Treasure Coast area.

Dr. Widder answered two (2) years. They have been using the Kilroy 25 for less than one (1) year. She explained that the Kilroy 25 has all the bells and whistles.

Mrs. Moss asked if they have noticed any change, positive or negative, in this immediate area. She said the City has a Fertilizer Ordinance in affect especially during the summer months. She asked have they noticed if this was effective.

Dr. Widder said they didn't have the nutrient centers out last summer and she would need to have at least one (1) year of data. Unfortunately, they didn't have them out before the Fertilizer Ordinance was adopted.

Mrs. Moss asked what is the cost of the Kilroy.

Dr. Widder said including installation the cost is \$85,000 dollars and there is a maintenance cost of \$25,000 to \$30,000 dollars a year.

Mr. Baczynski asked is taking the sludge from sewer treatment plants to ranchlands exporting the problem further inland.

Dr. Widder answered yes.

Mr. Baczynski asked what would be a solution where they are not recycling this around.

Dr. Widder said there are several areas that are discussing this as it is a problem that is being seen everywhere. She said there are arc furnaces that actually burn the sludge and produce energy. She noted that they are very expensive initially, but they help pay for themselves over time by producing energy.

Mrs. Orcutt thought there was a Plant in Sanford that was doing that, but she did not think they received support from the local municipalities to send them their sludge, so there wasn't enough sludge coming in to make it cost effective. She felt that by possibly having a regulation preventing sludge spreading it might force a more ecological solution, which would be to process it for energy.

Dr. Widder said one concern they have is how they classify bio-solids. She said Class A and Class B is really nasty stuff that has pathogens in them. By law they have to track exactly how much goes where. She said Class AA is sludge that has been treated by mixing in 50% yard waste, which is dried and made it into pellets and is often marketed as milorganite and they don't have to track it. She said there is no monitoring of how much milorganite is being distributed. She said that she was told by someone in Waste Management that they don't think it was being abused because it costs money to produce it so it is not distributed in the way Class A and Class B is.

Mrs. Orcutt said there is a Plant in Okeechobee that is processing sludge and mixing it with yard waste. She said it is not pelletized. They are composting it and selling it very inexpensively to sod farmers by the truckloads.

Dr. Widder said they need to actually monitor and measure this to find out if this is a big problem. They have to have hard answers, not just guess work.

Mr. Baczynski said what they are stating is that some solutions are "spot" solutions. He said in order to have an affect overall there has to be some cooperation from all the surrounding communities. He said there has to be some kind of overall direction from the State level in order to get this done.

Dr. Widder felt that living shorelines was a great way for local communities to make a difference in the Lagoon.

Mr. Baczynski asked are there other organizations at the community level that could exchange information and best practices.

Dr. Widder said they now have the Indian River Lagoon Council who are doing a good job in getting people to work together.

At this time, the Chairwoman opened the meeting for public comments.

Mr. Mark Mucher said there is a gentleman of Harbor Branch who is blaming the entire problem with the Lagoon on septic tanks. He asked for Dr. Widder's opinion. He asked is it possible to sample the muck to see if there is human waste in it.

Dr. Widder said that Mr. Brian Lapointe's (of Harbor Branch) statement about the impact of septic tanks was based primarily on stabilized radioisotope labeling studies and he is using the ratios that he finds in macroalgae as an indicator. The trouble is that those same ratios could be caused by bio-solids, as well as organic buildup in their impoundments.

She said that she was not convinced based on Mr. Lapointe's data that it is septic. She was not saying it wasn't, but she doubted that it was the sole problem. She said that Mr. Mucher had a very good suggestion regarding human waste and they are actually doing that. They have been looking at bacteroides as an indicator of the presence of human waste. They have also been trying to look at the macrobiom in a broader sense to see which microbes there are when there is human waste verses other types of waste. It is fairly complicated to do this and they are running a bunch of different experiments to try to figure out the most practical way to do this in the most cost effective manner.

Mrs. Orcutt felt that the general public gets very confused by the media because it brings so much attention to the crisis at the moment, such as the fish kill in the northern lagoon and the Lake Okeechobee runoff in the southern lagoon. She said that she keeps trying to focus on what is more specific to Indian River County. As a comparison, a recent article in the newspaper talked about the agricultural impact on the St. Lucie County watershed and just from agriculture it was 300,000 acres. She said in Indian River County it is much smaller at about 6,000 acres. She wanted the public to understand that when it is stated that the different entities are meeting their nutrient load criteria that these are big problems that affect the Lagoon as a whole. But, for Indian River County agriculture has a miniscule impact.

Dr. Widder asked Mrs. Orcutt if she looked at the numbers for the spreading of bio-solids in Indian River County.

Mrs. Orcutt answered no. She said the reason why it is such a small impact on Indian River County's part of the Lagoon is because so much of our County is the St. John's Water Management District, which sends the water west.

Dr. Widder said that she is open to all areas as to what is contributing the most. But, she is becoming more and more convinced of the impact from bulk head shorelines, which ORCA would be examining in more detail.

Mr. Carter Taylor, of the Indian River Neighborhood Association (IRNA) and the Indian River Lagoon Council (IRLC), said one of the most striking things that was presented today is the ability to obtain fine grain data as a source of information for further research. He said one of IRNA's main initiatives is to promote septic to sewer conversion. Because of the STEP system in the City the capital cost is limited as the City is mostly built out. However, Indian River County has a large population of septic systems where political leaders are being asked to make decisions in the tens to potentially hundreds of millions of dollars in future infrastructure investment. In consideration of those decisions it is appalling how little data there is in which to base those decisions, especially in light of the relatively low cost of data acquisition and analysis. He said IRNA toured the Canal Reversal project about a year and a half ago, which he thought was a \$30 million dollar project. One question that he asked was how much water and nutrients were going over the weir into the Lagoon and they didn't know the answer. They could tell him precisely how many cubic feet of water was going in, but they couldn't tell him what was in the water. He said they could have known exactly what was going into the Lagoon with the addition of a little bit of money for data

collection. He said Indian River County is currently developing a plan for septic to sewer conversion in which they are using estimates rather than actual data to try to make decisions on how to prioritize the build out of the system and what areas to tackle first. He said they need much more of this type of data collection in order to make effective decision making.

Mr. Richard Curr said that he lives on one of the canopy streets that would be discussed later in today's meeting. However, he felt that it was appropriate to ask a question now. He said there are five (5) full time residents on the western side of his street with two living in the homes year around. They are on generally large lots at about ½ an acre and they generally pump their septic regularly. He said they live on the eastern side of a golf course, of A1A, and a Country Club that is along the river. He asked is there any data that would suggest there is affluent coming from those septic fields that affects the river. He would guess that there was a storm sewer up the street from them that probably pours more into the river than they (his street) contribute.

Dr. Widder said that she did not have the answers. She said that she wants to get hard numbers in order to answer the question.

Mrs. Moss asked is this one of those things that they would have a better idea a year from now.

Dr. Widder said that is her hope. She noted that everything with ORCA depends on funding. They recently received support from the Indian River Community Foundation that will allow them to do a pilot study on a new technique they want to try that might be a low cost way to get some of the answers.

Mr. Rob Bolton, Water and Sewer Director, referred to the first slide of the Power Point presentation, *Nonpoint Source Pollution*. He said everything listed on the slide are contributors. He said back before the Fertilizer Ordinance and the STEP system, Mr. Richard Winger, Mayor at the time, stated that it has taken a long time to get to the situation where they are and they are not going to find it is just one (1) thing that is destroying the Lagoon. It is all the things they have been doing that is destroying the Lagoon and the only way to resolve it is to start to undo some of the things that they did.

Mrs. Moss said there are a number of variables affecting the Lagoon. They need more data collection to determine the priorities.

Mr. Auwaerter asked is there a way to lower the cost of the Kilroys by possibly acquiring more. He asked who do they purchase them from or do they build them themselves.

Mrs. Moss thought it was stated in the presentation that there were two Kilroys in the Treasure Coast and in their opinion there should be six (6) or more.

Dr. Widder said in their opinion Indian River County should have six (6).

Mr. Warren Falls, Managing Director of ORCA, said there are three (3) Kilroys in Indian River County, which were located at Vero Shores, the Indian River Farms Main Relief Canal and Bethel Creek.

Mr. Auwaerter asked is there a way to lower the cost, such as having Kilroys without all the bells and whistles. He asked where are they acquired from, is each one (1) handmade, and is there a way to get more efficient in order to get more data collection.

Mr. Falls said the Kilroys are customized depending on the perimeters they want to monitor. Some instrumentation can be removed or added to each Kilroy. He noted that the quote of \$85,000 dollars was for a complete outfitted unit (all the bells and whistles). At this point they are doing 14 different measurements from a Kilroy every 30 minutes to every four (4) hours depending on how they have them set up to report. He said a good portion of the Kilroy is built in-house. They do use two (2) third party sensors to compliment the Kilroy, but the communications and the database is their design.

Mr. Auwaerter wondered if there was a way to contract this out to acquire more at a cost per unit. He asked is there a way to farm out the design to a contractor who could build the Kilroys cheaper.

Mr. Falls said there is a way to farm out the design, but it would not be any cheaper.

Mr. Auwaerter said it was mentioned that Indian River County has three (3) Kilroys. He asked how many would they need to get as close to the dataset as they can.

Mr. Falls said they are looking for density of data to be able to make calculated decisions. The more data they can simulate the better. He said they could produce a fairly comprehensive dataset for Indian River County with the addition of four (4) to six (6) more.

Mr. Auwaerter said in looking at the City's financials for the 2015/2016 budget year, the City did a "profit" transfer back to the General Fund in the amount of \$950,000 dollars. He felt that they should look into this as the City could use some of that money, along with funds from Indian River County, to look into this in order to make a better decision in terms of capital investment down the line as to whether it is the STEP system or if there are some alternatives.

Mr. Falls said there are actually four (4) Kilroys in Indian River County. He neglected to mention the one in the Sebastian River.

Mr. Mechling asked if he was to assume that dredging canals would help improve the quality of the Lagoon. He asked if that is an indication, is the cooperation there with Army Corp of Engineers.

Dr. Widder said dredging is important because there is so much legacy muck in the bottom of the Lagoon. She said they have been doing some recent measurements of the accumulation in the lagoon and it is staggering. She felt it was more important at this

juncture to get it stopped. They need to figure out where it is coming from. She said it becomes a moot point if they are pulling it out at an enormous cost for it to fill up again as quickly as it seems to be doing.

Mr. James O'Connor, City Manager, said the STEP system was only one issue the City has undertaken. They have also undertaken the Fertilizer Ordinance and they probably have the largest set of baffle boxes and stormwater controls of any city around. Regarding taking funds from the City, that should be something from the Indian River Lagoon Coalition, Indian River Shores, etc., as opposed to the City of Vero Beach being the only contributor.

Mr. Auwaerter said that is a fair statement. He said that he didn't mean to imply that the total burden should come from the City's Water and Sewer Fund.

Mr. O'Connor said they want to make sure when they start allocating costs that they all contribute.

Dr. Widder referred to the slide, *Indian River ORCA / Impact 100 Maps* in the Power Point presentation. She said it really surprised her that the phosphate outstripped the nitrogen.

Mrs. Moss thanked Dr. Widder for her presentation and for the work they are doing.

B) Discussion of Roberts Rules of Order – City Attorney

Mr. Wayne Coment, City Attorney, said the City Attorney's office were asked some questions, particularly about amendments to motions. He said their office sent a memorandum to the Commission/Boards that laid out how they operate, which is that they have the same rules of procedure as the City Council. He noted that Robert's Rules of Order was not wholly adopted by the City Council as the City Council has their own procedures. He explained that if something is addressed that is not specifically addressed in the City Council's adopted rules; it is typically resolved with Robert's Rules of Order. He said for the Commission not to get wrapped around the axle about using Robert's Rules of Order. He said to basically keep it simple.

Mrs. Moss said it was her understanding from the memorandum that if is not in the City's Code that would take precedence then Robert's Rules of Order would be next.

Mr. Coment said these are very informal Boards/Commissions and even the City Council is relatively informal. He said if something weird comes up then yes, they would look at Robert's Rules of Order.

C) 2016 Electric Reliability Performance Report First Quarter – Mr. Ted Fletcher

Mrs. Moss reported that she met with Mr. Fletcher on June 1st and took a tour of the Transmission and Distribution facility. She urged the Commission members to take a tour of the facility if they have not taken one.

Mr. Ted Fletcher, Transmission and Distribution Director, briefly went over the 2016 Reliability Performance Report First Quarter with the Commission members (attached to the original minutes). He asked the Commission members if this is the format that they would like to see moving forward.

Mrs. Orcutt thought the report was very well done. She said the only thing that she didn't see was the definition for FPUA.

Mr. Fletcher said FPUA is the Fort Pierce Utility Authority.

Mrs. Orcutt asked that the definition be included in future reports.

Mrs. Moss referred to page eight (8), *CAIDI – Customer Average Interruption Duration Index*. She asked are the minutes listed after a problem is identified and the repairman is on the scene or after a call is received.

Mr. Fletcher said the minutes listed are from the time the call is received to the time power is restored.

Mr. Auwaerter asked as they go from quarter to quarter, would the graph expand out keeping the previous quarterly data so they can see longer term trends.

Mr. Fletcher said that he would keep the graphs building across so the Commission members can see the long term trends. He noted that the next report would come before the Commission members in August.

D) Installation of STEP System (Canopied Streets) with regard to Sec. 71.14 Rights-of-Way required to be Improved – Mr. Rob Bolton

Mr. Rob Bolton, Water and Sewer Director, gave a Power Point presentation on the Installation of Septic Tank Effluent Pump (STEP) Systems on Canopied Streets (attached to the original minutes). He read from Section 71.14 of the Code of Ordinances, "*There shall be no installations of any utility poles and sewers along, on, or under same and said roads shall remain in their present condition and state as much as possible, and the material used for maintenance shall be sand or shell similar to what is there now.*" He noted that with the STEP system, they use directional drilling tunnels that go under obstacles, such as canopy trees as to cause no harm or damage. He said the Ordinance for canopy streets states that no one can install a sewer system in the right-of-ways. He noted that the Ordinance is in conflict with State regulations.

Mr. Bolton showed the Commission members a video of the installation of a STEP system and aerial views of the canopy streets showing how they would go about installing the lines.

Mr. Mechling said this was done on his street and the job the City has done has been exception. It is a very clean operation. He said the directional boring of the two (2) inch line is nonintrusive, is easy to do, and nothing gets damaged in the process.

Mr. Bolton said the reason he is before the Commission today is to have the discussion on how they are to move forward or not move forward regarding the canopy streets. If the Commission wants to move forward then he would prefer to come back before them with more details so everyone is comfortable that it can be done without having an effect on the trees.

Mrs. Moss asked that the Commission members receive a copy of the State regulations.

Mr. Bolton asked the Commission for some guidance on how they feel the canopy streets should be addressed.

Mr. Carter Taylor said that he has been following the STEP system since it was on the drawing board. He felt that it was a good solution for a particular type of problem. He then read into the record a statement from the IRNA (attached to the original minutes). He said it is important for the local jurisdictions to provide success stories of septic to sewer conversion because it is perceived by the public and by elected officials alike, that this is going to be very expensive and therefore a scary thing to promote.

Mr. Auwaerter made a motion that the Utilities Commission recommends to members of the Vero Beach City Council that the Ordinance that restricts central sewer system installation on canopied streets, adopted roughly 40 years ago, be removed from the City's regulations due to changes in installation technology. Mr. Mechling seconded the motion for discussion.

Mr. Baczynski felt if they remove the Ordinance it would leave the door open for someone to put in gravity sewer and destroy the entire street. He suggested leaving the Ordinance, but modify it to state only the STEP system or better technology.

Mr. Bolton agreed. He felt that instead of removing language that they add language that clearly defines their intent.

Mrs. Orcutt said the Ordinance contains more information than just the sewer, such as not paving the streets, etc. Therefore, to take the entire Ordinance away would be counterproductive. She asked Mr. Bolton if he was looking for guidance from the Commission on if he should move forward to try to solve the problem.

Mr. Bolton answered yes.

Mr. Teston felt that before they get in depth they need to hear from the City's legal staff as to what is the best way to proceed with this.

Mr. Auwaerter said the purpose of his motion was to give direction to staff so they could move forward on this.

Mr. Bolton said that he would work with the City Attorney's office on the Ordinance.

Mrs. Moss asked is there currently a problem. She felt that talking with the residents, which is what Mr. Bolton stated, was the right way to do this. She did not see the need to make it legalistic because that raises people's ire unnecessarily.

Mr. Auwaerter said the problem is if someone says they will not do it.

Mr. Bolton noted that he cannot move forward the way the Ordinance is currently written. He said it appears it is the consensus of the Utilities Commission that they want to move forward with this.

Mr. O'Connor asked that the Commission postpone taking any action and allow staff to bring back some recommendations that are more specific.

Mrs. Moss said that she would appreciate more information.

Mr. O'Connor said staff could bring back a recommendation on how to modify the Ordinance based on input Mr. Bolton gets from the residents living on the canopy streets.

Mr. Mark Mucher felt a recommendation to have the City Council review this at this time was probably more appropriate. He noted that amending or modifying an Ordinance takes several months.

Mrs. Moss made a motion to withdraw the motion at this time and review this again at their next meeting. She felt that Mr. O'Connor was correct and he could bring back more information at the next meeting. The motion to withdraw the motion died for lack of a second.

The Deputy City Clerk performed the roll call on the original motion and it failed 3-3 with Mr. Baczynski voting no, Mr. Teston yes, Mr. Mechling yes, Mrs. Orcutt no, Mr. Auwaerter yes, and Mrs. Moss no.

Mrs. Orcutt recommended that staff continue their efforts and to bring more information back to the Commission at their next meeting.

Mr. O'Connor said staff will bring back more information at the next Utilities Commission meeting.

E) Second Quarter Fiscal Year 15-16 Electric Utility Rate Sufficiency – Mr. James O'Connor

Ms. Cindy Lawson, Finance Director, explained that each quarter staff takes the original budget and original projections regarding purchase power costs and revenues for the

electric utility and compares them month by month to the actual experience of revenue collections, costs for purchase power, etc. In doing so they look to see whether the rate structure in place provides sufficient total revenue to cover costs or whether the rates needs to be adjusted. For the last few years those adjustments have only been to the bulk power costs or purchase power cost portion of the rates pending completion of a rate study. She explained that in front of the Commission today is the Second Quarter Fiscal Year 15-16 Electric Utility Rate Sufficiency report (attached to the original minutes). She noted that this is a little different than they normally would do this as this does not match the City's original adopted budget. She explained that the reason was because after the budget for 2015/2016 was adopted decisions were made regarding revisions to the Orlando Utilities Commission (OUC) contract that dramatically affected the purchase power costs anticipated, as well as the decision to close the Power Plant and removing associated staffing affected not only staffing costs and power resources operating costs, but also the amount of transfers needed to the R&R Fund. Staff recommended to the Finance Commission and to the City Council a rate decrease from \$65.15 per 1,000 kWh to \$63.15 per 1,000 kWh with billing read dates to begin on June 15, 2016. She noted that this was approved by both the Finance Commission and the City Council.

Mr. Auwaerter handed out to the Commission members the Electric Rate Comparison - Vero Beach vs. Ft. Pierce information (attached to the original minutes). He referred to the *Municipal Electric Utility Cost Rank 1200 kWh Residential Bill (1=Best, 33=Worst)*. He said there are 33 municipal electric utilities in the State of Florida and the City of Vero Beach is ranked at 30 and Ft. Pierce is at 12.

Ms. Lawson handed out to the Commission members the *Analysis of Potential Rate Reductions Pre Sale from Finance Commission Chairman – Item 10 – Lower allocation of G and A from the GF to VBE* (attached to the original minutes). She noted that this information was a pretext to Mr. Auwaerter's item on today's agenda.

Mr. Mark Mucher said at the time the OUC contract was modified Mr. Schef Wright, Attorney, promised a reduction of \$2.13 on October 1, 2016 and then the rates would go up from there. He asked will this rate reduction take the place of the \$2.13 or an addition to it.

Ms. Lawson said this \$2.00 dollar reduction is a result, in part, of the modified OUC contract. As far as further reductions, that would be part of the completion of the Rate Study.

F) Diesel Plant (Background and Update) – Mr. James O'Connor

Mr. O'Connor gave a brief update on the Old Diesel Plant. He reported that the City Council passed an Ordinance to allow a microbrewery to go into the Old Diesel Plant building. He said they are hoping to have a closing date set before July.

Mr. Mark Mucher said that he did not think the City would net the full \$500,000 dollars for the sale. He asked what will be the net amount the City will receive. He asked where that money would go because he thought the Plant was transferred out of the Electric

Utility Enterprise Fund and placed into the City's General Fund. He asked where will the money go, how much will it be, and will the Electric Fund get any advantage from it.

Mr. O'Connor said it is a part of the Electric Utility so the money would go to the Electric Utility. He said the \$500,000 dollars is the purchase price. He said that he was not sure what costs the City would incur.

Mrs. Moss said the City has already incurred costs.

Mr. O'Connor said the City has incurred costs in excess of \$600,000 dollars in the remediation of the environmental issues over time. He noted that at the time the property was appraised, it was appraised for \$650,000 dollars. He said it has been part of the Electric Utility and to his knowledge it was never transferred.

5. OLD BUSINESS

None

6. CHAIRMAN'S MATTERS

Mrs. Moss asked the Commission members if they had any items they would like on next month's Utilities Commission agenda.

Mrs. Orcutt said that she would like to have on next month's agenda, discussion of "Reuse Water."

7. MEMBER'S MATTERS

A) Add on Item – Discussion of Transfers to City of Vero Beach General Fund

Mr. Auwaerter handed out to the Commission members *Transfers to City of Vero Beach General Fund – "Profits" and General Fund Admin Chargebacks from the Electric and Water & Sewer Funds* (attached to the original minutes). He said that he has looked at various City budget books starting from 2009/2010. He looked at the profit transfer and the General Fund Administration chargeback for the Electric Funds and Water and Sewer Funds. He said that in looking at the information, the bold blue is the General Fund Administrative Chargeback that has occurred in each budget year. He said it is perfectly appropriate that there should be a chargeback to the Electric and Water and Sewer Funds for services that staff provides that are not directly working for Electric and Water and Sewer operations. The question in his mind is what is the appropriateness of this charge. He said that he did not have any set conclusions on this, but felt that the Utilities Commission needed to look at this very closely because 60% of the City's ratepayers are outside the City's incorporated limits. In the red box they will see if they look at the electric profit and the administrative chargebacks as a percentage of the General Fund budget it generally averages 35.8% over this past decade. In Water and Sewer there is another 7.6% so in total those two Funds provide 43% of the General Funds budget,

which he felt was in part one reason the property taxes in the City of Vero Beach are one of the lowest in the State of Florida. Particularly, if they look at the General Fund administrative chargeback for electric over the past couple of years it jumped up, although it did drop in the previous year. He said today Ms. Lawson provided the Commission members a one (1) page analysis, but he would like to see more detail as to what the analysis is that she does in terms of allocating costs back to the Water and Sewer Fund and the Electric Fund. He felt that it was owed to the ratepayers to be able to look at these numbers. He then handed out to the Commission his *Proposed Resolution of the City of Vero Beach Utilities Commission* (attached to the original minutes), which is the following motion:

Mr. Auwaerter made a motion that the City of Vero Beach Utilities Commission requests that the City Finance Director provide in writing in advance of the next regularly scheduled Utilities commission meeting a detailed analysis of how costs from City Departments that are in the General Fund budget that do not directly work for the City's Electric and Water and Sewer operations are charged backed to the Electric Fund and Water and Sewer Fund. Such analysis should include the methodology for allocating costs between these Funds and the General Fund. The Departments should include the following: City Council, City Clerk, City Manager, City Hall, City Attorney, Human Resources, Finance, Information Technology, Purchasing, Warehouse, Planning, Public Works Administration and Non-Departmental. Mr. Mechling seconded the motion for discussion.

Mrs. Moss asked Mr. Auwaerter if he was referring to the 6% transfer.

Mr. Auwaerter answered no. He said this information is in the budget books, which is located on the City's website.

Mrs. Moss asked does this already exist.

Ms. Lawson explained that the allocation of costs to both Electric and Water and Sewer is not a written analysis, but a spread sheet for each department. For each department there is a summary of how much gets charged to the Enterprise Funds and then for each individual department, along with some overriding factors, there are calculations that show exactly how those individual departments are allocated. She said this is something that she has provided in the past and she would be happy to provide it again. She explained that it is required in government accounting that the Enterprise Funds pay their fair share of things like Human Resources, Finance, Cashiering, etc., that they don't have as departments, but that they could not function without. She said that in each department she tries to come up with completely objective ways to allocate costs. She said that she would give the Commission members a copy of the backup for last year's allocation and at some point in the future they can discuss the individual ones.

Mr. Peter Gorry, Finance Commission Chairman, noted that the Finance Commission goes through this process every year by looking at the allocations and discussing them. He said it is true that 60% of the electric customers are outside the City limits, but it is

not true for the water customers, which is probably 80% in the City and it is not true for the solid waste customers, which is 100% in the City.

The Deputy City Clerk performed the roll call on the motion and it passed 6-0 with Mr. Baczynski voting yes, Mr. Teston yes, Mr. Mechling yes, Mrs. Orcutt yes, Mr. Auwaerter yes, and Mrs. Moss yes.

Mrs. Moss asked Mrs. Orcutt to submit materials on her reuse water item to the City Clerk's office prior to next month's meeting.

8. ADJOURNMENT

Mr. Mechling made a motion to adjourn today's meeting at 12:06 p.m. Mr. Auwaerter seconded the motion and it passed unanimously.

/sp

Florida Department of Environmental Protection Water Resource Caution Areas



Water resource caution areas are areas that have critical water supply problems or are projected to have critical water supply problems within the next 20 years. Reuse of reclaimed water from domestic wastewater treatment facilities is required within these water resource caution areas, unless such reuse is not economically, environmentally, or technically feasible.

6.3 ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (SJRWMD)

6.3.1 Water Use Overview

In 2010, total water use in the SJRWMD was approximately 1,200 MGD (Figure 6.3.1). By 2035, water use is expected to increase by approximately 26% to over 1,500 MGD. Public water supply was the largest use sector in 2010, followed by agricultural irrigation. Together these two sectors accounted for about 81% of the water consumed. By 2035, it is estimated that public supply and agricultural irrigation will remain the two largest use sectors, though agricultural irrigation is predicted to decrease by 8%. Together these two sectors will account for nearly 78% of the projected use.

Report on Expansion of Beneficial Use of Reclaimed Water, Stormwater and Excess Surface Water

Florida Department of Environmental Protection

Dec. 2015 in response to Senate Bill 536

Complete Report available here:

<https://www.dep.state.fl.us/water/reuse/docs/sb536/SB536-Report.pdf>

PURPOSE AND GOALS OF THE STUDY

By 2030, Florida's population is estimated to reach 23,609,000 – almost a 26% increase over 2010. Fresh water demand is projected to reach 7.7 billion gallons per day by 2030, an additional 1.3 billion gallons over 2010 water use for the state. The Florida Legislature, recognizing the importance of sustainable water supplies to the state's economy, environment and quality of life, passed SB 536 in the 2014 Legislative Session (Appendix A).

Senate Bill 536 (SB 536) directs the Department of Environmental Protection (DEP) to conduct a comprehensive study to determine how the use of reclaimed water, stormwater and excess surface water could be expanded to assist in meeting future demands.

Specifically, the study report is required to identify:

- factors that prohibit or complicate the expansion of the beneficial use of reclaimed water, stormwater and excess surface water and recommend how those factors can be mitigated or eliminated (Chpts 2-4);
- measures that would lead to the efficient use of reclaimed water (section 2.7);
- environmental, engineering, public health, public perception and fiscal constraints of expansion, including utility rate structures for reclaimed water (Chapters 2-4); and,
- areas in the state where traditional water supply sources are limited and the use of reclaimed water, stormwater, or excess surface water for irrigation or other purposes is necessary (Chapter 6)

Findings: Excerpt: Impediments and constraints to increasing the use of reclaimed water (section 2.6)

2.6.4 Water Quality 2.6.4.1 *Nutrients*

There are a number of nutrient-impaired surface waters across Florida that are targeted for water quality improvement through existing or anticipated Basin Management Action Plans (BMAPs) (DEP, 2014). These efforts currently require the dedication of considerable local, regional, state and federal resources. While the process focuses on reducing nutrient inputs from all sources, one of the sources that is often identified in the BMAP process is wastewater effluent. In some cases, it is a significant source of nutrients to impaired waters.

While substantial progress in meeting water quality goals was made when point source discharges of wastewater to waterbodies were eliminated, the development of reclaimed water for reuse has the potential to create new, or contribute to existing, impairments. To avoid this problem, the nutrient content of reclaimed water should be recognized and incorporated into waterbody nutrient budgets. Specifically, where reclaimed water is used for turf or crop irrigation, the incorporation of reclaimed water derived nutrients needs to be included within fertilization regimes. This approach will allow a reduction in the amount of fertilizer applied and save the reuse customer money, while reducing, or at a minimum not increasing, nutrient inputs to the landscape.

2.6.4.2 *Environmental Substances of Concern*

In 2008, the conclusions of an internal DEP workgroup were published to evaluate strategies to effectively address a wide variety of potential contaminants, commonly referred to as Emerging Substances of Concern, or ESOC (DEP, 2008). These include organic contaminants, such as flame retardants, pharmaceuticals and personal care products, endocrine-modulating chemicals, nanoparticles and biological metabolites. It is almost inevitable that small amounts of these compounds, which are manufactured to protect human health, improve consumer goods, or optimize agricultural production, are unintentionally released into the environment. Relatively recent improvements in laboratory analytical methods have enabled the identification of these substances, which likely have been present in waters for decades. It is important to note that water is not the only exposure route. Measurable amounts of these types of compounds are also found in air and food. According to a national study on the Irrigation of Parks, Playgrounds and Schoolyards with Reclaimed Water (1600 sites) there have been “no incidences of illness or disease from either microbial pathogens or chemicals.” (WaterReuse Research Foundation, 2005).

The widespread use of reclaimed water can increase the number of pathways into the environment for ESOC in wastewater. This creates a challenge for governmental agencies, for the following reasons:

- environmental monitoring and chemical-specific regulation for millions of substances is impracticable due to the sheer number of compounds and potential monitoring costs; and,
- uncertainty associated with the environmental fate, transport and toxicological effects of ESOC.

2.6.4.3 *Salinity*

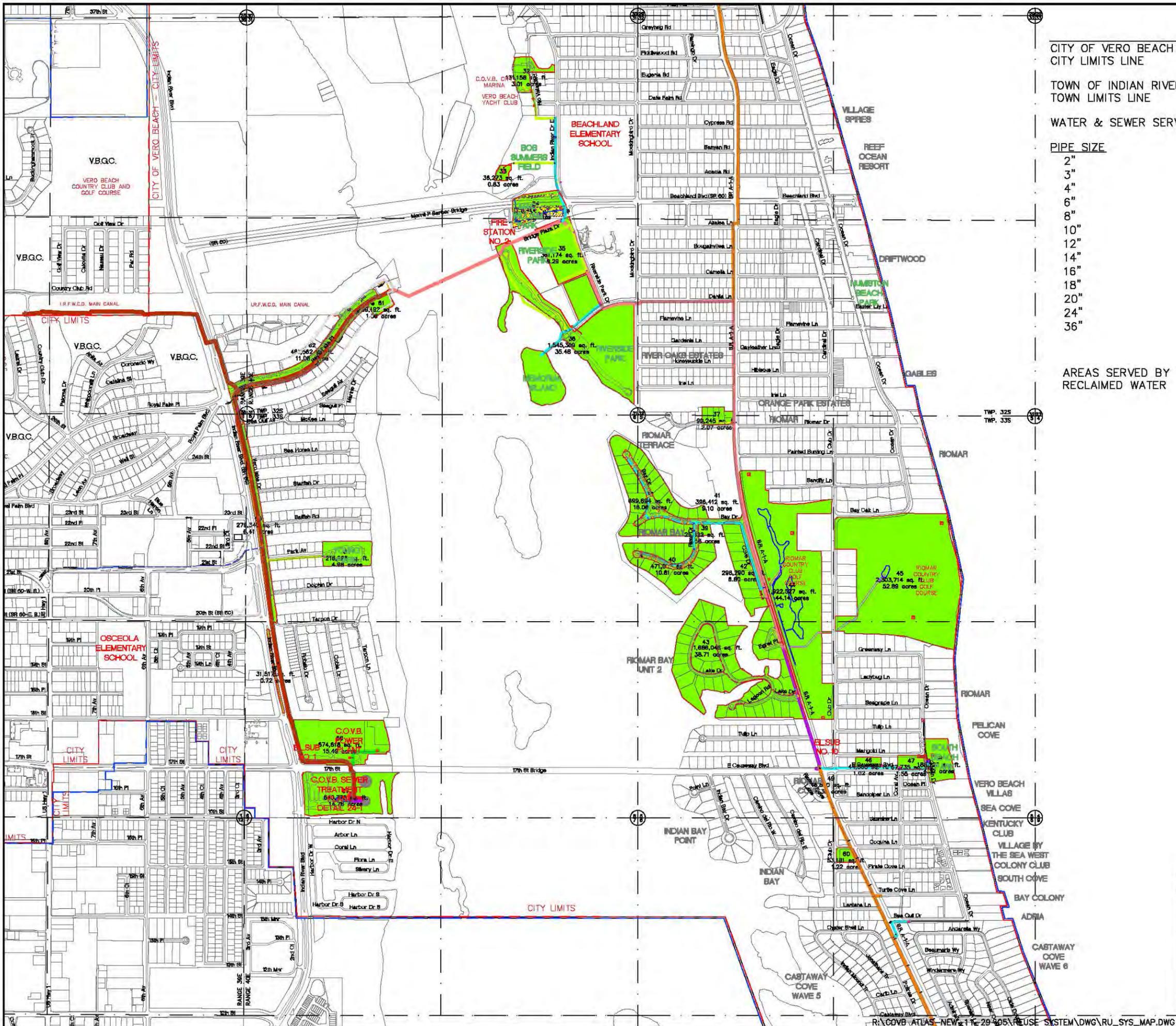
In some cases, reclaimed water can contain elevated salinity levels, most often in coastal areas where saline water seeps into the wastewater collection system. Elevated salinity in reclaimed water can affect its feasibility for certain types of reuse, particularly irrigation. In fact, the salinity of reclaimed water may be the single most important parameter in determining its suitability for irrigation (EPA, 2012). The salinity of particular reclaimed water can vary greatly from source to source. These salts in reclaimed water come from (Martinez & Clark, 2009):

- ions naturally found in the water (from the original source);
- ions remaining in dissolved form after separation of solids during treatment of the water;
- any salts added during the treatment process or home water softening; and, ○ infiltration of saltwater into sanitary sewer lines prior to treatment (a possibility in coastal areas with high groundwater tables and older sewers in need of repair).

The amount of dissolved salts and plant salt sensitivity need to be considered when determining if irrigation is a viable use for a given reclaimed water system. In coastal areas, greater efforts to reduce infiltration of saltier groundwater into wastewater collection pipelines may be necessary to reduce the reclaimed water’s salinity and thus be better suited for irrigation purposes.

2.7: Recommendations – Excerpt 2.7.2.5 *Nutrients in Reclaimed Water*

Increased levels of nutrients in surface waters have raised issues and concerns about the potential contribution of nutrient loads from irrigation or aquifer recharge with reclaimed water. Reducing the nutrients in reclaimed water where feasible, providing adequate education to reclaimed water users so that fertilizer use can be reduced when irrigating with reclaimed water and providing best management practices to ensure that reclaimed water runoff does not reach surface waters, will all contribute to addressing these water quality concerns and promote the expansion of the reuse of reclaimed water.



LEGEND

- CITY OF VERO BEACH
CITY LIMITS LINE
- TOWN OF INDIAN RIVER SHORES
TOWN LIMITS LINE
- WATER & SEWER SERVICE AREA
- PIPE SIZE
 - 2"
 - 3"
 - 4"
 - 6"
 - 8"
 - 10"
 - 12"
 - 14"
 - 16"
 - 18"
 - 20"
 - 24"
 - 36"
- AREAS SERVED BY RECLAIMED WATER

SCALE: 1" = 600'

PLOT DATE : 10/10/2013

REV. NO.	DESCRIPTION	AUTHZD.BY	DRWN.BY	DATE
REUSE SYSTEM MAP				
		SCALE	DRAWN BY	DATE
		N.T.S.	T.A.Y.	6/26/01
		CHECKED BY	DATE	
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				

CITY PROJECT NO. REUSE SYSTEM SHEET 4 OF 5

RU_SYS_MAP.DWG

SCALE: 1" = 800'



LEGEND

CITY OF VERO BEACH
CITY LIMITS LINE

TOWN OF INDIAN RIVER SHORES
TOWN LIMITS LINE

WATER & SEWER SERVICE AREA

PIPE SIZE

2"
3"
4"
6"
8"
10"
12"
14"
16"
18"
20"
24"
36"

AREAS SERVED BY
RECLAIMED WATER

PLOT DATE : 10/10/2013

A	ADDED JAYCEE PARK	T.A.Y.	10/14/03
REV. NO.	DESCRIPTION	AUTHRZD.BY	DRWN.BY DATE
REUSE SYSTEM MAP			
SCALE		DRAWN BY	DATE
N.T.S.		T.A.Y.	6/26/01
CHECKED BY		DATE	
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT			
CITY PROJECT NO. REUSE SYSTEM SHEET 3 OF 5			
RU_SYS_MAP.DWG			

SCALE: 1" = 600'



LEGEND

- CITY OF VERO BEACH
CITY LIMITS LINE ---
- TOWN OF INDIAN RIVER SHORES
TOWN LIMITS LINE ---
- WATER & SEWER SERVICE AREA ---
- PIPE SIZE
 - 2" ---
 - 3" ---
 - 4" ---
 - 6" ---
 - 8" ---
 - 10" ---
 - 12" ---
 - 14" ---
 - 16" ---
 - 20" ---
 - 24" ---
 - 36" ---
- AREAS SERVED BY RECLAIMED WATER

PLOT DATE : 10/10/2013

REV. NO.	DESCRIPTION	AUTHRZD.BY	DRWN.BY	DATE
REUSE SYSTEM MAP				
	SCALE	DRAWN BY	DATE	
	N.T.S.	T.A.Y.	6/26/01	
		CHECKED BY	DATE	
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO.				SHEET 2 OF 5
				RU_SYS_MAP.DWG

CITY OF VERO BEACH
WATER AND SEWER
SERVICE AREA



SHEET 2

TOWN OF INDIAN
RIVER SHORES
TOWN LIMITS

SHEET 3

SHEET 4

CITY OF VERO BEACH
WATER AND SEWER
SERVICE AREA

CITY OF VERO BEACH
CITY LIMITS

CITY OF VERO BEACH
WASTE WATER TREATMENT PLANT

SHEET 5

PLOT DATE : 10/10/2013

REV. NO.	DESCRIPTION	AUTHRZD.BY	DRWN.BY	DATE
REUSE SYSTEM MAP				
SHEET LAYOUT		SCALE N.T.S.	DRAWN BY T.A.Y.	DATE 6/26/01
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				

REUSE WATER of COVB

Nutrient Content of VB Utilities Reuse Water

Nitrogen=13.74mg/l

Phosphorus=1.22mg/l

COVB Reuse Water is stored in unlined ponds:

Lake Ream – John's Island

2nd Lake – John's Island

2 Lakes Riomar Golf Course

1 Lake at Moorings Golf

Monitoring Wells located at Riomar have recorded N at 13.7 mg/l

For Comparison: Advanced Wastewater Treatment

Nitrogen = 3mg/l

Phosphorus=1mg/l

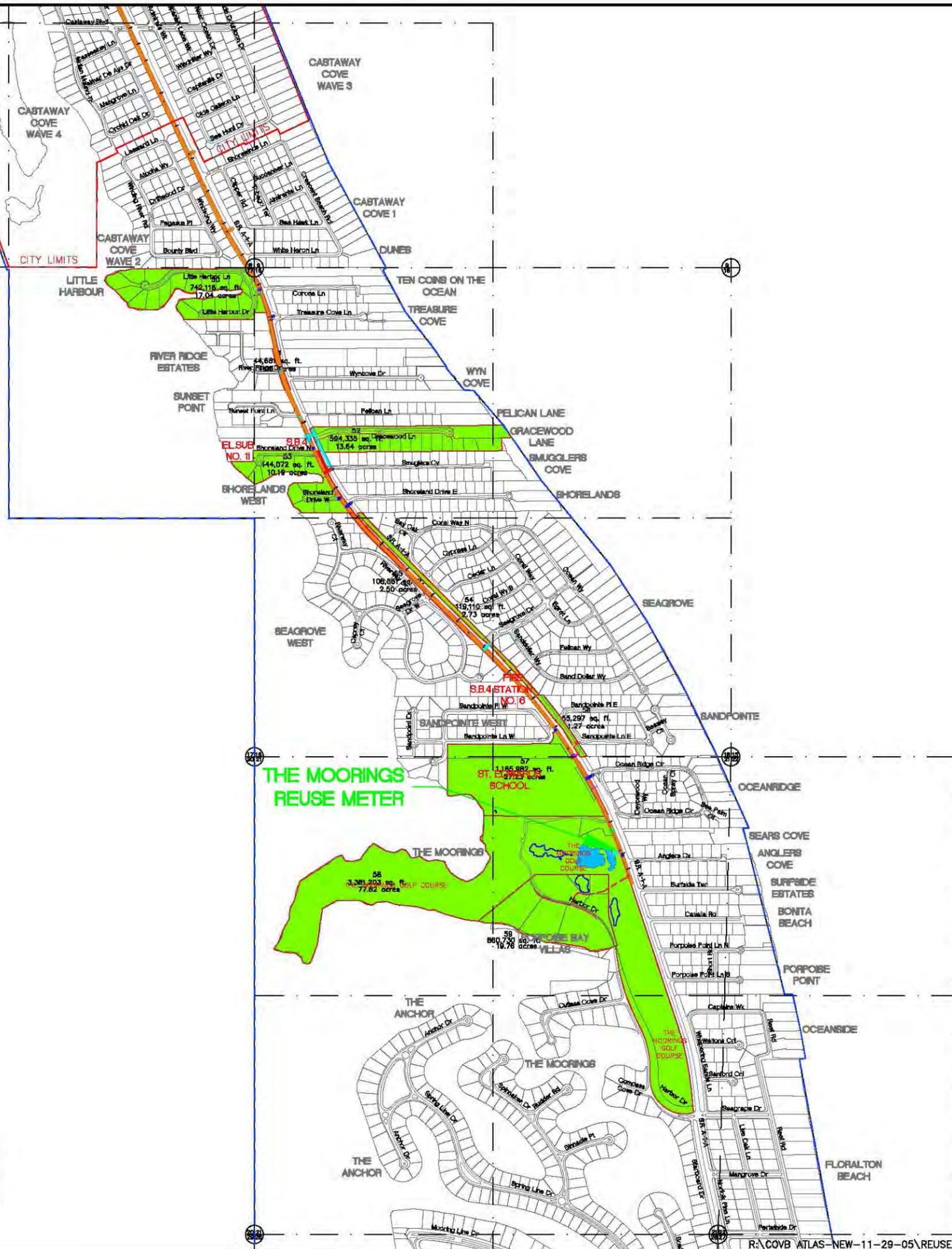
Nutrients Received under 3 watering routines on landscape

Rate	*Nitrogen	*Phosphorus
.75 inches/week	2.8 pounds/year	0.248 pounds/year
1 inch/week	3.7 pounds/year	0.33 pounds/year
1.5 inches/week	5.55 pounds/year	0.495 pounds/year

*Per 1000 square feet of landscape

In April 2014, the IRC Extension Office (IFAS) issued fertilizer recommendations based on the Minimum Maintenance Level for St. Augustine Grass due to the nutrient pollution caused by fertilizer and other sources.

Rate	Nitrogen	Phosphorus
April application	1 pound/1000 sq ft.	0 phosphorus unless soil test verifies need



LEGEND

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CITY LIMITS LINE
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TOWN LIMITS LINE
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 - 12"
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 - 16"
 - 18"
 - 20"
 - 24"
 - 36"
- AREAS SERVED BY RECLAIMED WATER

PLOT DATE : 10/10/2013

REV. NO.	DESCRIPTION	AUTHRZD.BY	DRWN.BY	DATE
REUSE SYSTEM MAP				
	SCALE	DRAWN BY	DATE	
	N.T.S.	T.A.Y.	6/26/01	
	CHECKED BY	DATE		
CITY OF VERO BEACH WATER AND SEWER DEPARTMENT				
CITY PROJECT NO. REUSE SYSTEM				SHEET 5 OF 5



Florida Municipal Power Agency

Frederick M. Bryant
General Counsel

July 1, 2016

BY EMAIL (*bill.conrad2@gmail.com*)

The Honorable William H. Conrad
Mayor of the City of Newberry, Florida
Chairman, FMPA Board of Directors
345 SW 255th Street
Newberry, Florida 32669

Dear Mayor Conrad:

SUBJECT: 2016 ANNUAL REPORT

In accord with previous practice and the current General Manager/General Counsel Evaluation procedures, the following is the list of “my accomplishments” for the past 12 months.

As expressed each year, “my accomplishments” are certainly not mine alone, but are those of the Office of the General Counsel and the entire FMPA team. Nevertheless, the following list details the more significant items to which the Office of the General Counsel has devoted substantial time in the past year:

A. Finance Matters

1. **Bond Issues.** Over the course of the last year one financing was completed. Our office, along with the members of FMPA’s Finance Team, were deeply involved in the details of this bond issue, described below:

All-Requirements Series 2016A - On April 5, 2016, the Agency closed on the issuance of its \$424,120,000 All-Requirements Power Supply Project Refunding Revenue Bonds, Series 2016A. These bonds were originally planned for issuance as the Series 2015C bonds to capture debt service savings to offset additional costs associated with the issuance of the 2015B bonds, which were used to finance the costs of terminating the last of the Taylor Energy Center-

related interest rate swaps. Market conditions in 2015, however, were not favorable to achieving desired savings. So, the bond issue was delayed until conditions became more favorable in 2016. Overall, this refunding issue achieved a gross savings of \$63.7 million in debt service costs.

2. **Line of Credit RFP Process and J.P. Morgan Line of Credit.** In November, 2015, FMMPA issued its request for proposals (RFP) for one or more line(s) of credit and letter(s) of credit. FMMPA received responses to the RFP from three banks: J.P. Morgan, Bank of America Merrill Lynch, and Wells Fargo. After reviewing the responses, we worked with the Finance Team and staff to begin preliminary negotiation of a credit agreement with J.P. Morgan. Our idea was to negotiate a form of agreement with J.P. Morgan, which would then be offered to the other responsive banks, as each would likely insist on terms of borrowing that would be no more favorable to FMMPA than any other similarly situated credit provider. (This is commonly referred to as a most-favored nation status.) This was the process that we followed, and in May 2016 the Executive Committee approved entering into an agreement with J.P. Morgan for up to a \$100 million line of credit, with up to \$25 million of that available amount being possibly allocable to letters of credit.

We also continue to work with the Finance Team and staff to find additional line of credit providers (on the same terms as J.P. Morgan) to diversify FMMPA's credit supply opportunities. As of this writing, we are continuing discussions with Wells Fargo. The J.P. Morgan line becomes effective on July 1, 2016.

3. **Termination of Letters of Credit.** For many years, FMMPA has had two outstanding letters of credit. One was issued pursuant to the Agency's agreement with Florida Power & Light Company (FPL), associated with the construction of the transmission interconnection for the Treasure Coast Energy Center. The purpose of that letter of credit was to provide protection for FPL in the event any of FMMPA's contributions in aid of construction for the transmission interconnection were later determined to be taxable income to FPL. Through discussions with FPL in 2015 and early 2016, we reached agreement that the letter of credit was no longer necessary. That letter of credit (in the amount of \$449,000) was cancelled in April 2016.

The second outstanding letter of credit (in yearly varying amounts, but presently in excess of \$17 million) provides credit support to Florida Gas Utility (FGU) pursuant to the gas services agreement between FMPA and FGU. This letter of credit has an annual cost of \$200,000. However, it has never been drawn upon because FMPA always pays its FGU bills. We assisted staff in working with FGU to negotiate a different pledge of credit and avoid the need for the letter of credit. We were successful in these efforts and FMPA was able to cancel the letter of credit.

4. **Continuing Disclosure Policy and Procedures.** In furtherance of direction given to staff in November 2014, when the Board of Directors and Executive Committee approved the filing of a self-report questionnaire with the U.S. Securities and Exchange Commission (SEC) to take advantage of the SEC's Municipalities Continuing Disclosure Cooperation Initiative (the MCDC Initiative), we worked with bond counsel, the Finance Team, and staff to draft a municipal financial disclosure policy and implementing procedures.

The MCDC Initiative encouraged issuers and underwriters of municipal securities (*i.e.*, bonds) to self-report possible material misstatements or omissions made in official statements relating to outstanding bond issues with respect to the issuer's prior compliance with its continuing disclosure obligations, as specified in Rule 15c2-12 under the Securities Exchange Act of 1934 (Rule 15c2-12). FMPA filed its self-report in November 2014 to take advantage of the MCDC Initiative to clean up all possible material disclosure omissions in a manner that poses the least regulatory risk to FMPA.

A workshop on this policy and procedures was held in September 2015, and they were adopted by the Board and Executive Committee in November 2015. FMPA's 2016A series bonds for the All-Requirements Project and the 2016 annual financial disclosure (due by June 30, 2016) are the first significant efforts undertaken under the new procedures.

5. **Trustee, Bond Registrar, and Paying Agent Services RFP.** Following up on the Auditor General's finding no. 10 from the 2015 operational audit of FMPA, the Agency committed to go through a competitive selection process for each of its bond professionals. The first of these was to select a trustee, bond registrar, and paying agent. Since 2008, T.D. Bank has served as FMPA's trustee.

In October, 2015, FMMPA issued an RFP for trustee, bond registrar, and paying agent services. FMMPA received responsive proposals from six banks. Staff and the Finance Team ranked the top three proposals, with the proposal from T.D. Bank, to continue as FMMPA's trustee, being ranked as number one. An information item was presented to the Board and Executive Committee in December 2015, and in January 2016 both the Board and Executive Committee approved continuing to have T.D. Bank serve as FMMPA's trustee, bond registrar, and paying agent.

Presently, we are assisting staff with additional RFPs (for issue within the coming months) for an investment advisor and swap advisor.

6. **Project Debt Reporting.** We aided staff in preparing an additional debt report, to be presented to the Board annually, to show the debt of each Project, other than the All-Requirements Project, on the basis of each participant's power entitlement share. This information was requested during the Joint Legislative Audit Committee hearing in October, 2015. The final report was presented in April 2016.

Currently, we are assisting staff with the preparation of a similar report for the All-Requirements Project.

7. **Finance Team Conference Calls.** We continue to be involved as an active participant in the weekly Finance Team call with our finance staff, bond counsel, and financial advisors in order to address the financial markets and proactively address and monitor our financial needs.

8. **Ratings.** Our office has participated in the preparation for and several discussions with both Moody's Investor Services, Inc. and Fitch Ratings, Inc., which resulted in the favorable rating reviews and affirmation of FMMPA's high ratings earlier this year, including the upgrade of the Tri-City Project rating to A1 by Moody's in April 2016.

B. Power Resources

9. **Section 29 Withdrawal Cost Methodology.** As a follow-up to the efforts of Baker Tilly (reported in no. 23), and as FMPPA committed to do in the Legislative committee hearings (reported in no. 24), we have been working extensively with staff and bond counsel to develop a withdrawal cost methodology guidance document (*i.e.*, a protocol) to provide each All-Requirements Project participant with detailed information on how FMPPA would calculate a participant's withdrawal costs, if notice of withdrawal is given pursuant to section 29 of the All-Requirements Power Supply Project Contract.

To date, only one participant has given FMPPA its section 29 withdrawal notice, the City of Vero Beach. Pursuant to the terms of Vero Beach's notice, its withdrawal date is October 1, 2016. On that date, unless extended by Vero Beach, pursuant to section 29, Vero Beach must have met certain conditions, including paying to FMPPA, in cash, the withdrawal cost calculated by FMPPA. Recognizing that the words of section 29 provide parameters for the withdrawal cost calculation, but are not formulaic, our staff has worked diligently to prepare details for the withdrawal cost methodology. The plan is to bring the final guidance document, subject to subsequent amendment, to the Executive Committee for approval in August.

10. **Transmission Rate Cases.** We have intervened in several Duke Energy Florida, LLC (Duke) and FPL transmission rate cases at the U.S. Federal Energy Regulatory Commission (FERC), as described below:

- **FPL Market Based Rate Filing.** On December 23, 2015, FPL made a filing with FERC requesting market based rates in certain balancing authority areas (BAAs) in Florida. FPL argued that it passed the market power analysis in these certain BAAs, and therefore should be allowed market based rates. The FMPPA BAA was not included in those BAAs for which FPL sought market based rate authority. FMPPA, together with Seminole Electric Cooperative, Inc. (Seminole), intervened and, on January 29, 2016, filed in protest of FPL's request. OUC, JEA, Reedy Creek, and Homestead individually intervened and protested as well. We argued that FPL's BAA-by-BAA request for market based rates were improper given Florida unique geographic nature as a peninsula and its limited import capability. And we argued that FERC should

view the Florida market as a whole when determining whether FPL exerts market power. On May 20, 2016, FERC granted FPL market based rates within the specified BAAs. FMPA, with Seminole leading the effort, has filed a request for rehearing to be filed with FERC.

- **Duke Return on Equity (ROE) Rate Case.** FMPA and Seminole filed a FERC complaint against Duke's ROE of 10.8 percent. In our joint filing on February 29, 2012, FMPA and Seminole argued that Duke's return on equity was excessive and that an ROE of 9.02 percent would be appropriate. After extensive negotiations with Duke and multiple preliminary hearings before a FERC administrative law judge, FMPA, Seminole and Duke entered into a final settlement agreement on July 21, 2015. We estimate the settlement saved FMPA approximately \$372,500 in 2015, and will save an additional \$402,500 in 2016, and \$432,200 in 2017.
- **Duke 2015 Annual Update Rate Case.** On May 15, 2015, Duke filed its 2015 annual transmission rate update. FMPA successfully challenged, with FERC, the inclusion of a number of costs that were improperly included in accounts included within the transmission rate. For instance, it was discovered that expenses related to a \$2 million project had been incorrectly included in the construction work in progress account. Duke also removed expenses for servicing receivable securities in the amount of \$23 million. FMPA and Seminole entered into a final settlement agreement with Duke in September 2015 resolving all issues. The settlement agreements lowers the true-up rate by \$.039/ kW-month. FMPA anticipates a refund in the form of a credit on its next transmission bill from Duke. On May 16, 2016, Duke filed its 2016 annual update. We are in the process of reviewing that update, and we also plan to challenge it at FERC if we discover any deficiencies.
- **Duke CWIP Rate Case.** In December 2014, Duke filed with FERC seeking authority to recover 50 percent of its construction work in progress (CWIP) costs associated with 23 new transmission projects through its formula transmission rate. In January, 2015, FMPA intervened in the proceeding to ensure that the 23 projects are appropriate for CWIP treatment. Hearings were held before a FERC administrative law judge in March and July 2015. Subsequent to those hearings, Duke, FMPA, Seminole, Reedy Creek and

FERC Trial Staff engaged in settlement discussions. A settlement agreement was finalized in December 2015, which requires Duke to provide more details for each transmission related CWIP project to customers. The settlement was approved March 17, 2016. We will continue to evaluate the additional details provided by Duke.

11. **Cane Island Unit 2 Repair and CSA Termination.** In October 2015, Cane Island Unit 2, which was covered by a Continuing Services Agreement (the CSA) with GE, had a failure of a compressor blade that caused damage in the compressor and turbine section of the gas turbine and necessitated the replacement of the entire compressor section of the unit with newer, more advanced parts. We negotiated with GE for a fair trade-in value for the old parts, both for the damaged parts from the machine and spares in inventory, which was deducted from the purchase price of the new advanced parts, for a net payment to GE of \$4.15 million. A portion of this cost was also offset by insurance. However, in order for FMPPA to enjoy the benefits of reduced planned maintenance costs due to the advanced parts, it was also necessary to terminate the CSA so that the ARP would no longer be obligated to pre-pay for planned maintenance based on the old part inspection intervals.

Our office worked closely with staff to both terminate the CSA and execute a new Multi-year Maintenance Program Agreement (MMP) with GE for Cane Island Unit 2. FMPPA received GE's initial term sheet on March 7, 2016, and with extensive effort from staff, we were able to execute the negotiated agreement by a deadline of March 31. It has been estimated that the MMP will result in \$10 million of net present value savings over the next 10 years.

12. **Termination of Public Gas Partners, Inc. (PGP) Oil Hedges.** Through the Agency's investment in Pool No. 1 and Pool No. 2 (Pools 1 and 2) of PGP, FMPPA was a party to certain hedges that PGP puts in place to provide greater certainty for the price of oil that is sold from the well-field interests of Pools 1 and 2. (Liquid petroleum is a normal byproduct of drilling for natural gas. PGP sells the oil that is recovered from its well-field interests, and the hedges have been put in place to give a more constant income stream from the sale of oil byproduct, instead of PGP being subject to fluctuating market prices.) Last year, staff learned that the PGP oil hedges were substantially in the money (*i.e.*, the market price was lower than the hedged price, so unwinding the hedges would yield a positive payment to FMPPA).

FMPA worked with PGP to terminate FMPA's portion of the hedges. We assisted staff in this effort, which yielded approximately \$5.4 million of income from the termination of FMPA's portion of the oil hedges. In November 2015, the Executive Committee directed staff on how to make use of this additional revenue, of which approximately \$3.4 million was used to retire outstanding All-Requirements Project debt.

13. **FKEC Loss Billing.** The long term joint-investment transmission agreement between the Keys Energy Services (Keys) and the Florida Keys Electric Cooperative Association, Inc. (FKEC) provides a methodology for FKEC billing Keys for transmission system losses (for the jointly owned line that extends from the Florida mainland to the Keys system) on a demand and energy basis. FMPA pays Keys' bills under that agreement, as an All-Requirements Project Participant, to get power to Keys' city gate. In 2013 staff alerted us that FKEC had entered into a new power supply arrangement with FPL, and staff believed that the demand charges for losses were being overcharged to Keys (which is paid by FMPA). We have assisted staff and Keys management in reviewing this matter, suggesting contract changes, and in extensive communication with FKEC on the losses billing error. There have been a number of face-to-face meetings among Keys, FKEC, and FMPA staff. However, FKEC has communicated that it disagrees that a billing correction need to be made. To stem the overbillings in the future, FMPA has decided to self-supply losses (which is discussed in no. 14). Resolving any past overcharges, though, is still a matter that is being discussed between Keys and FMPA. We are continuing to assist staff in pursuing a resolution of this in coordination with Keys' management.

14. **Self-Supply of Keys Transmission Losses.** Our office has been engaged in extended discussions with the FKEC and FPL in an effort to self-supply transmission system losses for the jointly owned transmission line between FPL's Florida City substation and the northern gateway to the Keys Energy Services system at the Seven Mile Bridge. The ARP had been purchasing power to cover the losses from FKEC since 1998 at FPL's rates for capacity and energy under a prior partial requirements (PR) agreement between FPL and FKEC and, since May 2011, under the current full requirements power supply contract between FPL and FKEC. FMPA staff recognized that the ARP could save significant amounts by self-supplying these losses. We successfully convinced both FKEC and FPL that FMPA has a right to self-supply losses (at a lower dollar-per-MWh cost than is available from FPL), which we

began as of April 1. By self-supplying these losses from its own generating capacity, the ARP will avoid paying FKEC for the capacity component of the losses, which in FY2014 and FY2015 amounted to more than \$3 million and these annual savings will continue in future years.

15. **FKEC Emergency Power Sales Agreement.** FMPA was asked by FKEC to enter into an emergency power sales agreement, for FMPA to sell FKEC as-available, non-firm, emergency backup power from its Stock Island resources when FKEC cannot receive power from FPL due to the loss of a transmission tie. We have discussed this with FKEC over an extended period of time, and are working towards finalizing an agreement that we intend to bring before the Executive Committee for consideration during the third calendar quarter of 2016.

16. **Consolidation of TECO Peoples Gas System Gas Transportation and Capacity Release Agreements.** In the fall of 2015, staff discovered that TECO Peoples Gas System (PGS) had overbilled FMPA by approximately \$1.1 million over a five year period. PGS provides certain gas transportation services to FMPA for Treasure Coast Energy Center, Cane Island Power Park, and the Plant Oleander combustion turbine. In discussions with PGS, FMPA agreed to accept a payment of \$250,000 in cash and the remainder of the \$1.1 million value in contract modifications. Today, we and staff are working to consolidate the different gas transportation and capacity release agreements into two master agreements. These consolidated contracts will be presented to the Executive Committee in the coming months. In the consolidation of these contracts, FMPA and PGS have agreed to a rate reduction to recover the remainder of the overbilling owed to FMPA, and we are working to modify terms that will provide FMPA with greater operational efficiencies and less risk of gas pipeline related operation interruptions in the future.

17. **Stock Island Incremental Generation Costs for Transmission Limitations.** At the end of last summer, Keys experienced a transformer failure at its US 1 substation, which required the transformer to be taken out of service for several weeks to avoid significant damage to the transformer and surrounding substation equipment. FMPA staff agreed that it was prudent to take the transformer out of service. However, while this transformer was out of service, the Stock Island Generating Facility had to operate to serve load south of the US 1 substation, due to a lack of transmission capacity, caused by the transformer outage. In total, incremental

The Honorable William H. Conrad
July 1, 2016
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generation costs for operating Stock Island out of economic merit during this time was nearly \$500,000 (over-and-above the costs of serving Keys Energy Services demand from the mainland).

FMPA and Keys have had a number of discussions on the issue of who should pay the incremental costs. It was agreed that Keys Energy Services would pay half of the costs, with the remainder being held for billing by FMPA until incremental cost responsibility could be agreed upon.

After several discussions, it became apparent that the operating contract for Stock Island does not assign incremental cost responsibility for the particular fact situation we had. (If transmission service north of the city gate had been lost, all of the incremental cost would have been FMPA's responsibility, but if transmission service south of the city gate was lost due to Keys failure or because of a planned outage, then Keys would pay all incremental costs. Instead, this situation was a partial loss of transmission service south of the city gate, due to an unplanned outage where Keys' response was considered by FMPA to be appropriate.)

We are working toward a resolution that is cost effective and fair to both Keys and FMPA, and we are assisting in drafting modifications to the Stock Island operating contract that will provide for a 50/50 equal sharing of the sorts of incremental costs associated with last summer's transformer outage, clarify incremental cost responsibility in other scenarios, and provide FMPA staff an opportunity for greater input in the Keys' system planning activity to permit FMPA to mitigate future incremental cost responsibility.

Staff's recommendation on this contract amendment will be brought to the Executive Committee in the next month or two.

18. **US Sugar Amendment.** We negotiated an amendment to the Revised and Restated Interconnection Agreement among United States Sugar Corporation (USSC), the City of Clewiston, and FMPA, dated May 1, 1998. The amendment was approved at the December 2015 Executive Committee meeting and took effect February 1, 2016. The Interconnection Agreement governs the interconnection of USSC's cogeneration facility to Clewiston's transmission system. Due to changes in power factor requirements imposed on FMPA by FPL, it became necessary to amend

the Interconnection Agreement. The amendment, among other things, revises the power factor requirements to align with FMPA's current obligations to FPL, and reduces FMPA's regulatory risks for violations caused by USSC's acts or omissions.

19. **NERC and FRCC Reliability Standards, Compliance and Member Assistance.** We continue to assist our members with the compliance, reporting and inspections required for meeting Florida Reliability Coordinating Council, Inc. (FRCC) and North American Electric Reliability Corporation (NERC) reliability standards. (FRCC is the designated Electric Reliability Organization (ERO) charged with enforcing NERC reliability standards within peninsular Florida.) FMPA legal staff works closely with FMPA compliance staff on NERC compliance issues, which generally includes:

- Assisting in annual review of the FMPA internal compliance program.
- Drafting agreements relating to FMPA, FMPA members, FMPP, and FRCC coordinated functional registration and their respective compliance responsibilities for NERC reliability standards.
- Providing drafting and research assistance for FMPA comments on NERC proposed reliability standards and NERC/FRCC compliance efforts.
- Participation in bi-weekly compliance conference calls between FMPA and its members.
- Assistance with FMPA members' FRCC compliance audits and participation in FRCC settlement discussions.
- We are also assisting staff in preparation for compliance with new CIP v5 standards.

20. **Regulatory Tracking.** We actively monitor and participate in, regulatory processes at the state and federal levels. Through FMPA's participation in the Transmission Access Policy Study group (TAPS), we along with staff, monitor much of the regulatory activities at NERC and FERC. Dan is a member of the TAPS

Regulatory Committee, which provides guidance to the TAPS membership on regulatory issues that the Regulatory Committee believes are significant and worth pursuing. We have been monitoring and participating in the Environmental Protection Agency's fine particulate matter and ozone emissions rulemaking (i.e. the Cross State Air Pollution Rule, or CSAPR). We have also been monitoring and participating in, through Florida Power Coordination Group, Inc. (FCG), the Florida Municipal Electric Association (FMEA) Major Generators group, American Public Power Association (APPA), and the Class of '85 group, the U.S. Environmental Protection Agency's (EPA) implementation of the Clean Power Plan's greenhouse gas regulations.

21. **FERC Order 1000.** On July 21, 2011, FERC issued Order 1000 regarding regional transmission planning and cost allocation (Order 1000-A was subsequently issued on May 17, 2012). We participated in the Order 1000 rulemaking process through TAPS and APPA. Order 1000 requires incumbent transmission providers to adopt a regional transmission planning and cost allocation process. We also significantly engaged in the Florida regional development process. We have engaged the incumbent transmission providers in numerous stakeholders' meetings, and met with FRCC staff, FERC staff and FERC Commissioners to promote our interest in the Order 1000 implementation process. After numerous filings, protests, FERC orders and re-filings between 2012 and 2015 – during which FERC agreed with FMPPA on substantially all of our major arguments – FERC accepted the incumbent transmission providers' final compliance filing on August 24, 2015. Since then, we have assisted FMPPA staff with various Order 1000 implementation issues at FRCC.

22. **National Cyber Mutual Assistance Program.** Our office has been involved in the development of an industry wide Cyber Mutual Assistance Program, which, if implemented, would provide for sharing of cyber expertise and resources to affected participating utilities in the event of a cyber-attack. We are representing the interests of public power utilities in this effort. The Program is expected to be implemented in 2017.

C. Agency Matters

23. **Auditor General Operational Audit.** From July through December 2014, the Office of the Florida Auditor General performed an operational audit of FMPA. The audit work began on July 28, 2014, preliminary and tentative audit findings were released on January 21, 2015, and the final audit report was released on March 26, 2015.

The Auditor General made 15 audit findings. Our office worked extensively with staff to facilitate and coordinate FMPA's efforts on the audit, and to respond to the audit findings.

Since the completion of the audit, our office has been engaged with the staff on many follow-up items, several of which were completed in the past year.

In response to the Auditor General's findings, the Executive Committee directed staff to competitively select an independent consulting firm to review two of the findings and make recommendations to the Executive Committee on how to address them. We worked closely with staff in drafting a request for qualifications, evaluating proposals, and entering into an agreement with Baker Tilly Virchow Krause, LLP (Baker Tilly) to serve as the Executive Committee's nationally recognized, independent consultant. Baker Tilly's final recommendations and report were delivered to the Executive Committee in December 2015.

The remaining 13 audit findings have been addressed by the Executive Committee and the Board of Directors. In the past year, this included adopting revisions to the FMPA travel and purchasing policies, which our office was substantially involved in, and presentation of a report on the cost impact of Other Post-Employment Benefits (OPEB) to the Executive Committee and Board of Directors on January 21, 2016.

Additionally, in response to an Auditor General recommendation, our office has updated both the FMPA Standard Services Agreement, as well as our Standard Purchase Order Terms and Conditions, to include the following requirements related to reimbursable travel expenses: (1) each request for reimbursement must be supported

by original receipt, (2) business mileage will be paid at no more than the IRS-approved rate, and (3) all reimbursement requests will be subject to audit by FMPA.

24. **Anti-FMPA Legislation.** During the 2016 Legislative Session, Representative Debbie Mayfield introduced anti-FMPA legislation, HB 579, that used the Auditor General's audit findings as a basis for legislative action. Senator Wilton Simpson filed a companion bill, SB 840. If passed as filed, these bills would have had several significant and adverse consequences on FMPA: (1) requiring annual financial reporting to the Florida Public Service Commission (the PSC), including balance sheet, income statement, statement of cash flows, and an annual fair market valuation for each FMPA generation asset; (2) each member of FMPA's governing bodies must be an elected official from the represented member utility; (3) the Office of the Public Counsel (the state's utility consumer advocate) would have a statutory role in each FMPA process that has a rate impact and would have the ability to appeal FMPA decisions, that have a rate impact.; and (4) the PSC would have full jurisdiction over FMPA, except for rates and services. HB 579 was subsequently amended to limit its scope to (1) and (2) above.

House committee hearings were held on HB 579 twice (on January 11 and 28, 2016) and SB 840 was heard once by the Communications, Energy, and Public Utilities Committee on February 23, 2016. Our office was extensively involved in the preparation for these committee hearings and efforts ahead of, and after, these meetings with legislators and others, as well as related communications efforts among member cities and outside of the Agency.

The Joint Legislative Audit Committee also held a hearing on the FMPA operation audit on October 5, 2015. We were significantly involved in the preparation for that hearing, which featured testimony from Bill Conrad, Nick Guarriello, and a number of FMPA member representatives.

At the end of the Legislative Session, both HB 579 and SB 840 died. However, through discussions with Senator Simpson, we believe he will again file legislation against the Agency in 2017, unless a resolution to matters with Indian River County can be accommodated, either through agreed legislative action or otherwise, between now and the start of the 2017 Legislative Session. To that end, FMPA has committed

to communicate with Indian River County (who was the leading advocate this year for HB 579 and SB 840) and our office is significantly involved in those efforts.

25. **Joint Action Solar Project.** Our office has provided support throughout the initial consideration of a joint action solar project—for a utility scale solar farm. Our assistance has included presentations to member city governing bodies, preparation of agenda materials for the Board of Directors and Executive Committee, and consideration of structural issues to permit both ARP and non-ARP participants to participate in this new opportunity, without being contrary to those participants' other FMPA project commitments.

26. **In-House Training.** Our office has provided in-house training for staff in the following areas: Florida public records law, Florida ethics and gift law, FMPA's new purchasing and travel policies, and NERC/FERC compliance. We also coordinated and provided for governing body and staff training for FMPA's continuing disclosure requirements for publicly issued debt, pursuant to the U.S. Securities and Exchange Commission's Rule 15c2-12 and FMPA's continuing disclosure agreements with bond underwriters.

27. **Roof Replacement Project.** Our office has worked with FMPA staff to develop the specifications on, seek bids for, and ultimately begin work on the roof replacement for the Commodity Circle building. We reviewed documents and advised staff to make sure that the project met all applicable building and insurance requirements, and was conducted in accordance with our procurement policy.

28. **Employment Matters.** Our office is the first-in-line employment counsel for the Agency. Over the past year we have worked on amendments to the General Manager's executive employment contract and assisted with other employment matters, as needed.

D. FMEA and Member Services

29. **Florida Municipal Electric Association, Inc. (FMEA).** We regularly meet and coordinate closely with Barry Moline on FMEA matters and our office advises FMEA staff on particular FMEA matters including recent FMEA annual conference agreements, hotel agreements for FMEA events, personnel issues,

legislative and policy efforts, and submission of comments in regulatory rulemaking and other proceedings.

30. **2016 Legislative Session.** In the furtherance of our efforts to track and remain up-to-date on relevant legislative efforts, both in Florida and nationally, we (Fred, Jody, Dan, and Amanda) attended the FMEA legislative rally in April. Legislative matters that were given particular attention this year, beyond Representative Mayfield's bill, included legislation that created a public records exemption for utility agencies' security information, including cyber security information (HB1052/SB 776), a local bill to create the Gainesville Regional Utilities Authority (HB 1355), and a bill to expand the tax exemptions for renewable energy systems (HB193/195 and SB 170/172). The Gainesville local bill passed, but was ultimately vetoed by the Governor on the basis of information provided by FMEA.

31. **Tax Seminar and Tax Guide.** As a service to our members, our office publishes The FLORIDA Tax Guide for Municipal Utilities (the Tax Guide), which provides a basic road map for navigating the complex tax rules applicable to municipal utilities in this state. This year, we released the Sixth Edition of the Tax Guide, which was last revised in 2012. This new edition provided an update on changes in the tax rules and statutes, and addresses current issues such as net metering and renewable energy taxation. The Tax Guide is available to all members, in a .pdf or hard copy format.

In order to roll out the new Tax Guide, and to provide members a refresher on basic tax issues, we held the Florida Taxes for Municipal Electric Utilities seminar on February 24, 2016, at OUC's offices in Orlando. The seminar was attended by over 50 member employees, covered relevant tax topics, and provided valuable Q&A opportunities for members to receive legal guidance on issues they face every day. The seminar was so well-received that we were asked to present a portion of our seminar at the Nature Coast Florida Government Financial Officers Association quarterly meeting on April 20, 2016.

32. **APPA Legal Seminar.** The American Public Power Association (APPA) holds an annual, national legal seminar for public power lawyers and managers. Jody, Dan and Amanda attended the 2015 Legal Seminar in Key West. Our office was asked to speak during seminar. Jody's and Amanda's presentation,

titled *Technologically Sound Practices—Avoiding Ethical Issues in an Electronic World*, dealt with legal and ethical issues related to electronic communications such as email, blogs, and social media. Attendees of this talk were able to qualify for one hour of continuing legal education credit in legal ethics.

Jody is the vice chair designate for the 2016 APPA Legal and Regulatory Conference.

33. **Member City Visits.** Over the past year, Fred visited the following member cities:

August 10, 2015 - meeting with Quincy City Council (Fred)
October 15, 2015 - meeting with Bushnell (Fred and Jody)
November 9, 2015 - meeting with Gainesville Regional Utilities (Fred)
November 12, 2015 - meeting with the Town of Havana (Fred and Tom Richards)

Additionally, other members of our office made visits to the following member cities to provide assistance:

- March, 2016 – Dan accompanied staff for a presentation to the Vero Beach Utilities Commission to discuss solar energy and efforts to develop a joint action solar project.
- September, 2015 – Jody made presentations with Nick to the Fort Pierce City Council and the Fort Pierce Utilities Authority, Utility Board to address questions related to the FMPA operational audit and the All-Requirements Project.

34. **Member Services Support.** We continue to respond to member requests for assistance with distribution system issues including franchise agreements, territorial agreements and disputes, as well as assistance with public records requests and Sunshine Law questions, state and local tax matters, tariff filings with the PSC, net-metering implementation, and the like.

Our office has also provided particular assistance to member utilities over the past year, as follows:

- Alachua on rate structure issues;
- Bushnell on public records matters and PSC tariff filings;
- Chattahoochee on review of a new power supply agreement terms and conditions;
- Clewiston regarding billing and disconnection procedures;
- Fort Pierce on the taxability of dark fiber leases;
- Green Cove Springs in terminating its participation in the Electric Cities of Georgia (ECG) Lineman's Safety Training Program, and considerations for hiring a contract system operator;
- Homestead in the development and passage of a rate rider for locally designated historical landmark properties;
- JEA on numerous tax matters;
- JEA and Gainesville Regional Utilities on the application of the PSC regulatory assessment to certain sales for resale;
- Keys Energy Services in its dealings with the U.S. Navy regarding the installation of renewable energy and a transition in Navy metering configuration, and PSC tariff filings;
- Leesburg on PSC tariff filings;
- Mt. Dora on territory and franchise agreement negotiations, and PSC tariff filings;
- Newberry on territorial agreement and pole attachment issues;

- Ocala to address an under-collection of gross receipts tax, net metering questions, and issues addressing their telecom rates and charges;
- Quincy on review of a new power supply agreement terms and conditions;
- ongoing assistance to Jacksonville Beach in negotiating changes to their backup electric service and interconnection agreements with JEA, and PSC tariff filings;
- conducted webinars for all FMEA membership regarding potential pitfalls in responding to in-person public records requests; and
- assistance to all members regarding net metering tariffs and interconnection agreements.

Members of our office also represented FMEA and FMPA at a PSC rulemaking workshop considering rule changes to rules that govern municipal electric utility tariffs and the definition of the PSC's rate structure jurisdiction. Written comments were also submitted subsequent to the rulemaking workshop and we assisted the PSC in finalizing the rule changes.

E. Crystal River Unit 3

35. **Crystal River Unit 3 Retirement.** In February 2013, Duke announced its decision to retire the Crystal River Unit 3 (CR3) nuclear plant in light of extensive repairs required as a result of delaminations in the concrete walls of the containment building, which occurred during and after the previous steam generator replacement project. After much negotiation, a settlement agreement between Duke and the 14 member cities that are joint owners of CR3 or were wholesale customers of Duke Energy and were affected by the CR3 outage was entered into on September 26, 2014. The FMPA All-Requirements Project was also a wholesale customer of Duke during the timeframe of the CR3 outage and, so, is a member of the wholesale customer group. The settlement agreement required Duke to pay the municipal joint owners \$55 million and \$8.4 million to the wholesale customers. Duke also agreed to buy back from the municipal joint owners their interests in CR3, and take on all decommissioning, O&M, and other liabilities after October 1, 2013. Subsequent to

completion and signature of the settlement agreement we worked with Duke's counsel to prepare the voluminous documentation necessary to close on the settlement and convey the cities' interests in CR3 back to Duke. This was a complex closing because it included both a significant real estate transaction and transfer of the cities' nuclear decommissioning trust funds to Duke. We successfully handled final settlement closing over a two day period on October 29 and 30, 2015.

F. Vero Beach Electric System Sale

36. Sale of Vero Beach's System to Florida Power & Light Company (FPL). As this proposed transaction has continued to evolve and transition, we have continued to work closely with FMPA staff and FMPA's bond counsel, and Vero Beach's attorneys. While most in and around Vero Beach believe now that the sale of the electric system to FPL is dead, the purchase and sale agreement between FPL and Vero Beach continues to be effective through the end of 2016. We have continued to coordinate our efforts to ensure all contractual obligations to our project participants and bond covenants are complied with and enforced.

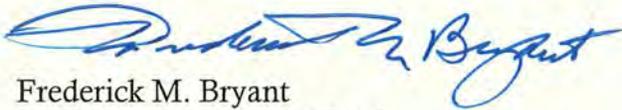
The Vero Beach transaction has received significant media and local political attention in Indian River County. We have assisted staff in handling numerous media inquiries and responded to a number of related public records requests. Additionally, both Indian River County and the Town of Indian River Shores have filed multiple legal and regulatory actions targeted at Vero Beach, including two declaratory statement petitions and one territorial dispute with the Public Service Commission, as well as two court cases, one of which is still pending, and one of which was recently resolved in Vero Beach's favor by the Florida Supreme Court. As a member of FMPA, our office has closely monitored these proceedings, and assisted Vero Beach as Vero Beach has requested.

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Conclusion

This letter is the first step in the process for my evaluation which is provided for in the General Manager/General Counsel Evaluation Process adopted by the Board of Directors. I am available, at your convenience, to discuss this report and conduct the remainder of the review process. For your reference, a copy of the written review process document is enclosed.

Sincerely,



Frederick M. Bryant
General Counsel and Chief
Legal Officer

FMB:kc:als:dbo:jlf
Enclosure (1)

cc: FMPA Board of Directors
FMPA Executive Committee

GENERAL MANAGER/GENERAL COUNSEL
EVALUATION PROCESS

The evaluation of the General Manager and General Counsel must be performed by the officers of FMPA by October 1 of each year. In order to accomplish this task the following process will be followed:

1. On or before July 1 of each year the Chairman of FMPA and Board of Directors will receive a written report from the General Manager and General Counsel on their accomplishments based on their goals and work programs for the last year.
2. The Chairman shall send evaluation forms to the Board of Directors for any comments or input on the evaluation. The evaluation forms must be sent at least five (5) working days prior to the open meeting to collect input and comments discussed in item 3 below.
3. The Chairman will schedule an open meeting (this could be a meeting by phone) to collect input and comments from the Board of Directors for the evaluation by September 1 of each year. This meeting must be noticed at least five (5) working days in advance.
4. The Chairman and Officers of FMPA will complete a written draft evaluation and discuss it at an open meeting with the employee. This meeting must be noticed at least five (5) working days in advance. This written evaluation will at a minimum contain the positive accomplishments of the employee during the last year, areas that need improvement, and the work program and goals on which the employee's evaluation will be based upon for the next year. Any FMPA member attending this meeting will be provided an opportunity to speak.
5. The written evaluation shall be completed by the Chairman and Officers of FMPA by October 1. The evaluation shall be presented to the Board of Directors for final review, discussion, and consideration for approval at the first subsequent, non-emergency Board of Directors Meeting that occurs after October 1. The Chairman's written evaluation must also be distributed to the Board of Directors not less than ten (10) working days prior to the date set for the Board of Directors Meeting. The Chairman's written report shall include any recommended changes in the employee's salary and benefits. The Board of Directors may vote to approve, amend, or reject the Officers written recommendations.

Vock, Tammy

From: Bob Auwaerter [bobauw@gmail.com]
Sent: Saturday, July 02, 2016 5:52 PM
To: Vic DeMattia
Cc: O'Connor, Jim; Vock, Tammy
Subject: Re: FW: RESPONSE REQUESTED – Participation in a Survey of Retail Customers on Solar Energy
Attachments: Utility Scale Solar 2014-Lawrence Berkeley National Lab RFA copy.pdf



Vic,

Thanks for your note. What FMPA staff wants to survey regarding solar power is whether customers want FMPA to build their own solar farms (or have FMPA buy third party solar power) and also be willing to pay HIGHER costs for this power. Michele Jackson from FMPA did a presentation to the Utilities Commission early this year where she stated that solar power costs were significantly higher than traditional baseload power. That did not resonate with me (I have a background in electric utility analysis in my previous life) so I started to do research. In a discussion with a financial analyst with the Department of Energy in DC I was directed to the attached Powerpoint presentation about solar power costs. Focus on pages 17, 19, and 20. I have added in red text statistics regarding the cost of VB Electric's power that we get from FMPA's plants in which we have participations. As you can see, price per Mwh from solar Power Purchase Agreements are coming in substantially lower than what we pay FMPA. This report was done late last year; since then, Congress has made the 30% investment tax credit on solar installations permanent for several years.

I think getting a sense from our customers whether they might want to switch to solar power is important to know. I would make the survey much broader than what FMPA staff is proposing. (I attended in person the FMPA Board of Directors meeting in Orlando where this was discussed and raised the same facts during the meeting.) I would include personal solar power installations as well as surveying the intentions of commercial customers. This is why I am willing to be the City's representative on the task force formulating the survey if the City decides to participate.

Enjoy your holiday weekend,

Bob Auwaerter

On Tue, Jun 28, 2016 at 10:50 AM, Vock, Tammy <TVock@covb.org> wrote:

From: Victor A Demattia [mailto:vademattia@cs.com]
Sent: Friday, June 24, 2016 8:06 PM
To: Vock, Tammy
Subject: Re: RESPONSE REQUESTED – Participation in a Survey of Retail Customers on Solar Energy

Hi Bob,

I am Vic DeMattia, and Alternate on the Finance Commission and an Experienced Engineer. I have done the numbers several times in the last few decades and solar power has never seemed cost effective to me. Today, there are a maze of government programs to entice groups or individuals to purchase solar systems with sketchy refund programs. While, on their own merits, they do not appear to be cost effective, the enticements of various government agencies may make it seem so.

There are significant research studies going on today that would possibly double the efficiency of current systems. Personally, I have not purchased a solar system and would not encourage others to do so without doing a very careful cost-benefit analysis using numbers with no government perks or very well assured government perks. Since we citizens are actually paying the government perks, I am quite reluctant to take any of their programs as being sustaining for the lifetime of a solar system.

Vic DeMattia

-----Original Message-----

From: Vock, Tammy <TVock@covb.org>

To: 'Pegorry1960@gmail.com' <Pegorry1960@gmail.com>; 'gpbrovont@gmail.com' <gpbrovont@gmail.com>; 'Kathryn Barton' <kathryn@offuttcpa.com>; 'Nathan@pa-services.com' <Nathan@pa-services.com>; 'smithsjs@hotmail.com' <smithsjs@hotmail.com>; 'dstump0311@aol.com' <dstump0311@aol.com>; 'Victor A Demattia' <vademattia@cs.com>; 'Laura Moss' <laura@mossim.com>; 'Bob Auwaerter' <bobauw@gmail.com>; 'chuck@onsitemgmt.com' <chuck@onsitemgmt.com>; 'Judy Orcutt' <jjorcutt@bellsouth.net>; 'SLL13@cornell.edu' <SLL13@cornell.edu>; 'billteston@gmail.com' <billteston@gmail.com>; 'Thalassa1@bellsouth.net' <Thalassa1@bellsouth.net>

Cc: Kramer, Jay <JKramer@covb.org>; Winger, Richard <RWinger@covb.org>; Old, Randy <ROld@covb.org>; Howle, Harry <HHowle@covb.org>; O'Connor, Jim <JOConnor@covb.org>

Sent: Fri, Jun 24, 2016 2:45 pm

Subject: FW: FW: RESPONSE REQUESTED – Participation in a Survey of Retail Customers on Solar Energy

For Information Purposes Only. Do not respond.

From: Bob Auwaerter [<mailto:bobauw@gmail.com>]

Sent: Friday, June 24, 2016 2:08 PM

To: Vock, Tammy

Cc: O'Connor, Jim

Subject: Re: FW: RESPONSE REQUESTED – Participation in a Survey of Retail Customers on Solar Energy

Tammy,

I would appreciate it if you could send the email below to Mr. O'Connor, the Mayor and City Council, and all the members of the Finance Commission and Utilities Commission. Please copy me on it as well. Thanks.

To: The Mayor and City Council of Vero Beach

The City Manager of Vero Beach

The City of Vero Beach Finance Commission

The City of Vero Beach Utilities Commission

Subject: Participation in a Survey of Retail Customers on Solar Energy

Mr. O'Connor forwarded to you through the City Clerk an email asking whether municipal members of FMPA wished to participate in a survey of retail customers on solar energy. It asked two questions:

1. **Is your utility interested in conducting a survey of your retail customers to determine their opinions on solar energy? (Yes/No)**
2. **If so, please provide the contact information for a representative from your utility to serve on a Market Research Task Force.** Your representative will be asked to participate in the selection of a market research firm, to work with others on the development of the survey, and to be the point of contact for the research firm with your utility.

This was discussed in yesterday's FMPA's Board of Directors meeting in Orlando, which I attended in person. As part of the discussion on this agenda item, the Board member from Leesburg, Patrick Foster, raised some of the same points regarding solar power that I brought up in the previous FMPA Board meeting and also in a number of meetings of the Utilities Commission. He said that he sees a "tsunami" coming for FMPA members as more customers consider solar power. Importantly, he said that now commercial customers are considering solar. He stated that Walmart wants to have all their stores powered by solar or other renewables by 2020. He also said that Publix ranks their stores by power cost. Millennials are more willing to consider solar and other renewables compared to those of older (my) generations. During the meeting yesterday I reminded the FMPA Board members of my presentation in the last FMPA meeting (using the same Department of Energy (DOE) presentation on solar power that I discussed in one of this year's Utilities Commission meetings) about how quickly solar power costs are coming down. DOE projected a cost in the mid-\$40's/MwH for solar, approximately half of what we pay for baseload power from the St. Lucie nuclear plant, which is the cheapest power that we buy from FMPA.

Based on these trends, I would recommend that we participate in the survey. It is important to understand the size and nature of the threat if we are going to combat it. It was my understanding that the actual execution of the survey in each member utility would cost around \$10,000 per member. Also, I would be willing to serve as the representative of our utility that is requested to serve on the Market Research Task Force.

Sincerely,

Bob Auwaerter

Vice Chairman

City of Vero Beach Utilities Commission

On Fri, Jun 24, 2016 at 12:51 PM, Vock, Tammy <TVock@covb.org> wrote:

For Information Purposes Only. Please do not respond.

From: O'Connor, Jim

Sent: Friday, June 24, 2016 11:08 AM

To: Vock, Tammy

Cc: Kramer, Jay; rbold@rbold.com; Turner, Pilar; Winger, Richard; Howle, Harry

Subject: Fwd: RESPONSE REQUESTED – Participation in a Survey of Retail Customers on Solar Energy

Tammy

Please send to Utility and Finance Commission

Sent from my iPad

Begin forwarded message:

From: Sharon Smeenk <Sharon.Smeenk@fmpa.com>

Date: June 24, 2016 at 10:57:28 AM EDT

Subject: RESPONSE REQUESTED – Participation in a Survey of Retail Customers on Solar Energy

THIS EMAIL IS BEING BLIND COPIED TO FMPA'S BOARD OF DIRECTORS & ALTERNATES

In late 2015, FMPA solicited interest from its members about participating in a joint action solar photovoltaic (PV) project. At that time, eight cities signed a non-binding expression of interest to work together on this effort. As part of this project, the participants are planning to survey their retail customers to determine customer opinions on solar energy and to help the cities decide whether or not to participate in the solar PV project.

FMPA's Board of Directors has directed staff to assist members in conducting the surveys using funds from FMPA's Project Development Fund. In addition, the Board has directed staff to offer participation in the survey to any FMPA member that might be interested in joining the effort. FMPA plans to develop a Request for Proposals to select a market research firm that will conduct telephone surveys for each interested FMPA member utility.

We are reaching out to FMPA Board members to identify members interested in participating in the survey.
Please respond to the questions below:

1. **Is your utility interested in conducting a survey of your retail customers to determine their opinions on solar energy? (Yes/No)**

2. **If so, please provide the contact information for a representative from your utility to serve on a Market Research Task Force.** Your representative will be asked to participate in the selection of a market research firm, to work with others on the development of the survey, and to be the point of contact for the research firm with your utility.

Please provide a response **NO LATER THAN Friday, July 15, 2016.**

If you have any questions or need any additional information, please feel free to contact me.

Thanks!
Sharon

Sharon Smeenk
Member Services Manager

Florida Municipal Power Agency
8553 Commodity Circle
Orlando, FL 32819-9002
Office: [\(407\) 355-7767](tel:4073557767)

Direct: [\(321\) 239-1062](tel:3212391062)

Sharon.Smeenk@fmpa.com



Please consider the environment prior to printing this e-mail.

Please Note: Florida has a very broad Public Records Law. Most written communications to or from State and Local Officials and agencies regarding State or Local business are public records available to the public and media upon request. Your email communications, including your email address, may therefore be subject to public disclosure.

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Utility-Scale Solar 2014

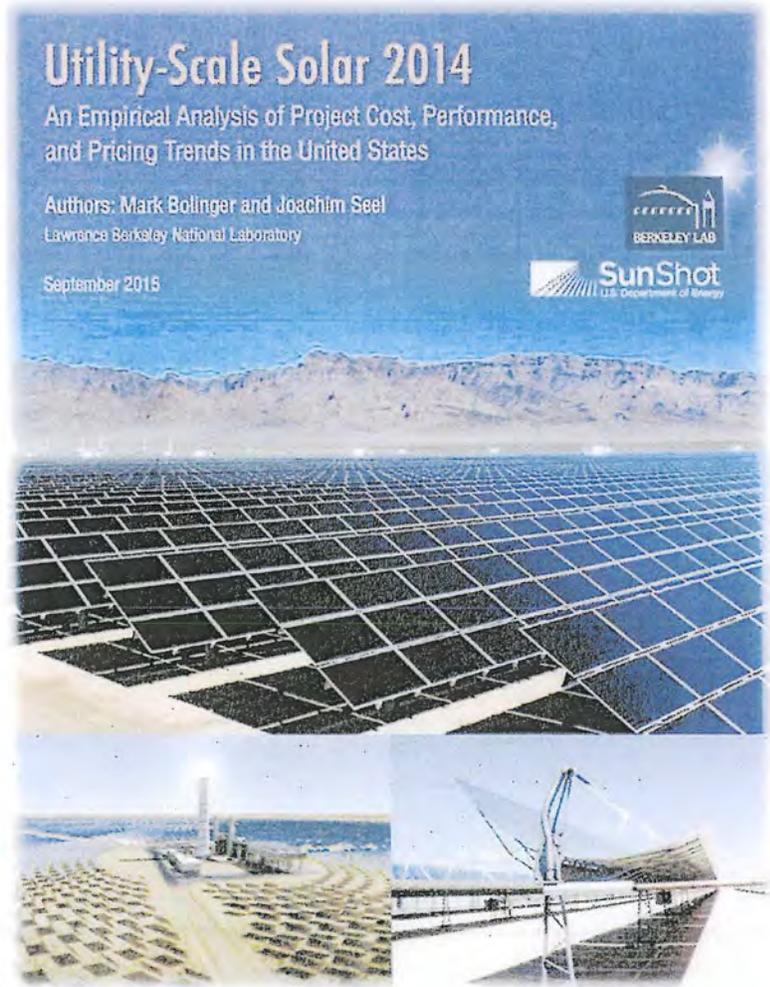
An Empirical Analysis of Project Cost, Performance, and Pricing Trends in the United States

Mark Bolinger & Joachim Seel

Lawrence Berkeley National Laboratory

September 30th 2015

This research was supported by funding from the U.S. Department of Energy's SunShot Initiative.



ENERGY TECHNOLOGIES AREA



Presentation Outline

Strong growth of the utility-scale solar market offers increasing amounts of project-level data that are ripe for analysis.

1. Introduction to the project population and description of broader technology trends

Key findings from analysis of the data samples:

2. Installed project prices
3. Operation and maintenance (O&M) costs
4. Performance (capacity factors)
5. Power purchase agreement ("PPA") prices
6. Future outlook

We define "utility-scale" as any ground-mounted project that is larger than 5 MW_{AC}.
Smaller systems are analyzed in LBNL's "Tracking the Sun" series.



Total utility-scale solar project universe is dominated by PV projects

PV project population: 192 projects totaling 6,201 MW_{AC}

- This population's characteristics are described in the next few slides

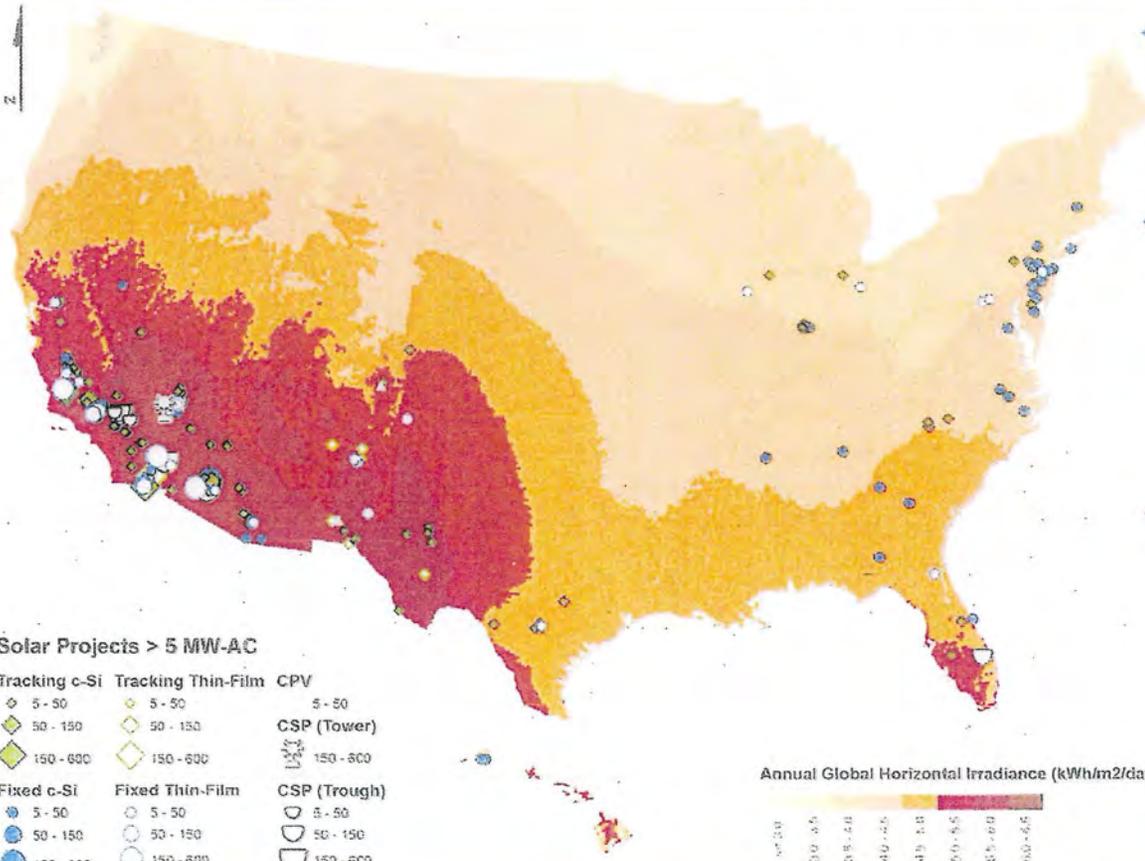
CPV project population: 2 projects totaling 35 MW_{AC}

- Both almost 4 years old, use Amonix high-concentration technology, are sited in similarly excellent solar resource areas, and have inverter loading ratios of ~1.17

CSP project population: 16 projects totaling 1,773 MW_{AC}

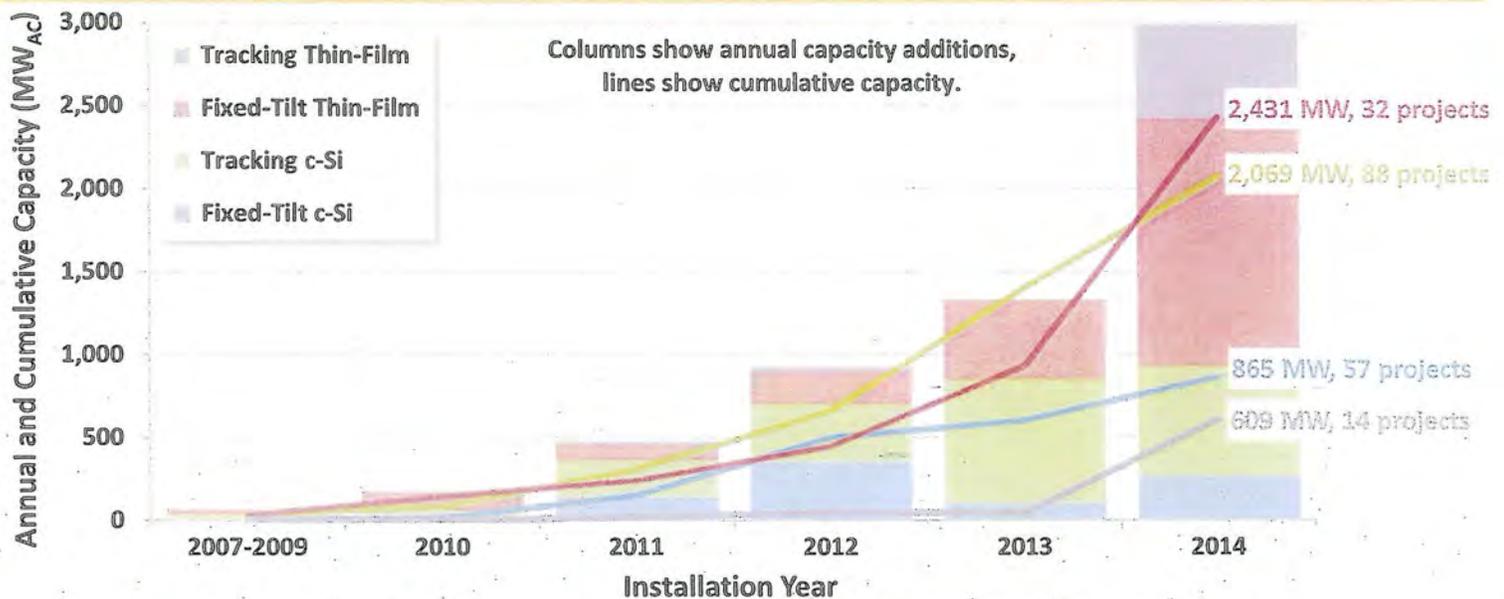
- After nearly 400 MW_{AC} built in the late-1980s (and early-1990s), no new CSP was built in the U.S. until 2007 (68 MW_{AC}), 2010 (75 MW_{AC}), and 2013-2015 (1,237 MW_{AC})
- Prior to the large 2013-15 build-out, all utility-scale CSP projects in the U.S. used parabolic trough collectors
- The five 2013-2015 projects include 3 parabolic troughs (one with 6 hours of storage) totaling 750 MW_{AC} (net) and two "power tower" projects (one with 10 hours of storage) totaling 487 MW_{AC} (net)

Historically heavy concentration in the Southwest and mid-Atlantic, but now spreading to Southeast



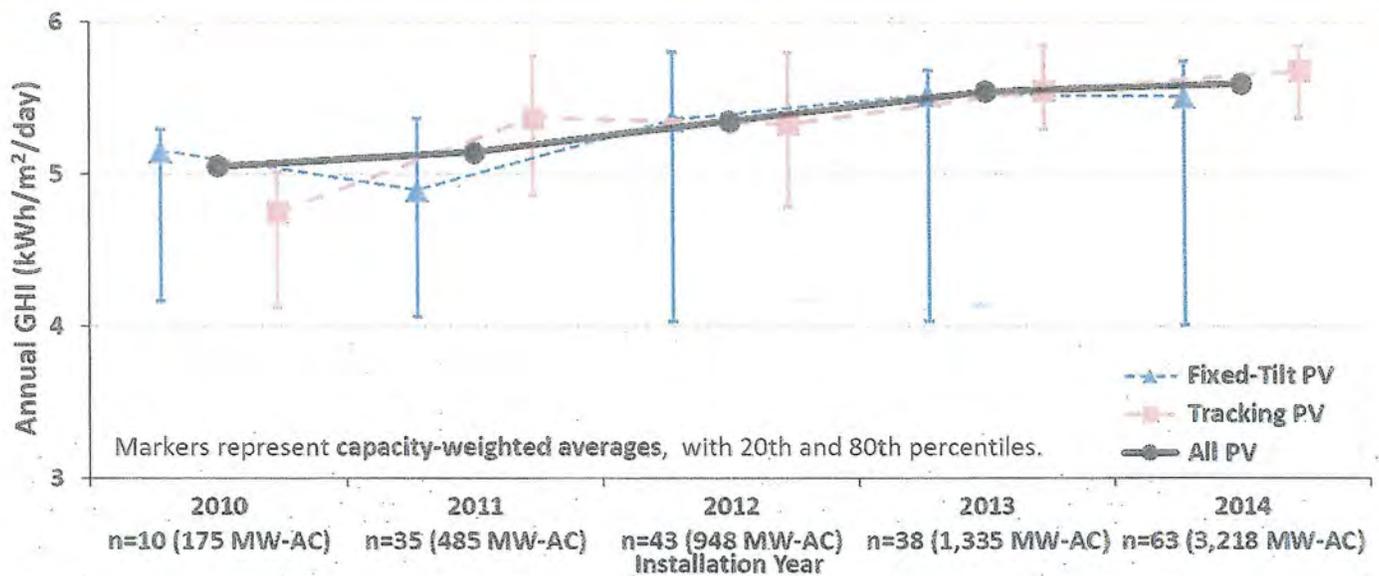
- ◆ Primarily fixed-tilt c-Si projects in the East
- ◆ Tracking (c-Si and, increasingly, thin-film) is more common in the Southwest
- ◆ Total MW share:
 - 1) CA – 59%
 - 2) AZ – 17%
 - 3) NV – 5%
 - 4) NM – 4%
 - 5) TX – 3%

PV project population broken out by tracking vs. fixed-tilt, module type, and installation year



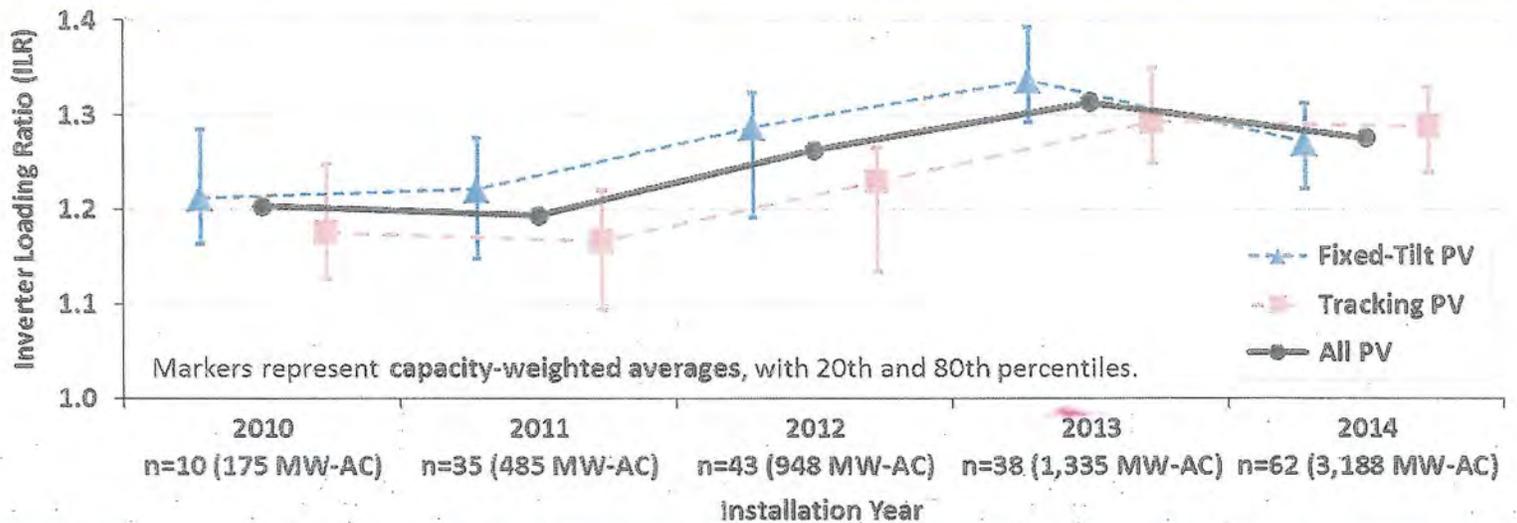
- ◆ 48% of cumulative PV capacity in population came online in 2014 (70% in 2013-2014)
- ◆ 50% of PV capacity that came online in 2014 was from *just three* large thin-film projects: Topaz (586 MW_{AC}), Desert Sunlight (563 MW_{AC}), Agua Caliente (348 MW_{AC})
- ◆ “Tracking c-Si” and “fixed-tilt thin-film” have been the predominant configurations over time, but this is changing: more tracking (12) than fixed-tilt (4) thin-film projects came online in 2014 (though fixed-tilt thin-film *capacity* far outweighed tracking thin-film)

On average, more recent project vintages have been built in higher-quality solar resource sites



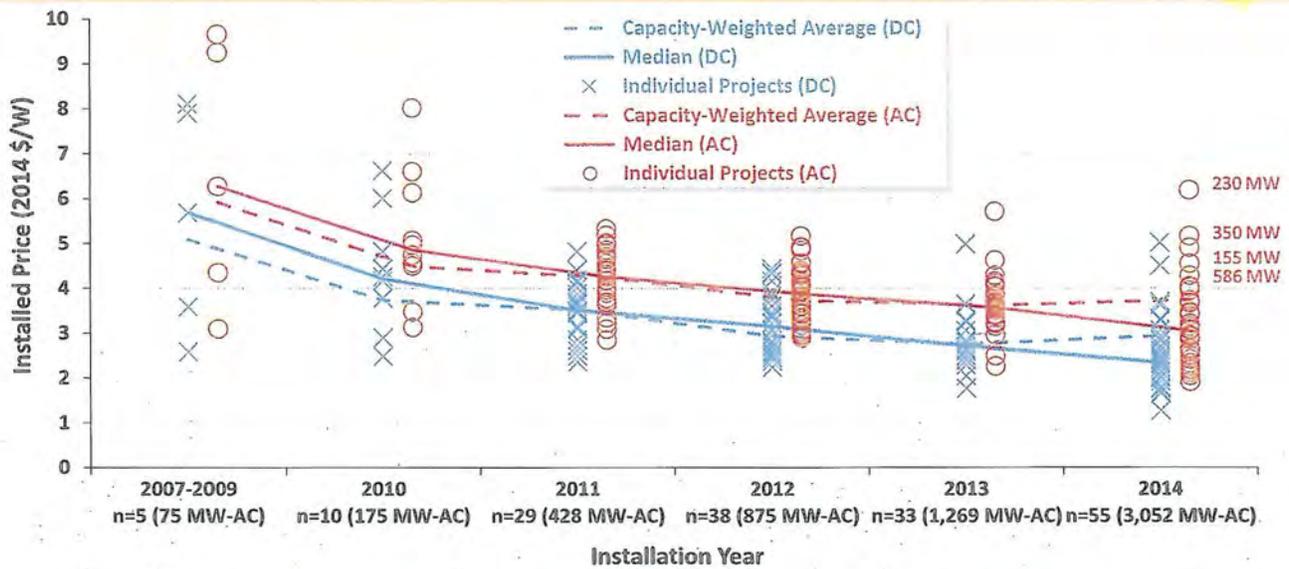
- ◆ An increase in the average GHI by project vintage simply reflects a relative shift in newer capacity towards the high-GHI Southwest
- ◆ The wide 80/20 distribution of fixed-tilt PV reflects deployment throughout the US, whereas tracking PV is concentrated more in the high-GHI Southwest
- ◆ All else equal, higher GHI should boost sample-wide capacity factors (reported later)

The average inverter loading ratio (ILR) has increased over time, to around 1.3 in 2013-14



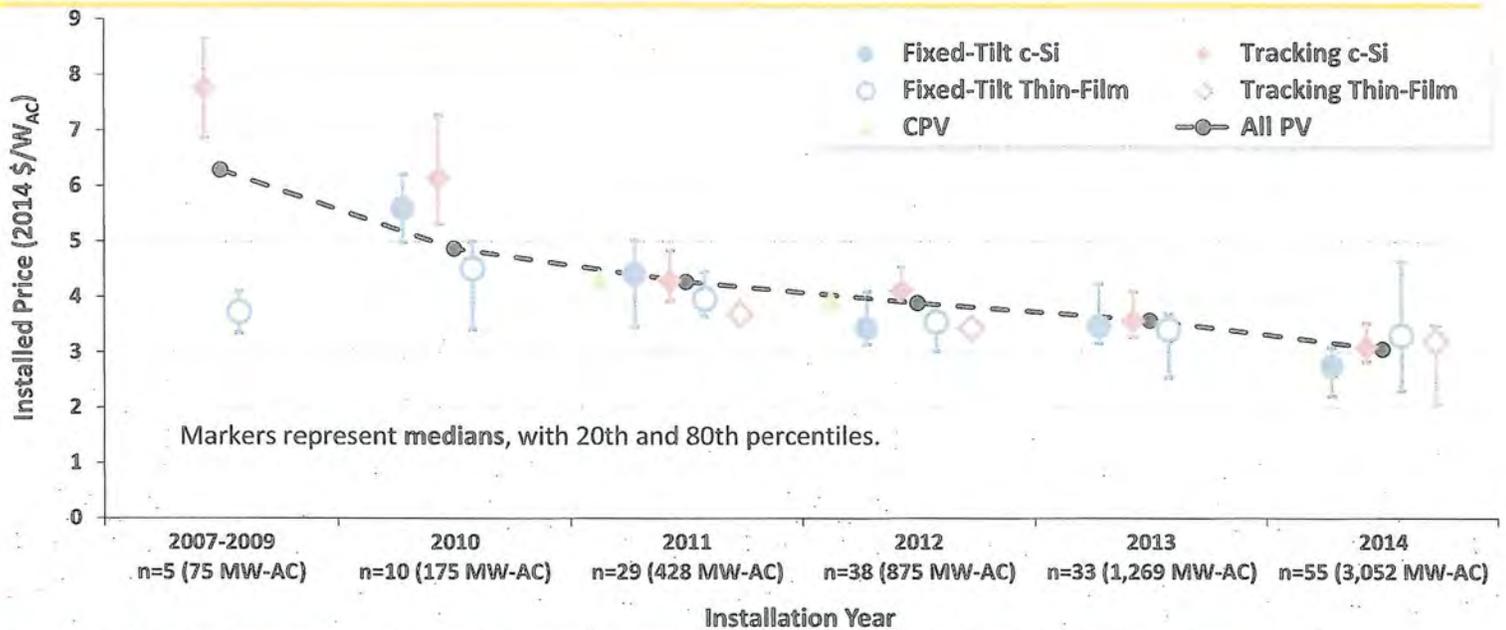
- ◆ As module prices have fallen (faster than inverter prices), developers have oversized the DC array capacity relative to the AC inverter capacity to enhance revenue.
- ◆ The apparent decline in the capacity-weighted average ILR from 2013 to 2014 is related to several large projects – the median ILR (not shown) held constant in 2014 (was 1.29 in both years)
- ◆ Except in 2014 (skewed by several large projects), fixed-tilt PV generally has a higher average ILR than tracking PV (fixed-tilt has more to gain from boosting ILR)
- ◆ All else equal, a higher ILR should boost sample-wide capacity factors (reported later)

Median installed price of PV has fallen steadily, by more than 50%, to around \$3/W_{AC} (\$2.3/W_{DC}) in 2014



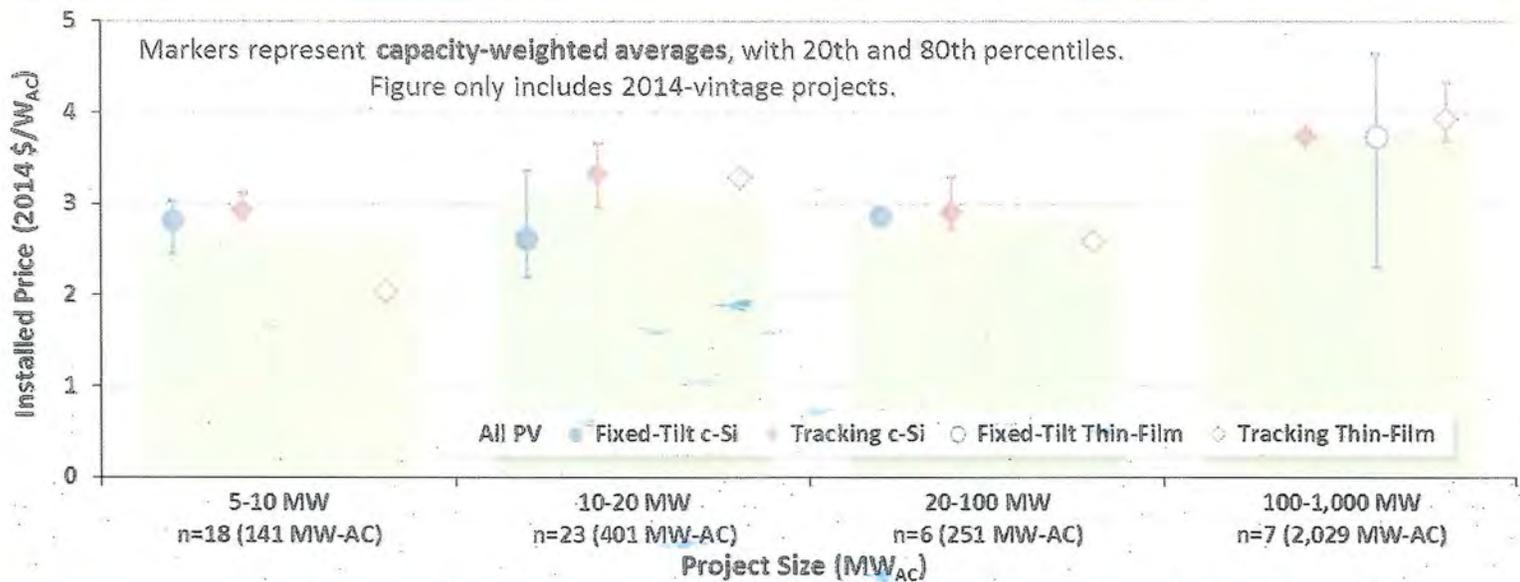
- ◆ Installed prices are shown here in both DC and AC terms, but because AC is more relevant to the utility sector, all metrics used in the rest of this slide deck are expressed solely in AC terms
- ◆ The lowest 20th percentile fell from \$3.2/W_{AC} in 2013 to \$2.3/W_{AC} in 2014
- ◆ Capacity-weighted average prices were pushed higher in 2014 by several very large projects that had been under construction for several years (but only entered our sample in 2014, once complete)
- ◆ This sample is backward-looking and may not reflect the price of projects built in 2015/2016

Installed price decline led primarily by c-Si



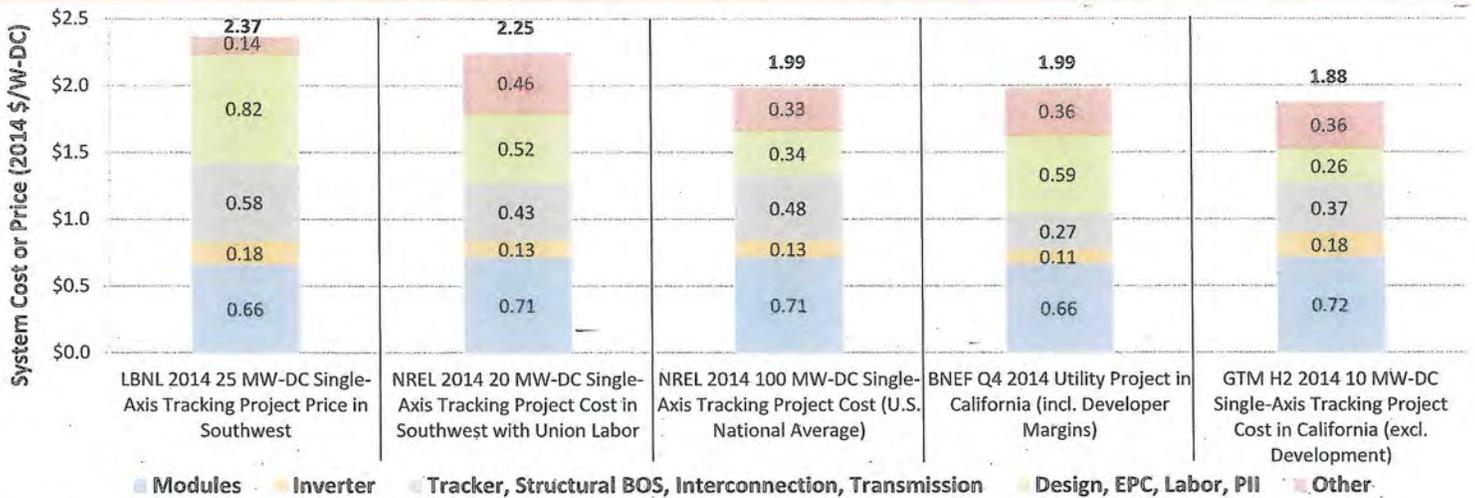
- ◆ Pricing has converged among the various mounting/module configurations over time
- ◆ Not surprisingly, tracking appears to be slightly more expensive than fixed-tilt (at least for c-Si)
- ◆ Large 80/20 range of fixed-tilt thin-film in 2014 reflects several mega-projects with high prices
- ◆ The two CPV projects built in 2011 and 2012 were priced similar to PV at the time

2014 project sample does not reflect economies of scale



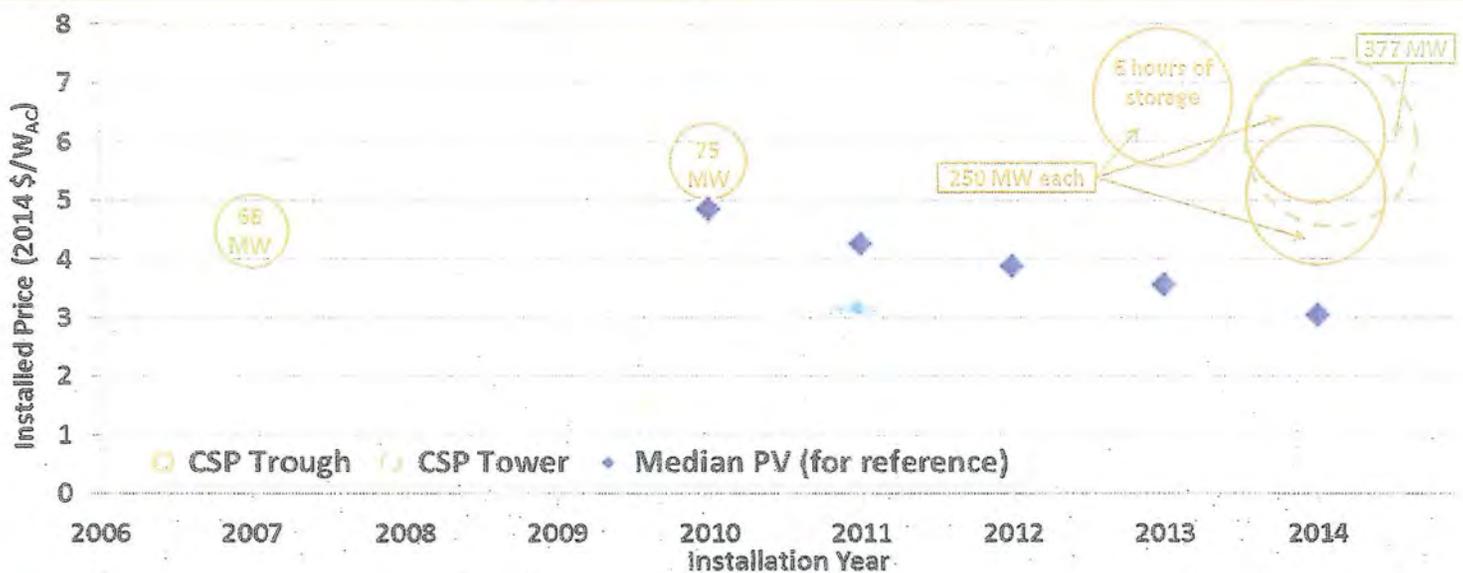
- ◆ Modular/scalable “power block” solutions from manufacturers like SunPower and First Solar may have already wrung out most of the cost savings otherwise available to larger projects
- ◆ Several of the 100+ MW projects have been under construction for several years, possibly reflecting a higher-cost past
- ◆ In general, larger projects may face greater development, regulatory, interconnection costs that outweigh any economies of scale

Bottom-up modeled installed prices are lower than our empirical data



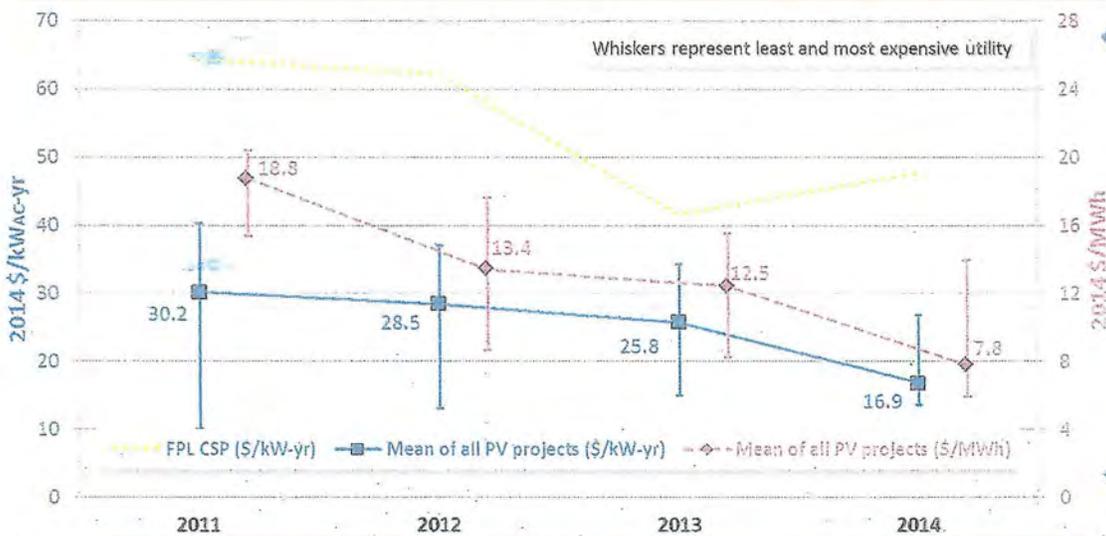
- ◆ Prices presented here in DC terms, to be consistent with how presented by NREL, BNEF, GTM
- ◆ Empirical LBNL project (far left) is most-expensive at \$2.37/W_{DC}, despite reporting among the lowest module costs (\$0.66/W_{DC})
- ◆ Largest discrepancy is in EPC category – perhaps reflecting forward-looking modeling vs. backward-looking empirical data (sample LBNL project achieved commercial operation in 2014)
- ◆ There are also discrepancies in terms of what costs are captured by the various modeled estimates relative to the empirical data (e.g., development costs, financing costs)
- ◆ There is fairly substantial variation even among the various bottom-up modeled estimates

Not much movement in the installed price of CSP



- ◆ Small sample of 6 projects (4 built in 2013-14) makes it hard to identify trends
- ◆ That said, there does not appear to be much of a trend – CSP prices seem to be moving sideways (in contrast to PV's downward trend)
- ◆ To be fair, newest projects are much larger, and include storage and/or new technology (power tower) in some cases, making comparisons difficult

O&M cost data still very thin, but largely consistent with early years of cost projections

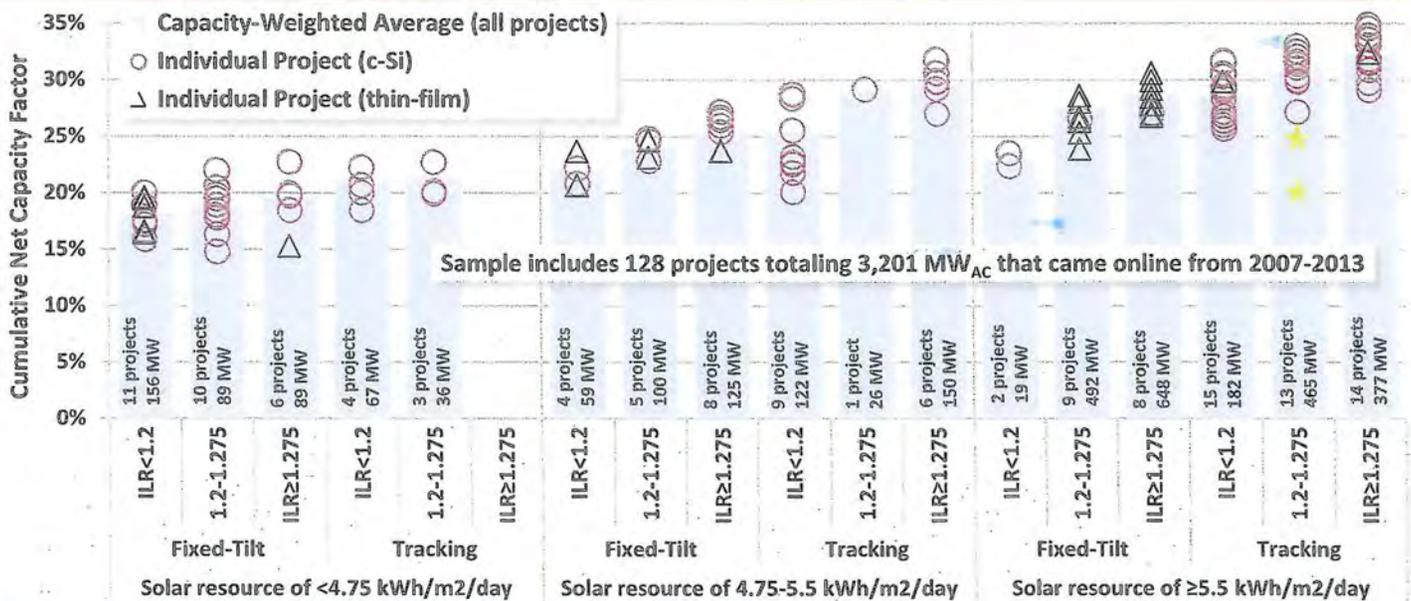


- ◆ Only a few utilities report solar O&M costs (see table), and tend to report fleet-wide averages rather than project-level costs (which limits the usefulness of the data)
- ◆ O&M costs appear to be declining over time as fleet size increases, but hard to tell (e.g., missing PG&E data for 2014 could be skewing sample)

Year	PG&E		PNM		APS		FP&L	
	MW _{AC}	# projects	MW _{AC}	# projects	MW _{AC}	# projects	MW _{AC}	# projects
2011	N/A	N/A	N/A	N/A	51	3	110	3
2012	50	3	20	4	96	4	110	3
2013	100	6	42	4	136	6	110	3
2014	N/A	N/A	65	6	168	7	110	3
predominant technology	fixed-tilt c-Si		fixed-tilt thin-film		primarily tracking c-Si		mix of c-Si and CSP	



27.5% average sample-wide PV net capacity factor, but with large project-level range (from 15%-35%)



Project-level variation in PV capacity factor is driven by:

- ◆ Solar Resource (GHI): Highest resource bin has ~8% higher capacity factor than lowest
- ◆ Tracking: Adds ~4% to capacity factor on average across all three resource bins
- ◆ Inverter Loading Ratio (ILR): Highest ILR bins have ~4% higher capacity factor than lowest
- ◆ Module type: No discernible pattern between c-Si and thin-film

The two CPV projects (see green stars) have underperformed relative to similarly configured PV projects

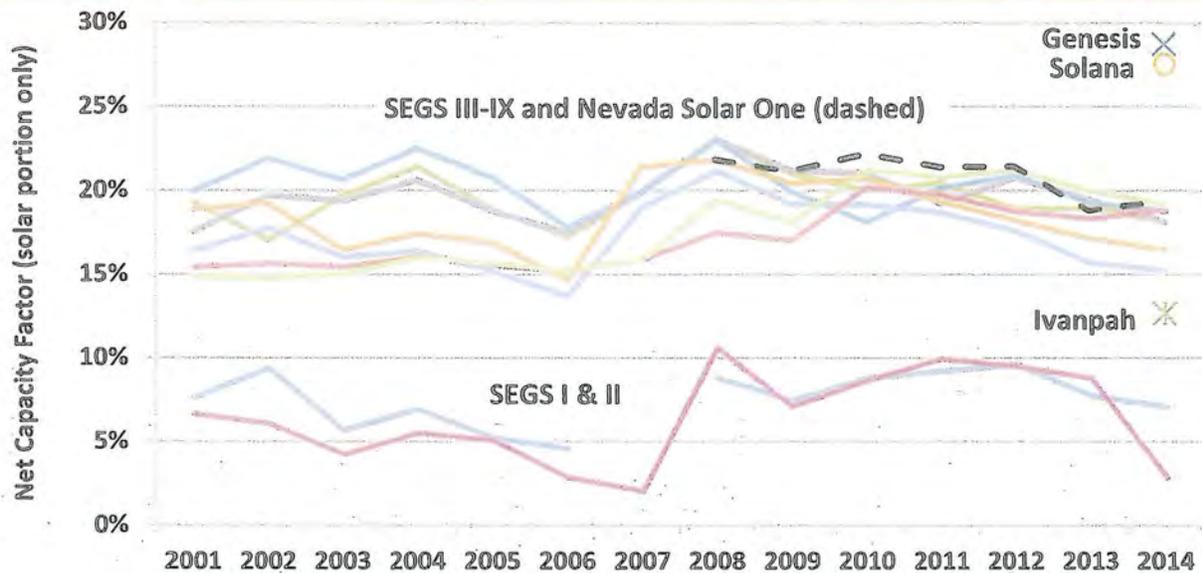
More recent PV project vintages have higher capacity factors on average



Higher capacity factors by vintage driven by an increase in:

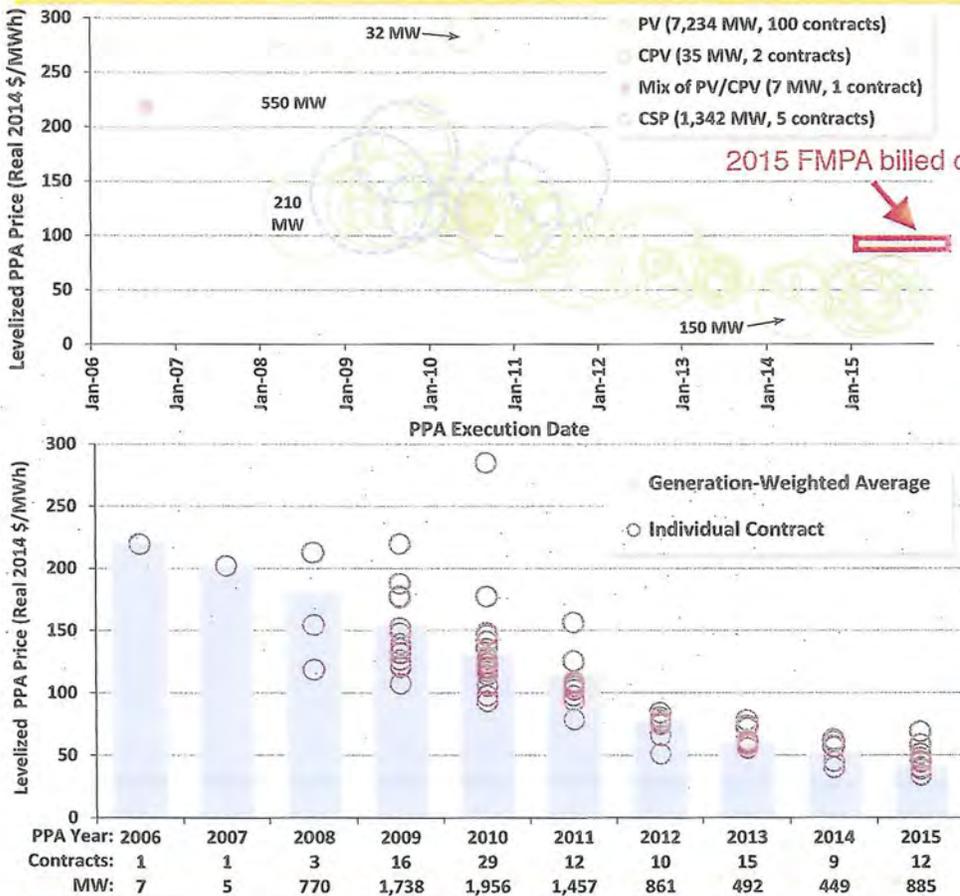
- ◆ Tracking in 2011
- ◆ Inverter loading ratio (ILR) in 2012 and 2013
- ◆ Strength of the solar resource (GHI) in 2012 and 2013

Two of three new CSP projects struggled with teething issues in 2014 (but improving in 2015)



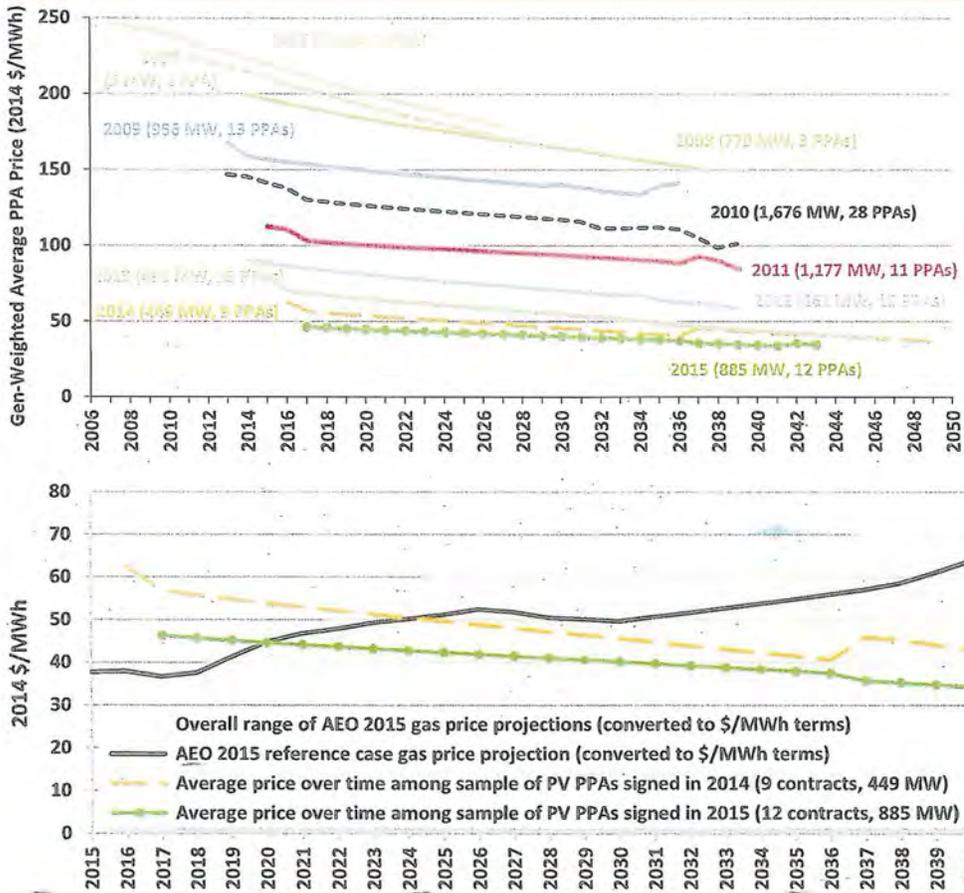
- ◆ SEGS III-IX from the 1980s still chugging along (not far below 2007's Nevada Solar One), while SEGS I-II have lower NCFs (due to a variety of factors)
- ◆ Among newer projects: Genesis matched expectations, but Solana (expecting ~41%) and Ivanpah (expecting ~27%) fell short – *but improving so far in 2015*

Levelized PPA prices have fallen by more than two-thirds since 2009



- ◆ PPA prices are levelized over the full term of the contract, after accounting for any escalation rates and/or time-of-delivery factors
- ◆ Strong/steady downward price trend since 2006
- ◆ Smaller projects (e.g., 20 MW) no less competitive
- ◆ CPV and CSP largely competitive *at the time*, but little visibility recently
- ◆ >75% of the sample is currently operational
- ◆ Broadening of the market in 2015 (AR, AL, FL)

PV PPA prices generally decline over time in real dollar terms, in contrast to fuel cost projections



- ◆ ~70% of PV sample has flat annual PPA pricing (in nominal dollars), while the rest escalate at low rates
- ◆ Thus, average PPA prices *decline* over time in real dollar terms (top graph)
- ◆ Bottom graph compares 2014- and 2015-vintage PPA prices to range of gas price projections from AEO 2015, showing that...
- ◆ ...PV can compete with *even just the fuel costs* of gas-fired generation, and also provides a long-term hedge against potential fuel cost increases

Apparent deep market at these low PPA prices

2015 FMPA Billed Cost/MWh by Plant

Austin Energy:

St. Lucie \$79.63	Stanton \$97.56
Tri City \$102.06	Stanton II \$84.09

- 600 MW solar RFP received 7,976 MW response (33 bidders, 149 proposals)
- Almost 1,300 MW were offered at levelized prices of \$45/MWh or less.

Southwestern Public Service:

- 200 MW solar RFP received 5,250 MW response
- ~3,000 MW priced at \$40-50/MWh, ~1,800 MW priced at \$50-60/MWh (levelized)

NV Energy:

- 200 MW renewable RFP received 2,537 MW response (90% of which was PV)
- Two 100 MW winners ~\$40/MWh levelized; others reportedly at similar prices.

Idaho Power and Rocky Mountain Power:

- These two Idaho and Utah utilities have been inundated with >2,000 MW of requests for "avoided cost" PURPA contracts at prices of ~\$50-70/MWh

Across the South:

- Recently announced PPAs in Alabama (\$61/MWh), Arkansas (~\$50/MWh), Georgia (~\$65/MWh), Florida (\$70/MWh)

Financial modeling also supports low PPA prices – and suggests modest set-back in 2017

Now:

Using aggressive-but-achievable empirical data drawn from this slide deck, along with basic finance assumptions, yields a real levelized PPA price of \$43.5/MWh – *consistent with the data sample*

- Empirical project assumptions: \$2/W_{AC} CapEx, 33% net capacity factor (with 0.5% annual degradation), \$30/kW-year total OpEx
- Financing assumptions: 30% ITC, 5-year MACRS depreciation, 40.2% combined tax rate, 25-year PPA term, 10% after-tax equity IRR, 17-year debt at 5.5% interest and 1.35 DSCR

Post-2016:

If 30% ITC reverts to 10% in 2017, this very same project would need a PPA price of \$54.2/MWh, all else equal

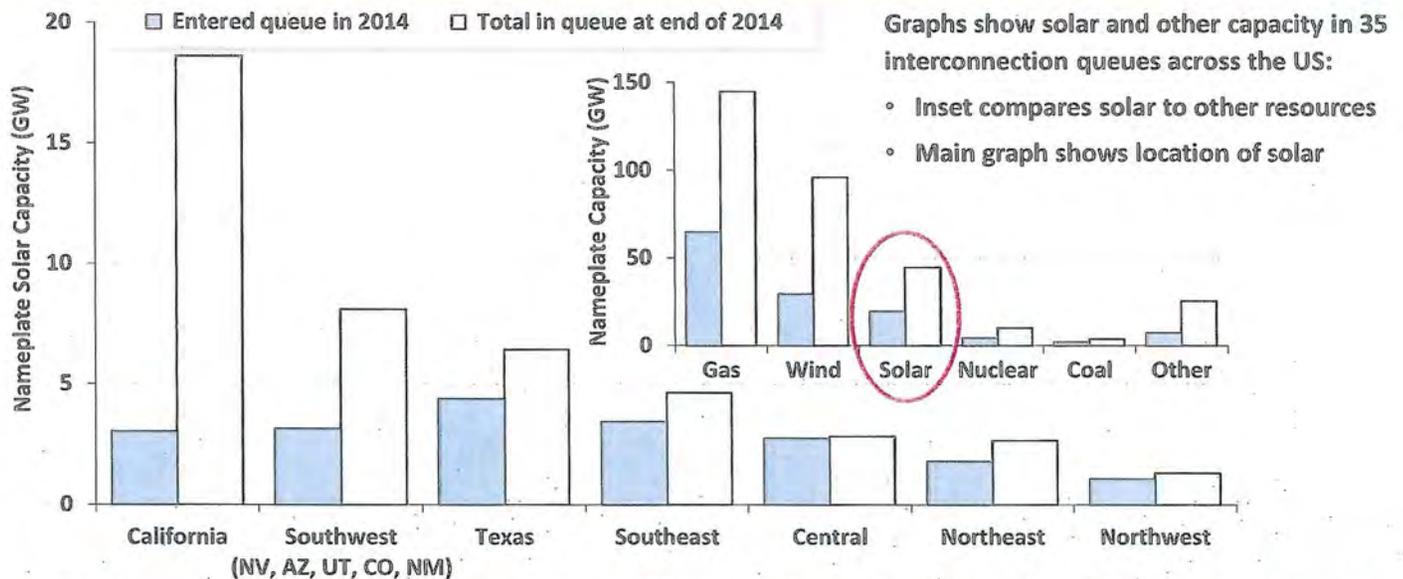
- PPA price increase is limited to \$10.7/MWh by a boost in leverage from 44.3% to 58.6%, which reduces the WACC from ~7% to ~6%, thereby partially mitigating the reduction in the ITC
- Though certainly not \$43.5/MWh, \$54.2/MWh is still not too shabby (think back a few years...)

To get back to \$43.5/MWh under a 10% ITC through CapEx reductions alone, installed cost would need to drop by \$0.50/W_{AC} to \$1.5/W_{AC}

- Some 2015/16 projects may already be at or close to \$1.5/W_{AC} (recent financing announcements)
- First Solar's CEO recently promised "fully installed" costs of less than \$1/W in 2017 (even if he was thinking in DC terms, this is still at or below \$1.5/W_{AC})



Looking ahead: utility-scale pipeline has grown, driven by an expanding market outside of the Southwest



- ◆ 44.6 GW of solar was in the queues at the end of 2014 (up from 39.5 GW at end of 2013); *more than 5 times the installed solar capacity in our project population at the end of 2014*
- ◆ Solar was in third place in the queues, behind natural gas and wind
- ◆ **Expanding market:** Texas and Southeast had more new entrants than California or Southwest in 2014; other three regions saw an unprecedented influx of new solar capacity in 2014 as well
- ◆ *Not all of this capacity will be built!* (but much of what is will likely be built prior to 2017)

Questions?

Download this report and all of our other solar and wind work at:

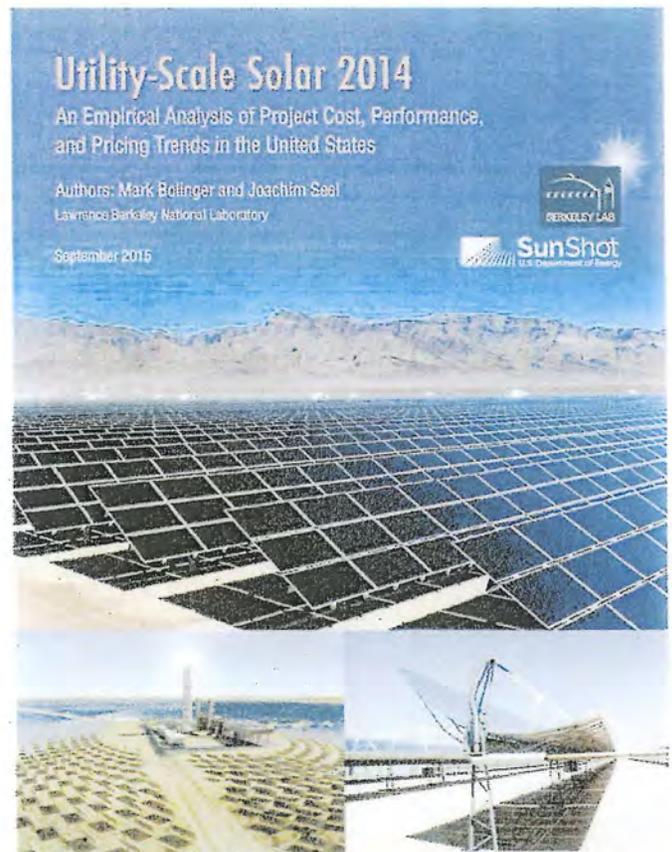
<http://emp.lbl.gov/reports/re>

Contact:

Mark Bolinger: MABolinger@lbl.gov

Joachim Seel: JSeel@lbl.gov

This research was supported by funding from the U.S. Department of Energy's SunShot Initiative.



ENERGY TECHNOLOGIES AREA



4-D)

Solar Photovoltaic Projects

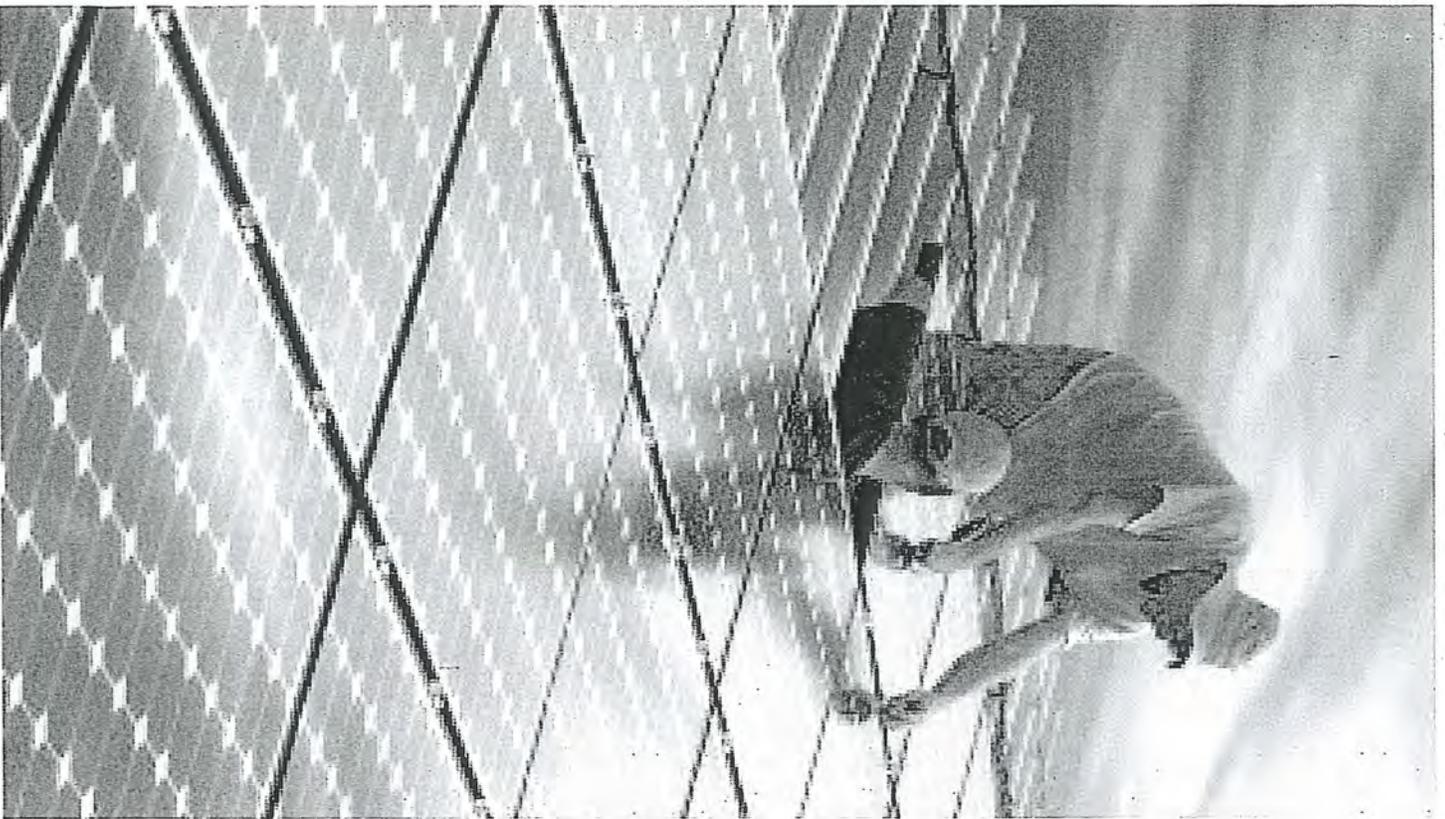
Considerations for FL Municipal Utilities



Florida Municipal Power Agency
Community Power. Statewide Strength.®

Utilities Commission of the City of Vero Beach

March 8, 2018

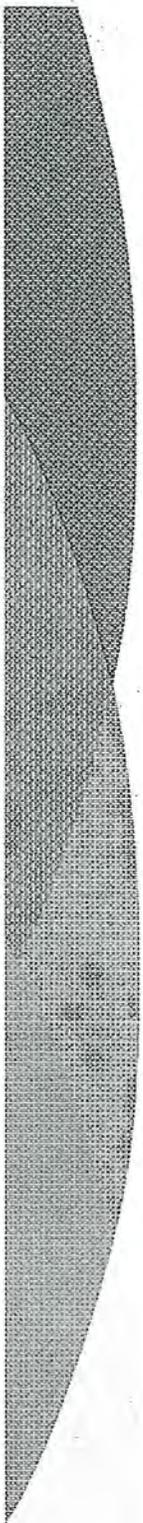


Why Consider Solar Energy ...

- To meet utility goals for renewable energy
- Growing consumer interest in clean energy
- Regulatory policies that may allow third-parties to supply solar energy to utility customers
- (and again) Customers want it!

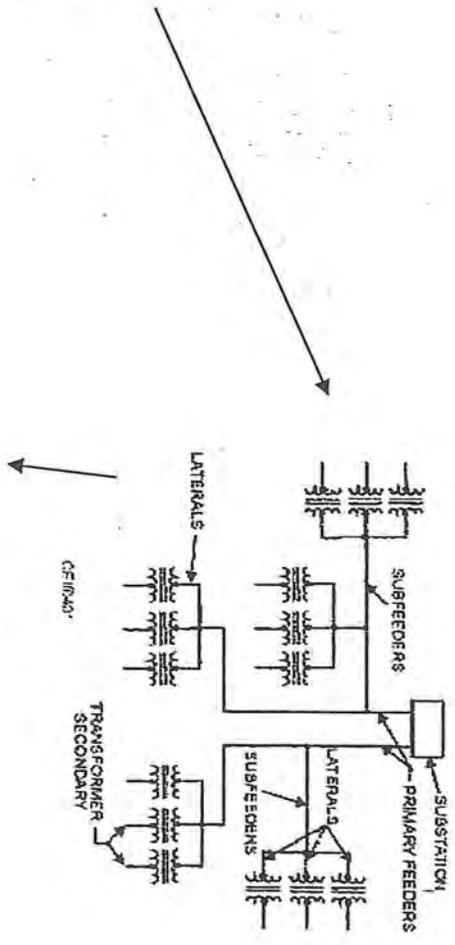
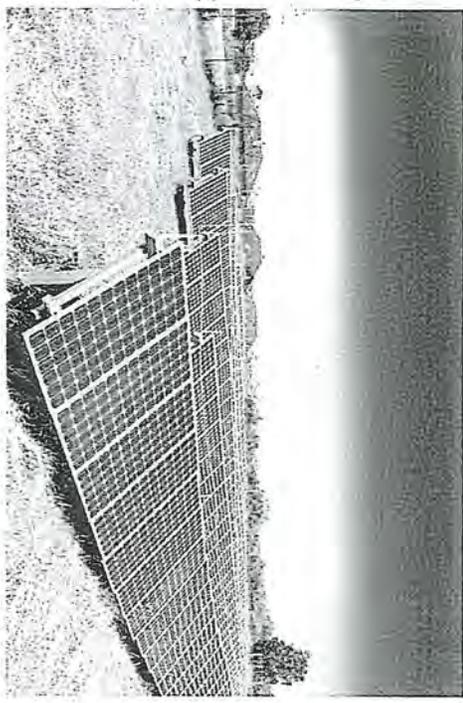
Survey says...

- SECI Distribution Co-ops surveyed members' interest in participating in a solar project, even with higher costs:
 - 42% respondents willing to allocate 5-20% of their bill to a solar rate
 - 20% willing to assign a greater than 20% of bill to a solar rate
 - 43% willing to pay 5 cents premium for energy from a 100 kWh block of solar energy
 - 53% felt that those who wished to pay for solar shouldn't be subsidized by those who don't



Consumers Buy-Into Community Solar Programs

Community Solar Installation



Residential Retail Customers



Federal Tax Incentives - Driving the Solar Industry

- A 30% Investment Tax Credit allows individuals or businesses to deduct 30% of the investment made in a solar project from their federal income tax owed in the year the project is completed.
- For example, a couple installs a rooftop solar system in 2015 for a cost of \$30,000. The couple had an AGI of \$120,000 and owes \$24,000 in federal taxes. After applying the ITC, the couple pays \$14,000 in federal taxes.
- A Solar Development Company with a Tax Equity Partner completes a utility-scale solar project for a cost of \$60,000,000. The Company/Partner can reduce taxes owed to the federal government by \$20,000,000 in 2015.

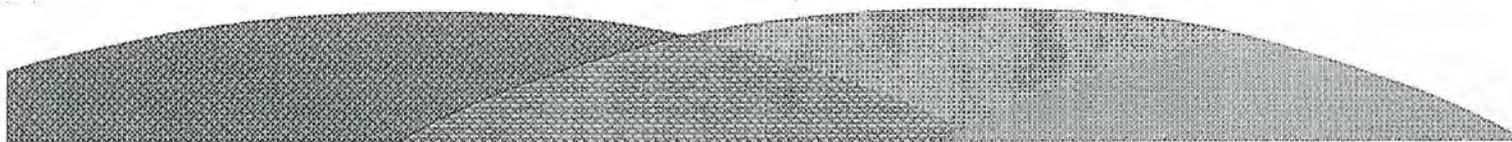
Solar Project Installed Cost Elements for Utility Scale Projects

Modules	40%
Inverters	7%
Racking	9%
Electrical Equipment (and I&C)	5%
Construction Labor	8%
Construction Management/Indirects	5%
Project Indirects (Engineering, Profit, Contingency)	13%
Land, Permits, Studies, IDC	11-16%

Cost to Install fixed tilt Solar PV in Florida (\$2015)

Plant Size (dc)	Plant Maximum Output (ac)	Total Installed Cost (\$/W dc)	Total Installed Cost (\$/W ac)	Approximate Total Installed Cost (\$)
54 kW	40 kW	\$2.76/W dc	\$3.73/W ac	\$149,000
675 kW	500 kW	\$1.99/W dc	\$2.68/W ac	\$1,341,000
1.35 MW	1 MW	\$1.90/W dc	\$2.57/W ac	\$2,566,000
5.4 MW	4 MW	\$1.82/W dc	\$2.45/W ac	\$9,819,000
13.5 MW	10 MW	\$1.75/W dc	\$2.36/W ac	\$23,629,000
40.5 MW	30 MW	\$1.69/W dc	\$2.28/W ac	\$68,461,000

**Diminishing economy of scale above 10 MWac*

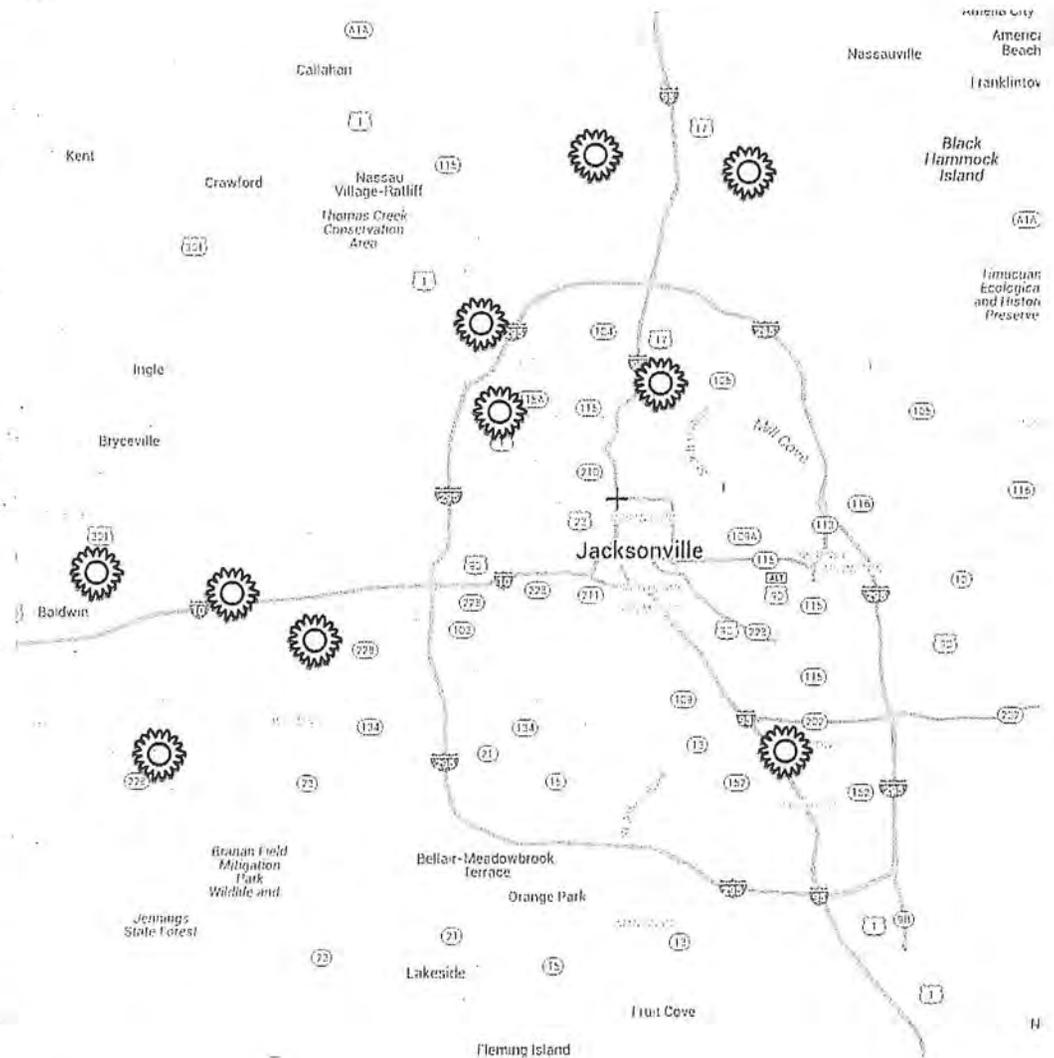


What are FL Municipal Utilities Doing?

- JEA adding 37 MW of distributed solar to its portfolio
- Lakeland proceeding to its goal of adding 24 MW of Solar PV into the mix by 2017
- OUC adding an additional 13 MW to its 6 MW Solar array at the Stanton Energy Center
- SECI planning a 2 MW facility for certain of its Member Co-ops for subsequent customer offerings

JEA Develops New Solar Farms

- 7 new PPAs for 31 MW ac
- Ranging from 2-7 MW ac
- Next: RFP for 5 MW ac to be issued
- Results: Solar portfolio to increase from 11 MW to 48 MWac
- First system generating by 2nd Q 2016
- Customer offerings being developed



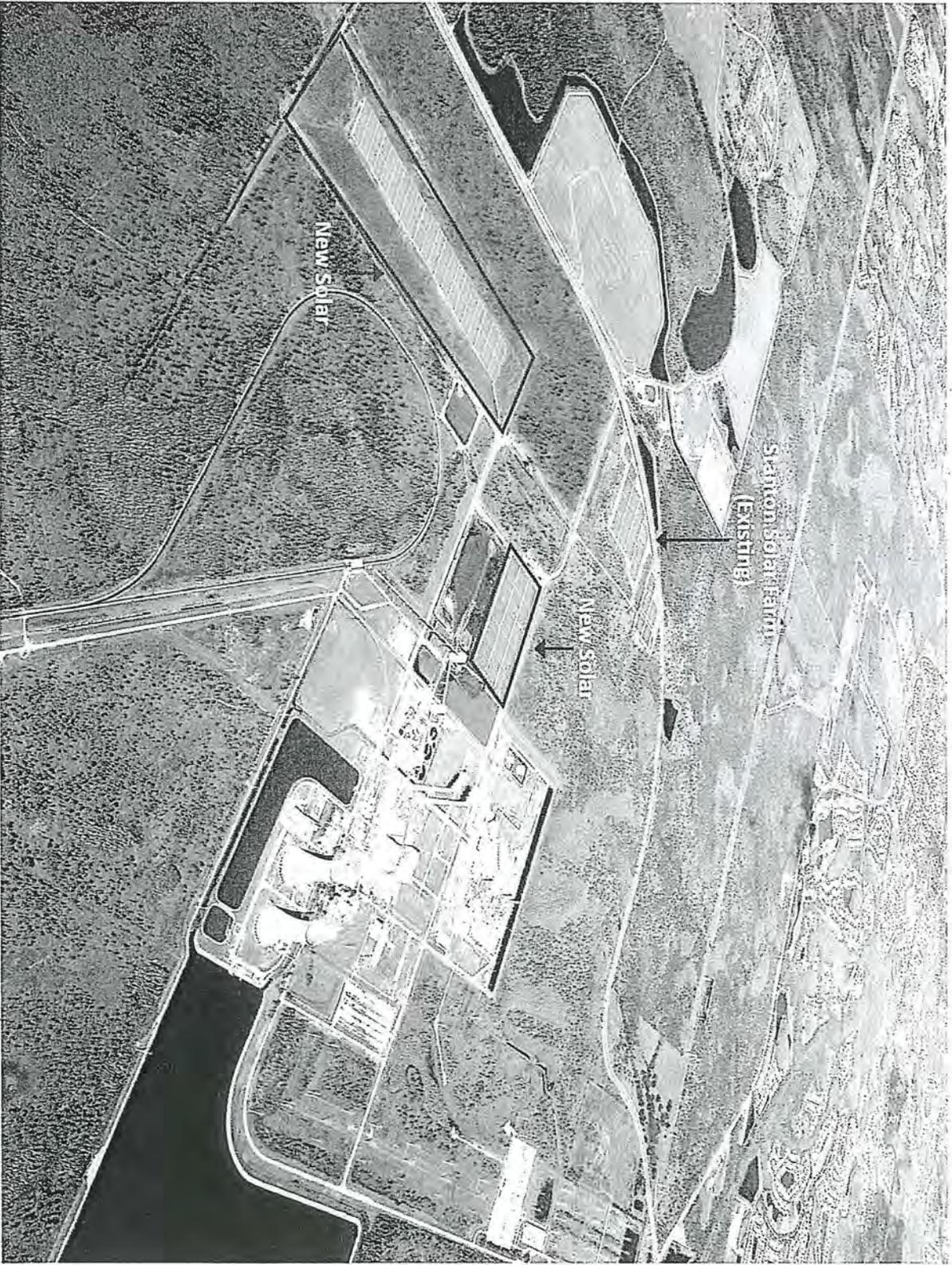
Lakeland Electric -- Airport 1 and 2



Lakeland Electric -- Early Experience with Large Scale Solar PV

Lakeland Center	Fixed	0.3	Apr-2010
Airport 1	1-axis	2.3	Jan-2012
Airport 2	1-axis	3.0	Sept-2012
Bella Vista	1-axis	6.0	Aug-2015
Airport 3	1-axis	5.0	Nov-2016
Main Street	1-axis	7.5	Apr-2017

OUC – Solar at Stanton Energy Center

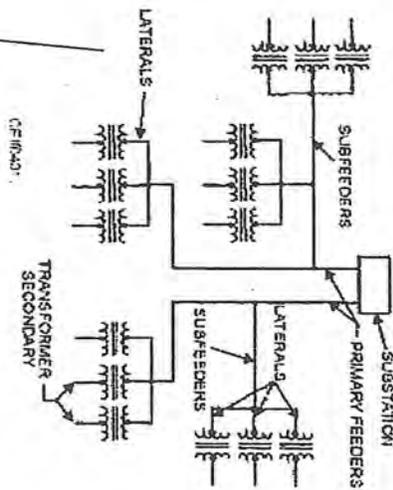


OUC Shows the Way with a Community Solar Program

Gardonia Center
Community
Solar Installation
400 kW @



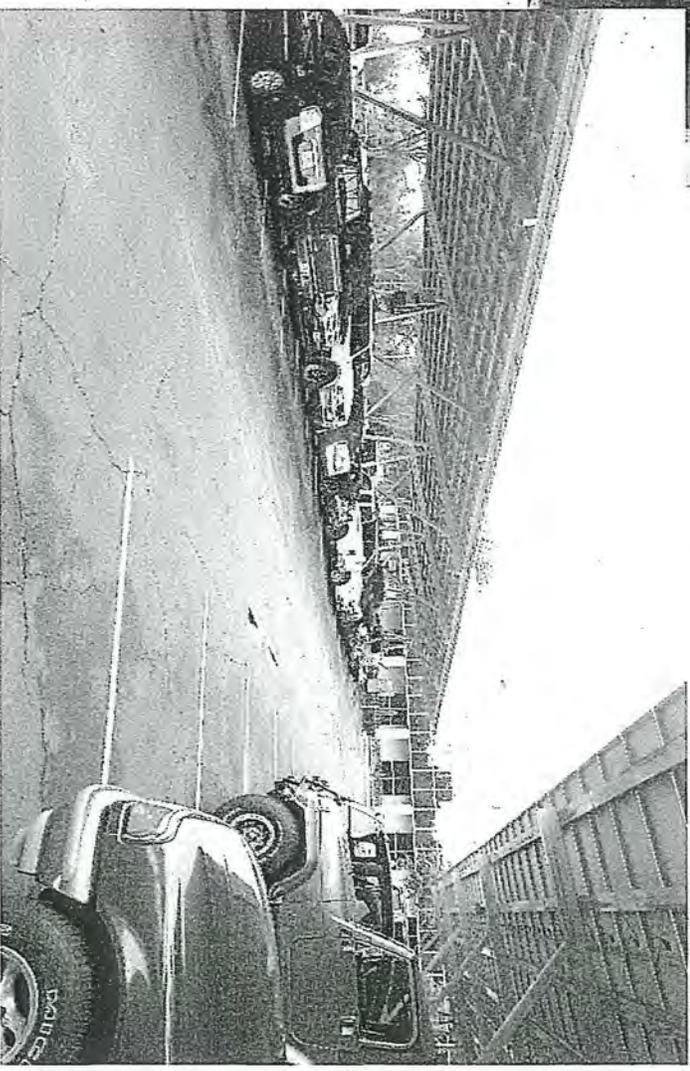
Utility Grid



Supporting Retail Customers



OUC's Gardenia Center - 400 kW dc



Questions?



Florida Municipal Power Agency

6-A)

Michele A. Jackson, P.E.
System Planning Manager

MEMORANDUM

TO: Utilities Commission of the City of Vero Beach
FROM: Michele Jackson
DATE: February 17, 2016
SUBJECT: Solar Photovoltaic Projects

Introduction

- The Florida Municipal Power Agency (FMPA) is currently soliciting interest among its 31 members to jointly develop a solar photovoltaic (Solar PV) project. The intent of this joint action solar project is to provide solar energy to participating cities in the most cost-effective manner possible.
- Prior to launching this initiative, FMPA staff researched the kind of solar PV projects being developed by utilities around the country including other Florida municipal electric utilities.
- Also, to make the business case for this initiative, staff researched the costs and benefits associated with building and owning a Solar PV project.
- The purpose of this memo is to provide general information on Solar PV projects to the Utility Commission.

Solar PV History

Solar PV technology has been around for nearly 60 years. Solar PV was developed in the 1950s and used primarily to provide electrical power for earth-orbiting satellites. In the 1970s, improvements in manufacturing, performance and quality of PV modules helped to reduce costs and opened up a number of opportunities for powering remote terrestrial applications, such as offshore signals. In the 1980s, photovoltaics became a popular power source for consumer electronic devices, including calculators, watches, radios, lanterns and other small battery-charging applications. International applications for PV systems to power rural health clinics, refrigeration, water pumping and telecommunications increased dramatically. Due to a steady decline in technology prices and with the assistance of federal and state subsidies, nearly 784,000 U.S. homes and business have “gone solar” as of December 2014.¹

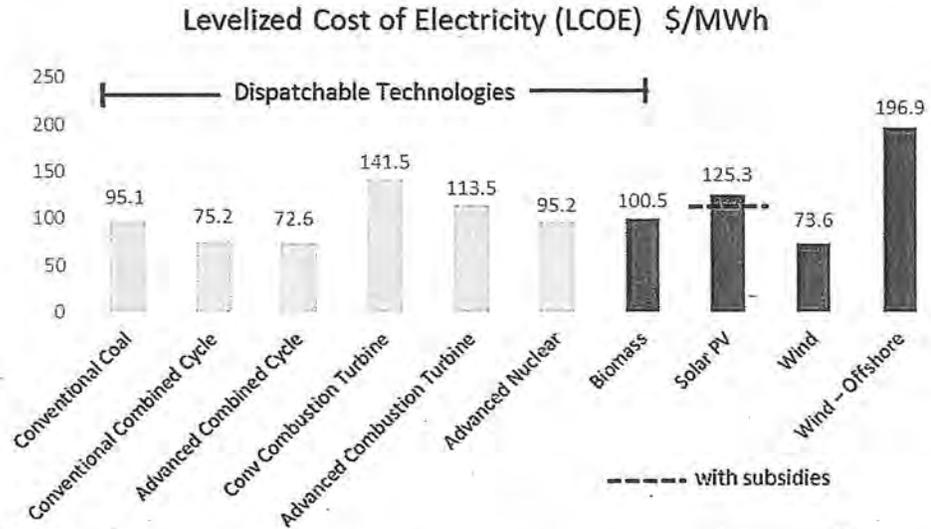
Solar Limitations

However, the high cost of PV modules and equipment, compared to conventional energy sources, is still the primary limiting factor for widespread adoption of solar PV for power applications. Figure 1 depicts how the *national average* cost of electricity from a utility-scale solar PV plant compares to the cost of electricity from other conventional generation technologies. As Figure 1 depicts, electricity from a solar PV

¹ From Solar Energy Industries Association, Solar Energy Facts: Q2 2015, published December 17, 2014.

plant can be expected to be roughly two times as expensive (or 173% higher, to be precise) as the electricity from an advanced natural gas combined cycle plant, such as FMPA's Cane Island Unit 4 and Treasure Coast Energy Center Unit 1.

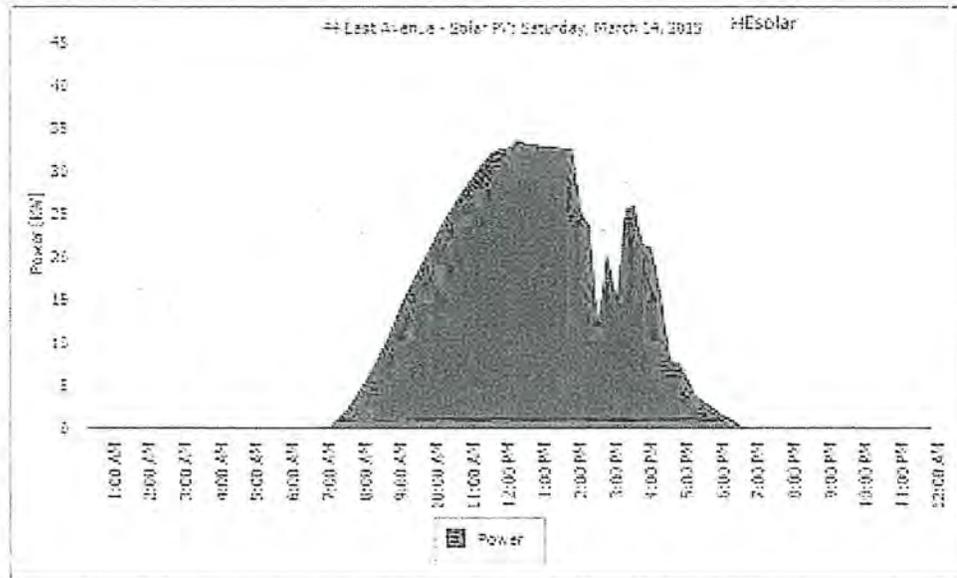
FIGURE 1
 National Average Levelized Cost of Electricity for Plants in Service in 2020



SOURCE: U.S. Energy Information Agency (EIA), 2015 Annual Energy Outlook, June 3, 2015. LCOE is in 2013 dollars based on a 2020 deployment of the technologies (2022 for Advanced Nuclear), a 30-year cost recovery period, and a weighted average cost of capital (WACC) of 6.1%.

But cost alone is not the only limiting factor to widespread deployment of solar PV power plants. These plants are “intermittent resources” in that they generate electricity only when the sun is shining. (See Figure 2.) Utilities need dispatchable, round the clock reliable generating resources to serve customers when they need electricity. While battery storage technologies are emerging and promise to store solar energy for round-the-clock dispatch of solar resources, these storage systems are currently very costly.

FIGURE 2
A Typical Solar PV Production Curve (with Cloud Cover from 2 pm – 4 pm)



Solar Initiatives

Florida’s nickname as the Sunshine State has drawn calls from solar proponents for more solar PV projects in the state. To promote solar energy, two separate Constitutional Amendments (see attachments) were proposed in Florida for the 2016 ballot. Figure 3 below shows the ballot titles and supporters for each amendment.

FIGURE 3
Proposed Solar Amendments to the Florida Constitution

	Option 1 Floridians for Solar Choice	Option 2 Consumers for Smart Solar
Ballot Title	Limits or Prevents Barriers to Local Solar Electricity Supply	Rights of Electricity Consumers Regarding Solar Energy Choices
Supporters	A coalition led by the Southern Alliance for Clean Energy, conservative organizations, retail federation, solar industry association and others. Financial supporters include companies in the solar industry.	A coalition of businesses, civic and faith-based organizations. Financial supporters include Florida’s investor-owned utilities.

Some distinctions between the two amendments are apparent and some are subtle.

- Option 1 includes the concept of “local solar electricity supply” from a “local solar electricity supplier.” In other words, an entity that is not subject to state or local utility regulation, nor subject to any restrictions of electric utility service territory.
- Option 2 establishes a right for consumers to own or lease solar equipment on their property for their own use.
- Both address ratemaking so that customers who install solar are not discriminately assessed “barrier” or extra fees (Option 1), and consumers that don’t install solar are not unfairly subsidizing those who do (Option 2).

The proposed amendment sponsored by the Floridians for Solar Choice did not gather enough signatures from voters as of the cut-off date of February 1, 2016, and this group is now working towards placement of their amendment on the 2018 ballot. The proposed amendment sponsored by the Consumers for Smart Solar did achieve enough signatures, and pending review by the Florida Supreme Court, may be placed on the 2016 ballot.

Solar Options

Rooftop Solar: The average cost for a residential, rooftop solar PV systems nationally is approximately \$30,000.² Actual costs for an individual homeowner will vary depending on the size of system installed and whether the homeowner receives any federal, state or local subsidies.

Not all customers can afford an investment in their own system, especially since the payback period typically takes a long time. In addition, not all customers are single-family homeowners, or if they are, their home may not be in an ideal location for sun exposure or structurally capable of an installation.

Community Solar: Many utilities are initiating a type of solar project that is known as community solar. A community solar project is when multiple entities (e.g., a utility and its retail customers) work together to fund a solar project and share the electricity output from the facility. When first implemented, community solar projects were built within the community that it was to serve, for example, within a neighborhood or for a homeowners association. That is, community solar projects were initially sized for tens of households (not hundreds or thousands), and located within close proximity to the customers receiving the output of the facility.

The Solar Electric Power Association (SEPA) conservatively estimates that there are more than 100 community solar programs in various stages of development within the U.S. Many of these programs are utility-initiated, although where the necessary policy environment exists, programs initiated by third-party developers and special purpose entities are growing.

Under the community solar program model, the sponsor builds a solar PV facility and offers subscriptions to consumers for the energy output of the system. These programs

² SolarNation.org website, “How much does a solar system cost these days?”

are accessible by all consumers, and can be targeted directly to renters, multi-family dwellers, and in some cases, lower income customers. In exchange for a subscription, which typically involves paying an on-going community solar rate for the subscribed amount of solar energy, the participant receives benefits, such as kWh offsets to its metered energy consumption.

The benefits of a utility-sponsored community solar program include:

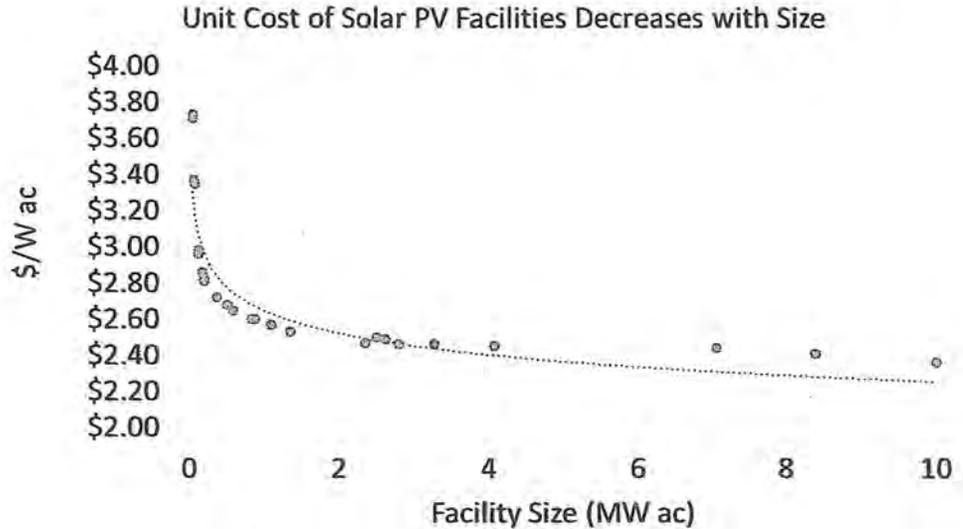
- Providing an option for customers who want to power their homes and businesses with solar energy.
- Improving integration of solar into the utility system, and retention of customers who might otherwise self-generate solar energy or buy it from a third-party provider.

The challenges of community solar programs include:

- The marketing efforts required to keep the program subscribed, rate design and billing system changes.
- The sponsoring utility needs to think through potential issues of cross-subsidization of a not-fully-subscribed program by customers who are not interested in investing in solar energy.
- With proper rate design and successful marketing, though, these projects can pay for themselves.

Utility-Scale Solar Farms: Utility-scale solar PV power plants, or solar farms as they are sometimes called, are generally large solar facilities with a capacity greater than 5 MW. Because of the scale of the power plant, solar energy can be produced at a lower cost per MWh than smaller systems. Figure 4 depicts the “economies of scale” associated with building larger solar PV facilities.

FIGURE 4
 Unit Cost to Build Various Sizes of Solar PV Facilities in Florida³



Because solar farms require a substantial amount of land, a solar farm may be built on the outskirts of a utility’s service territory, not in close proximity to retail customers. Many utilities are offering subscriptions to the output of the solar farm to their customers, thereby extending the traditional community solar model to include more customers (thousands of households) and more remote solar facilities. Some utilities opt not to provide specific customer offerings from their solar farm but provide the output of the solar farm to all of its retail customers as part of its energy mix.

Public Opinion

It seems that a growing percentage of Floridians like the concept of solar energy, even if it comes at a higher cost than conventional power generation.

In early 2015, Seminole Electric Cooperative, Inc. (SECI) asked its distribution co-ops across the state to survey their members’ interest in a solar project being considered by SECI with the understanding that the costs of solar generation may remain higher than those of traditional power sources.⁴ Among survey respondents, 42% said they would be willing to allocate between 5% and 20% of their monthly bill to a solar rate, and nearly 20% of those surveyed said they would be willing to assign greater than 20% of their electric bill to a solar rate. With regard to the magnitude of the solar rate, 43% of respondents said they would be willing to pay \$5 more for a 100 kWh block of energy, which means they would be willing to pay a 5 cent per kWh premium. Another important note from the survey is that 53% of respondents felt that those customers who

³ From Black & Veatch Draft Community Solar Cost Estimates prepared for FMPA, September 14, 2015

⁴ SECO News (a newsletter to co-op members) February 2015 (background) and April 2015 (survey results).

want to invest in renewable energy shouldn't be subsidized by those who don't want to invest in solar.

It is an important time for Florida's municipal electric utilities to evaluate offering solar options and strategically positioning themselves to have a role in serving the increasing desires of customers for solar energy.

Recent Solar Projects

Several municipal electric utilities in Florida have developed solar PV projects, including JEA in Jacksonville, Orlando Utilities Commission (OUC) and Lakeland Electric.

Pursuant to a policy adopted in 2014, JEA is currently entering into Power Purchase Agreements (PPAs) to purchase the output from solar PV facilities rated at 38 MW ac that are being developed within and throughout its service territory by third-party developers. JEA already has a PPA for the output from an existing 12 MW ac facility located in its service territory; thus, JEA's will be purchasing the output from solar farms with a total capacity of 50 MW ac by the end of 2017. JEA is currently developing customer offerings so that retail customers can choose whether to pay a premium for solar PV energy to power their homes or businesses.

Lakeland Electric entered into a PPA in 2008 for the output from solar PV facilities totally 25 MW. The PPA stipulated that the facilities were to be built and placed into service in phases. As of August 2015, Lakeland was taking the output from three solar farms with a combined capacity of approximately 12 MW. The remaining two farms are to be completed by the third-party developer in mid-2017. Lakeland adds the solar energy into its energy mix and adds the cost of the PPAs into its retail rate base.

OUC entered into a PPA in 2011 for the output from a 6 MW solar farm that a third party developed at OUC's Stanton Energy Center. In 2015, OUC entered into another PPA for the output from a 13 MW solar farm that is also currently being developed at OUC's Stanton Energy Center. Besides purchasing power from these large solar farms and adding the energy to its energy mix, OUC built and owns a 400 kW solar PV system that was installed on top of a parking shade structure at its Gardenia Energy Center. OUC developed this project as the first community solar project in Central Florida. OUC's customers were offered the opportunity to subscribe to the energy output of up to a 15 kW block and pay a fixed, subscription rate. The rate for the solar energy was higher than OUC's current energy rate. The community solar program was fully subscribed within 48 hours, and OUC currently has a list of customer waiting for a subscription.

Ownership vs. PPA

As described above, JEA, Lakeland Electric and OUC have opted to purchase the energy output from third-party developed, owned and maintained solar farms through Power Purchase Agreements (PPAs) rather than build and own these solar farms themselves. The reason for this is due to federal tax incentives for solar development,

including the 30% Investment Tax Credit⁵ and a 5-year accelerated depreciation deduction. Municipal electric utilities cannot take advantage of these incentives, but because of competition in the solar PV development market, municipals may find developers willing to share some of these benefits through attractive PPA pricing. The federal tax benefits are greater than the benefit that municipal utilities receive through a lower cost of financing, like tax-exempt municipal bonds.

Cost Analysis

FMPA retained an engineering firm, Black & Veatch, to provide an estimate of the cost to build solar PV facilities based on projects of which they are familiar.⁶ Figure 5 shows data from Black & Veatch for the cost of building fixed-tilt PV systems for the range of project sizes studied. The costs shown in Figure 5 are “all in” costs and include direct costs such as the cost of all equipment and hardware, and construction labor, interconnections costs and indirect costs. Indirect costs include costs for the land, permitting, studies and fees associated with the interconnection and the costs of financing a construction loan.

FIGURE 5
Cost to Build Fixed-Tilt Solar PV Facilities in Florida (\$2015)

Plant Size (dc)	Maximum Output (ac)	Total Installed Cost (\$/W dc)	Total Installed Cost (\$/W ac)	Approximate Total Installed Cost
54 kW	40 kW	\$2.76	\$3.73	\$149,000
675 kW	500 kW	\$1.99	\$2.68	\$1,341,000
1.35 MW	1 MW	\$1.90	\$2.57	\$2,566,000
5.4 MW	4 MW	\$1.82	\$2.45	\$9,819,000
13.5 MW	10 MW	\$1.75	\$2.36	\$23,629,000
40.5 MW	30 MW	\$1.69	\$2.28	\$68,461,000

FMPA then developed this information into an estimated annual projection of what it would cost FMPA to own and maintain facilities in a range of sizes, including the debt service (on municipal bonds sold in order to pay for construction and to pay interest during construction), on-going maintenance and necessary repair and replacement of major equipment components. Figure 6 shows the estimated year-by-year costs for a 10 MW ac solar PV plant with a commercial operation date of January 1, 2017, and an estimated 20-year life. We believe that these cost projections are relevant to any municipal entity with tax-exempt bond authority, like FMPA.

⁵ The Business Energy Investment Tax Credit (ITC) was recently amended in December 2015. For solar projects that begin construction prior to 12/31/2019 the investment tax credit is 30%. The ITC drops to 26% for solar projects that begin construction by 12/31/2020; to 22% for solar projects that begin construction by 12/31/2021; and to 10% for solar projects that begin construction thereafter.

⁶ See footnote 3.

FIGURE 6
Estimated FMPA Costs
 10 MW ac Fixed-Tilt Solar PV Plant in Florida (\$ Nominal)

Year	Debt Service (\$000)	O&M (\$000)	Repair & Replacement (\$000)	Total Annual Fixed Cost (\$000)	Unit Cost (\$/kW-mo)
2017	\$2,284	\$243	\$0	\$2,527	\$21.06
2018	\$2,284	\$249	\$0	\$2,532	\$21.10
2019	\$2,284	\$254	\$0	\$2,538	\$21.15
2020	\$2,284	\$260	\$0	\$2,544	\$21.20
2021	\$2,284	\$267	\$115	\$2,665	\$22.21
2022	\$2,284	\$273	\$118	\$2,674	\$22.29
2023	\$2,284	\$279	\$120	\$2,683	\$22.36
2024	\$2,284	\$286	\$123	\$2,693	\$22.44
2025	\$2,284	\$293	\$126	\$2,702	\$22.52
2026	\$2,284	\$299	\$129	\$2,712	\$22.60
2027	\$2,284	\$306	\$132	\$2,722	\$22.69
2028	\$2,284	\$314	\$135	\$2,733	\$22.77
2029	\$2,284	\$321	\$138	\$2,743	\$22.86
2030	\$2,284	\$329	\$142	\$2,754	\$22.95
2031	\$2,284	\$336	\$145	\$2,765	\$23.04
2032	\$2,284	\$344	\$148	\$2,776	\$23.14
2033	\$2,284	\$352	\$152	\$2,788	\$23.23
2034	\$2,284	\$361	\$155	\$2,800	\$23.33
2035	\$2,284	\$369	\$159	\$2,812	\$23.43
2036	\$2,284	\$378	\$163	\$2,824	\$23.54

Figure 7 depicts the amount of MWh generation expected from a 10 MW ac fixed-tilt solar PV facility in Florida, and the expected unit cost of solar energy from the facility on a \$/MWh basis:

FIGURE 7
Estimated Solar Energy Costs
 10 MW ac Fixed-Tilt Solar PV Plant in Florida (\$ Nominal)

Year	Expected Production (MWh)	Total Annual Fixed Cost (\$000)	Unit Cost (\$/MWh)
2017	20,435	\$2,527	\$123.65
2018	20,290	\$2,532	\$124.81
2019	20,122	\$2,538	\$126.14
2020	20,004	\$2,544	\$127.19
2021	19,835	\$2,665	\$134.37
2022	19,721	\$2,674	\$135.61
2023	19,591	\$2,683	\$136.97
2024	19,478	\$2,693	\$138.25
2025	19,296	\$2,702	\$140.05
2026	19,140	\$2,712	\$141.71
2027	19,016	\$2,722	\$143.16
2028	18,969	\$2,733	\$144.06
2029	18,781	\$2,743	\$146.06
2030	18,626	\$2,754	\$147.86
2031	18,500	\$2,765	\$149.46
2032	18,395	\$2,776	\$150.93
2033	18,254	\$2,788	\$152.73
2034	18,135	\$2,800	\$154.39
2035	18,135	\$2,812	\$155.06
2036	18,135	\$2,824	\$155.74
Levelized Cost of Electricity 20 yrs			\$138.21

As stated above, the annual cost and unit cost projections presented in Figures 6 and 7 are based on the “all-in” cost of constructing a solar PV facility. Also as stated above, municipal electric utilities may find it more cost-effective to enter into a Power Purchase Agreement (PPA) with a third-party developer who can take advantage of federal tax incentives for solar development rather than self-build and own the solar project. We believe that the cost projections presented here provide a benchmark against which FMPA and other municipal utilities can evaluate third-party proposals for PPAs.

Rate Impact

When assessing the impact to utility rates from the addition of a solar PV project to a utility's portfolio, or when designing rates for a subscription-based customer offering, the economic benefits associated with the solar PV project also have to be taken into account. For example, when the solar PV project is producing energy, the utility is avoiding energy costs by producing less energy from nuclear, natural gas and coal-fueled power plants. Also, a solar PV project allows a utility to avoid CO₂ emissions each year, which under a carbon-regulated environment results in improved emission target compliance.

Conclusion

Consumers are increasingly interested in powering their homes and businesses with solar. Municipal utilities can satisfy their customers who want solar energy—some of whom may, in the absence of a utility solar program, turn to self-generation—by developing a solar facility and offering customer programs. Or, municipal utilities can opt to forego the customer programs and add solar PV to its energy mix to deliver solar energy to all of its retail customers. The most cost-effective way to deliver solar energy is through utility-scale solar PV projects for the greatest economies of scale.

/mj
Attachments

CONSTITUTIONAL AMENDMENT PETITION FORM

Note:

- All information on this form, including your signature, becomes a public record upon receipt by the Supervisor of Elections.
- Under Florida law, it is a first degree misdemeanor, punishable as provided in s. 775.082 or s. 775.08, Florida Statutes, to knowingly sign more than one petition for an issue. [Section 104.185, Florida Statutes]
- If all requested information on this form is not completed, the form will not be valid.

Your Name: _____
(Please Print Name as it appears on your Voter Information Card)

Your Address: _____

City: _____ Zip: _____ County: _____

Please change my legal residence address on my voter registration record to the above residence address (check box, if applicable).

Voter Registration Number: _____ (or) Date of Birth _____

I am a registered voter of Florida and hereby petition the Secretary of State to place the following proposed amendment to the Florida Constitution on the ballot in the general election:

BALLOT TITLE: Limits or Prevents Barriers to Local Solar Electricity Supply

BALLOT SUMMARY: Limits or prevents government and electric utility imposed barriers to supplying local solar electricity. Local solar electricity supply is the non-utility supply of solar generated electricity from a facility rated up to 2 megawatts to customers at the same or contiguous property as the facility. Barriers include government regulation of local solar electricity suppliers' rates, service and territory, and unfavorable electric utility rates, charges, or terms of service imposed on local solar electricity customers.

ARTICLE AND SECTION BEING CREATED OR AMENDED: Add new Section 29 to Article X

FULL TEXT OF PROPOSED AMENDMENT:

Section 29. Purchase and sale of solar electricity. –

(a) PURPOSE AND INTENT. It shall be the policy of the state to encourage and promote local small-scale solar-generated electricity production and to enhance the availability of solar power to customers. This section is intended to accomplish this purpose by limiting and preventing regulatory and economic barriers that discourage the supply of electricity generated from solar energy sources to customers who consume the electricity at the same or a contiguous property as the site of the solar electricity production. Regulatory and economic barriers include rate, service and territory regulations imposed by state or local government on those supplying such local solar electricity, and imposition by electric utilities of special rates, fees, charges, tariffs, or terms and conditions of service on their customers consuming local solar electricity supplied by a third party that are not imposed on their other customers of the same type or class who do not consume local solar electricity.

(b) PURCHASE AND SALE OF LOCAL SMALL-SCALE SOLAR ELECTRICITY.

(1) A local solar electricity supplier, as defined in this section, shall not be subject to state or local government regulation with respect to rates, service, or territory, or be subject to any assignment, reservation, or division of service territory between or among electric utilities.

(2) No electric utility shall impair any customer's purchase or consumption of solar electricity from a local solar electricity supplier through any special rate, charge, tariff, classification, term or condition of service, or utility rule or regulation, that is not also imposed on other customers of the same type or class that do not consume electricity from a local solar electricity supplier.

(3) An electric utility shall not be relieved of its obligation under law to furnish service to any customer within its service territory on the basis that such customer also purchases electricity from a local solar electricity supplier.

(4) Notwithstanding paragraph (1), nothing in this section shall prohibit reasonable health, safety and welfare regulations, including, but not limited to, building codes, electrical codes, safety codes and pollution control regulations, which do not prohibit or have the effect of prohibiting the supply of solar-generated electricity by a local solar electricity supplier as defined in this section.

(c) DEFINITIONS. For the purposes of this section:

(1) "local solar electricity supplier" means any person who supplies electricity generated from a solar electricity generating facility with a maximum rated capacity of no more than 2 megawatts, that converts energy from the sun into thermal or electrical energy, to any other person located on the same property, or on separately owned but contiguous property, where the solar energy generating facility is located.

(2) "person" means any individual, firm, association, joint venture, partnership, estate, trust, business trust, syndicate, fiduciary, corporation, government entity, and any other group or combination.

(3) "electric utility" means every person, corporation, partnership, association, governmental entity, and their lessees, trustees, or receivers, other than a local solar electricity supplier, supplying electricity to ultimate consumers of electricity within this state.

(4) "local government" means any county, municipality, special district, district, authority, or any other subdivision of the state.

(d) ENFORCEMENT AND EFFECTIVE DATE. This amendment shall be effective on January 3, 2017.

Date: _____ X _____

(Date of signature)

(Signature of registered voter)

Initiative petition sponsored by Floridians for Solar Choice, Inc., 120 E. Oakland Blvd., Suite 105, Ft. Lauderdale, FL 33334

If paid petition circulator is used:

Circulator's Name _____

Circulator's Address _____

For official use only:

Serial number: 14-02

Date approved: 12/23/2014

CONSTITUTIONAL AMENDMENT PETITION FORM

Note:

- All information on this form, including your signature, becomes a public record upon receipt by the Supervisor of Elections.
- Under Florida law, it is a first degree misdemeanor, punishable as provided in s. 775.082 or s. 775.08, Florida Statutes, to knowingly sign more than one petition for an issue. [Section 104.185, Florida Statutes]
- If all requested information on this form is not completed, the form will not be valid.

Your name: _____
Please Print Name as it appears on your Voter Information Card

Your address: _____

City _____ Zip _____ County _____

Please change my legal residence address on my voter registration record to the above residence address (check box, if applicable).

Voter Registration Number _____ or Date of Birth _____

I am a registered voter of Florida and hereby petition the Secretary of State to place the following proposed amendment to the Florida Constitution on the ballot in the general election:

BALLOT TITLE: Rights of Electricity Consumers Regarding Solar Energy Choice

BALLOT SUMMARY: This amendment establishes a right under Florida's constitution for consumers to own or lease solar equipment installed on their property to generate electricity for their own use. State and local governments shall retain their abilities to protect consumer rights and public health, safety and welfare, and to ensure that consumers who do not choose to install solar are not required to subsidize the costs of backup power and electric grid access to those who do.

ARTICLE AND SECTION BEING CREATED OR AMENDED: Add new Section 29 to Article X

FULL TEXT OF THE PROPOSED CONSTITUTIONAL AMENDMENT:

Section 29 – Rights of electricity consumers regarding solar energy choice. –

- (a) ESTABLISHMENT OF CONSTITUTIONAL RIGHT. Electricity consumers have the right to own or lease solar equipment installed on their property to generate electricity for their own use.
- (b) RETENTION OF STATE AND LOCAL GOVERNMENTAL ABILITIES. State and local governments shall retain their abilities to protect consumer rights and public health, safety and welfare, and to ensure that consumers who do not choose to install solar are not required to subsidize the costs of backup power and electric grid access to those who do.
- (c) DEFINITIONS. For purposes of this section, the following words and terms shall have the following meanings:
- (1) "consumer" means any end user of electricity regardless of the source of that electricity.
- (2) "solar equipment," "solar electrical generating equipment" and "solar" are used interchangeably and mean photovoltaic panels and any other device or system that converts sunlight into electricity.
- (3) "backup power" means electricity from an electric utility, made available to solar electricity consumers for their use when their solar electricity generation is insufficient or unavailable, such as at night, during periods of low solar electricity generation or when their solar equipment otherwise is not functioning.
- (4) "lease," when used in the context of a consumer paying the owner of solar electrical generating equipment for the right to use such equipment, means an agreement under which the consumer pays the equipment owner/lessor a stream of periodic payments for the use of such equipment, which payments do not vary in amount based on the amount of electricity produced by the equipment and used by the consumer/lessee.
- (5) "electric grid" means the interconnected electrical network, consisting of power plants and other generating facilities, transformers, transmission lines, distribution lines and related facilities, that makes electricity available to consumers throughout Florida.
- (6) "electric utility" means any municipal electric utility, investor-owned electric utility, or rural electric cooperative which owns, maintains, or operates an electric generation, transmission, or distribution system within the state.
- (d) EFFECTIVE DATE. This section shall be effective immediately upon voter approval of this amendment.

X

DATE OF SIGNATURE

SIGNATURE OF REGISTERED VOTER

Initiative petition sponsored by Consumers for Smart Solar, 2640-A Mitcham Drive, Tallahassee, FL 32308

If paid petition circulator is used:

Circulator's name _____

Circulator's address _____

For Official Use Only:

Serial Number: 15-17

Date Approved: 7/21/2015

Philo, Sherri

From: Vock, Tammy
Sent: Tuesday, July 05, 2016 2:07 PM
To: Philo, Sherri
Subject: FW: Retail Customer Solar Survey
Attachments: BOD 8c Update on Solar Survey 06 13 16.pdf

From: O'Connor, Jim
Sent: Tuesday, June 21, 2016 3:40 PM
To: Vock, Tammy
Cc: Kramer, Jay; Old, Randy; Turner, Pilar; Winger, Richard; Howle, Harry
Subject: FW: Retail Customer Solar Survey

Tammy
Pass on to the Utility and Finance Commissions

James R. O'Connor
City Manager
City of Vero Beach Florida
772 978-4710

From: Michele Jackson [<mailto:Michele.Jackson@fmpa.com>]
Sent: Tuesday, June 21, 2016 11:21 AM
To: O'Connor, Jim
Cc: Sharon Smeenk; Mark McCain
Subject: Retail Customer Solar Survey

Jim,
Thanks for participating in our Solar Survey telephonic workshop on May 18. We really appreciate your input and guidance on what the City of Vero Beach would like to accomplish with a survey of retail customer interests in solar energy. Based on your input, and further research that staff have done, we're presenting our recommendation to the FMPA Board of Directors on Thursday – memo attached. Any additional feedback is always welcome.
Again, thanks for your help!

Michele A. Jackson, P.E.
System Planning Manager
Florida Municipal Power Agency
(321) 239-1013



AGENDA PACKAGE MEMORANDUM

TO: Board of Directors
FROM: Sharon Smeenk, Mark McCain and Michele Jackson
DATE: June 14, 2016
ITEM: 8c – Update on Retail Customer Survey on Solar Energy

Strategic Relevance **FMPA’s Relevant Strategic Goals**
1. Aa: Propose at least one new, power supply or transmission project.

Introduction

- FMPA’s Board of Directors approved the use of the Agency’s Development Fund for the investigation of a joint-action solar photovoltaic (PV) project.
- The first development activity is to survey retail electric customers to gauge their support for a solar PV project. The survey results are intended to help FMPA’s members decide whether or not to participate in the project.
- The purpose of this memorandum is to provide FMPA’s Board of Directors with an update on staff’s discussions with two market research firms and a municipal electric utility that have conducted similar surveys on solar. In addition, the staff seeks feedback related to survey costs.

Background

FMPA staff held two conference calls with interested members to elicit input regarding the survey objectives and methodology. An overview of the feedback received during these calls was presented May 19, 2016, during the Board of Directors’ meeting and is summarized below:

General feedback:

- Keep the survey simple.
- Survey results should be statistically valid for sound decision making.
- The survey should be conducted by a third-party, rather than by each utility.
- A standard set of survey questions is preferred, but an option for some customization could be desirable/necessary.

The survey should help participating members determine:

- Are enough customers interested in solar?
- Who is most likely to be interested in solar?
- How much more, if any, are customers willing to pay for solar?
- Whether it is important for solar be located/visible in the community

Additional information to be obtained from the survey:

- Demographic information about the respondents.
- Information to assist in marketing a potential community solar project, such as identifying motivators and barriers to customer participation.

With this guidance from members, staff took the following steps:

1. Researched what other municipal electric utilities have done about surveying retail customers for possible interest in solar PV.
2. Spoke with two market research firms that have conducted surveys for municipal electric utilities to gauge customer interest in solar PV.
3. Based on the information gathered from municipal utilities and research firms, evaluated the requirements for procuring market research services.

The results from these investigations are discussed below.

Research Advice

FMPA reached out to members of the American Public Power Association (APPA) via three different APPA Listservers. FMPA asked other APPA members from the Energy Services, Joint Action Agency and Communications Listservers about their experiences conducting surveys of their customers regarding solar energy and their experience with research firms.

We received nine responses to our request for information. Several APPA members shared lessons learned from their survey projects, and several offered names of research firms that they had worked with to conduct the surveys. Based on the responses, FMPA staff reached out to two of the recommended research firms to obtain initial input on our proposed survey approach and objectives.

Highlights from the conversations with research firms included the following:

- A telephone survey is recommended to assure statistical accuracy. A phone survey allows the market research firm to obtain a truly random sample of the utility's customers assuring that the responses are representative of the customer base. A voluntary survey, like an email or online survey that allows respondents to "self-select" does not provide a truly random sample that could be said to be statistically accurate and representative of the survey population. Internet and email surveys tend to draw responses from people at the extremes of an issue and not the people in the middle.
- To provide market research for each utility that would help them decide whether or not to participate in the solar PV project, it is recommended to do individual utility surveys. The shortcoming of doing one statewide survey is that given the diversity of communities and the small sample size that would result from each community, the margin of error rate would be high relative to each community, undermining confidence in the survey results upon which a business decision is expected to be made.

- A standard set of survey questions can be developed for use in each community survey, which could create economies in the survey development process and enable comparisons of survey results among utilities, which might be of interest. There could be an option for some survey customization, if necessary.
- The cost of the survey is a function of the number of surveys conducted and the length of the survey. One researcher provided the following general advice:
 - For communities with more than 4,000 customer accounts, the standard number of surveys required to obtain a $\pm 5\%$ margin of error is 400 completed surveys. Completing 600 surveys would improve the margin of error to $\pm 4\%$. For communities with less than 4,000 customers, the number of completed surveys can be reduced to 275 or 300.
 - For phone surveys, every 100 words in the script equates to approximately one minute on the phone. A short survey is 4-5 minutes. A medium survey is 6-8 minutes. The maximum recommended survey length is 9-12 minutes. Beyond 12 minutes, it gets increasingly difficult to complete surveys.
 - Pricing for all-inclusive survey services (including developing survey objectives, creating survey questions, conducting the surveys, compiling the survey results and interpreting the survey results in a report) could range from \$3,000-\$5,000 (per FMPA member city) for a short survey up to \$10,000-\$12,000 (per member) for the longest recommended survey.
 - If several FMPA cities participate in the survey, and if they all agree to use the same survey provider, the market research firm could be more aggressive with pricing, depending on the size of the group.
 - Commercial customers are more difficult to survey than residential customers. Knowing how many completed commercial customer surveys would be required, if any, is a factor when estimating cost.

Municipal Advice

One APPA member that responded to our APPA Listserv request was Austin Energy (AE) in Texas. AE has a department called Data Analytics & Business Intelligence. They perform some research in-house and contract with a consumer research firm for other studies. The AE representative offered to discuss the details of FMPA's project and answer any question. Highlights from our conversation with AE included the following:

- AE has email addresses for more than 60% of its customers, so they sometimes perform email surveys in-house. They treat email surveys just like telephone surveys, pulling random samples to ensure a statistically valid sample. They do not use "open links" for surveys because that allows anyone with the link to complete the survey, so it is not statistically valid. AE contracts with a research firm for telephone surveys and focus groups.

- AE typically targets 400 completed surveys for its sample size.
- AE is satisfied with surveys that have a $\pm 5\%$ margin of error. They feel this is valid, and the extra expense to reduce the error rate is not worthwhile.
- AE tries to keep its surveys at 12 minutes or less. The AE representative felt that a 4-5 minute survey might be too short for a survey like this. The representative said a short survey can be valuable for baseline information, but it leaves unanswered questions. If the city then decides to commission another survey, it would be difficult to correlate the results of the two surveys because they will have different respondents.
- AE confirmed that surveying commercial customers is more difficult than residential customers. In a solar survey AE is doing at this time, they are not surveying commercial customers. Many commercial customers are bottom-line oriented, so any added cost for solar PV is not attractive.
- When asking customers about how much more they might be willing to pay for renewable energy, AE finds it is better to provide the options in dollars rather than percentages. AE's typical survey script states, "The average customer bill is \$X. Would you be willing to pay \$X more?" AE finds it is helpful to put the bill in context and then talk about dollars.
- AE confirmed that one byproduct of surveying can be an educational element. AE, like other utilities, hears from its customers that the wind and sun are free, so customers do not understand why renewable energy should cost more. Early in AE's survey, they have included a question about a customer's likelihood of participating in a solar project. After providing information about why renewables cost more and asking questions about how much more a customer is willing to pay, AE has included another questions about a customer's likelihood of participating in a solar project. These bookend questions are referred to as "uninformed" opinion and "informed" opinion.
- In surveys, AE often asks the respondent about their participation in existing conservation or renewable programs. AE said this gives them an indication what the customer might actually do, not just what the customer aspires to do.

Development Fund

The Board of Directors has authorized the use of the Agency's Development Fund to pay costs associated with the survey process prior to commencing further development activities for the joint-action solar PV project.

In the request for approval to use Development Funds, staff had estimated that a survey would cost approximately \$20,000. However, given the new information provided by survey experts, which is that the survey process for a diverse group of communities should consist of multiple individual member phone surveys instead of a large web-based group survey, staff now estimates, depending on which members participate, the survey effort could cost on average \$9,000 to \$10,000

per FMPA member city. Therefore, staff are seeking additional guidance from the Board of Directors on two questions:

1. Will the Board authorize the use of the Agency’s Development Funds for individual member phone surveys at this higher level of expenditure?
2. Should the Development Funds be used for surveys for all FMPA members who are interested in conducting such a survey, including those that have not yet expressed an interest in the FMPA joint-action solar PV project? Or should the Development Funds only be used to cover costs for conducting surveys for those members who have expressed an interest in FMPA joint-action solar PV project?

Staff recognize that members that are not interested in participating in the potential FMPA joint-action solar PV project might find value in utilizing the selected survey firm to conduct surveys for their utility, as well as participating with other FMPA members in the design of common survey elements, and learning from other Florida municipal utilities’ survey results. Also, staff recognize that the interest expressed by certain FMPA members in a potential joint-action solar PV project is a non-binding interest, and that the survey results may be the determining factor in whether a member participates in the potential project.

Next Steps

At a potential average cost of \$9,000 to \$10,000 per FMPA member city, and assuming at least five members are interested in conducting a survey, FMPA’s procurement policy would require issuance of a Request for Proposals (RFP) for these services. Thus, staff recommend that we issue an RFP to select a research firm. We anticipate that the selected firm will:

- Assist in developing survey objectives.
- Identify survey population(s).
- Assist in developing survey questions.
- Conduct the survey.
- Compile survey data and prepare a report.
- Provide insight and interpretation of survey results.

As a next step, FMPA staff would like to identify those member utilities that want to survey their customers as part of the RFP. Also, FMPA staff are seeking representatives from interested member utilities to serve on a Task Force to provide input to assist in finalizing the RFP, evaluating the proposals received, and working with the survey firm to develop and conduct the survey(s).

Recommended Action

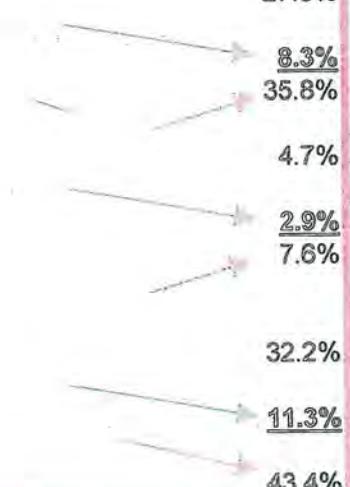
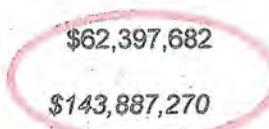
For information only. No action is requested, but feedback on use of the Development Funds is requested.

Transfers to City of Vero Beach General Fund--"Profits" and General Fund Admin Chargebacks

Source: City of Vero Beach Budget Books

From the Electric and Water & Sewer Funds

Fund	Budget Year	2009-2010	2010-2011	2011-2012	2012-2013	2013-2014	2014-2015	2015-2016	Since 10/01/2009	
									Total	Average
Electric	"Profit" Transfer	\$5,893,000	\$5,598,350	\$5,766,213	\$5,612,400	\$5,511,270	\$5,640,000	\$5,440,000	\$39,461,233	\$5,637,319
	% Change from Previous Year	0.0%	-5.3%	2.9%	-2.7%	-1.8%	2.3%	-3.7%		
	GF Admin Chargeback	\$1,775,100	\$1,690,800	\$1,749,200	\$1,701,127	\$1,589,541	\$1,704,212	\$1,786,112	\$12,006,192	\$1,718,179
	% Change from Previous Year	-1.0%	-5.0%	3.3%	-2.8%	-7.0%	6.7%	5.1%	\$51,467,425	<=Electric Total
Water & Sewer (W&S)	"Profit" Transfer	\$859,950	\$859,950	\$1,113,566	\$1,001,281	\$970,380	\$970,000	\$950,000	\$6,725,127	\$960,732
	% Change from Previous Year	0.0%	0.0%	22.8%	-11.2%	-3.2%	0.0%	-2.1%		
	GF Admin Chargeback	\$685,300	\$646,300	\$728,800	\$543,372	\$478,550	\$488,233	\$634,575	\$4,205,130	\$600,733
	% Change from Previous Year	-7.8%	-6.0%	11.3%	-34.1%	-13.5%	2.0%	23.1%	\$10,930,257	<=W&S Total
Total of Electric and Water & Sewer	"Profit" Transfer	\$6,752,950	\$6,458,300	\$6,879,779	\$6,613,681	\$6,481,650	\$6,610,000	\$6,390,000	\$46,186,360	\$6,598,051
	% Change from Previous Year	0.0%	-4.6%	6.1%	-4.0%	-2.0%	1.9%	-3.4%		
	GF Admin Chargeback	\$2,460,400	\$2,337,100	\$2,478,000	\$2,244,499	\$2,068,191	\$2,192,445	\$2,430,687	\$16,211,322	\$2,315,903
	% Change from Previous Year	-2.9%	-5.3%	5.7%	-10.4%	-8.5%	5.7%	9.8%	\$62,397,682	\$8,913,955
Total	\$9,213,350	\$8,795,400	\$9,357,779	\$8,858,180	\$8,549,841	\$8,802,445	\$8,820,687			
General Fund Total Budget	\$21,373,422	\$20,211,313	\$20,709,456	\$19,451,825	\$19,407,193	\$20,693,522	\$22,040,739	\$143,887,270	\$20,555,324	
Electric "Profit" as % of GF Budget	27.6%	27.7%	27.8%	28.9%	28.4%	27.3%	24.7%		27.5%	
Electric GF Admin Chargebacks as % of GF Budget	8.3%	8.4%	8.4%	8.7%	8.2%	8.2%	8.1%		8.3%	
Total	35.9%	36.1%	36.3%	37.6%	36.6%	35.5%	32.8%		35.8%	
W&S "Profit" as % of GF Budget	4.0%	4.3%	5.4%	5.1%	5.0%	4.7%	4.3%		4.7%	
W&S GF Admin Chargebacks as % of GF Budget	3.2%	3.2%	3.5%	2.8%	2.5%	2.4%	2.9%		2.9%	
Total	7.2%	7.5%	8.9%	7.9%	7.5%	7.0%	7.2%		7.6%	
Electric and W&S "Profit" as % of GF Budget	31.6%	32.0%	33.2%	34.0%	33.4%	31.9%	29.0%		32.2%	
Electric and W&S GF Admin Chargebacks as % of GF Budget	11.5%	11.6%	12.0%	11.5%	10.7%	10.6%	11.0%		11.3%	
Total GF Budget by Electric and W&S Funds	43.1%	43.5%	45.2%	45.5%	44.1%	42.5%	40.0%		43.4%	



Analysis of Potential Rate Reductions Pre Sale from Finance Commission Chairman

Item 10 – Lower allocation of G and A from the GF to VBE

Background/Analysis: The allocation of general and administrative costs from the City's general fund is used to assign the full cost of Electric Utility operations to the Electric Utility Enterprise fund. None of the City's enterprise funds has its own direct cost centers for functions such as payroll, human resources, cashiering, accounts payable, purchasing, warehouse, attorneys, etc. However, none of the Enterprise funds could function without these internal services. As a result, the G&A allocation is intended to allocate the costs of 'central services' on an appropriate basis to various other City funds, in order to more accurately reflect the true costs of providing each service or function.

Where possible, in accordance with Government Finance Officers Association (GFOA) recommended 'best practices', the allocation of costs to the various enterprise funds is based on objective 'cause and effect' factors. For instance:

- The allocation of cashiering expenses is based on % of total cash receipts
- The allocation of human resources costs is based on % of total employees
- The allocation of IT support costs is based on % of total computers

For other areas, such as the City Manager or City Clerk, the allocation of costs is based on an estimated percentage of time expended and is reviewed annually during budget preparation.

The staff recommends that we continue to budget a General and Administrative allocation for internal services to all enterprise funds, based on the appropriate factors updated annually.

Strengths: Lowering the G&A allocation would lower the Electric Utility costs.

Weaknesses: Arbitrarily lowering allocated G&A charges would be contrary to the intent of full cost accounting for enterprise funds.

Opportunities: None anticipated.

Threats: Lowering the G&A allocation to the Electric Utility would increase general fund expenditures, impacting either taxes or service levels.

**6/25/14 Finance Commission *Motion: Keep same overhead (G&A) allocation.*
*Motion passed 5-0.***

**7/22/14 Utility Commission *Motion: Keep same overhead (G&A) allocation.*
*Motion passed 5-0.***

16-17 ADMINISTRATION CHARGE
GENERAL FUND SUMMARY

7/7/2016

DEPT #	NAME	TOTAL BUDGET	GEN FUND 001	ELEC 401	W/S 421	AIRPORT 441	MARINA 451	S/W 461	CEMETERY 603
0100	CITY COUNCIL	93,222	44,187	27,967	18,644	1,864	466	93	0
0200	CITY CLERK	470,597	160,865	138,479	138,479	4,616	4,616	462	23,080
0300	CITY MGR	337,468	136,337	134,987	59,057	5,062	1,687	337	0
0600	CITY HALL	136,240	23,409	93,047	12,918	2,883	1,295	2,480	208
1100	CITY ATTY	528,750	274,950	79,313	74,025	79,313	10,575	5,288	5,288
1200	HUMAN RESOURCES	414,757	231,839	85,078	56,364	12,762	3,190	24,460	1,063
1300	FINANCE	840,244	224,012	459,224	102,579	23,544	12,147	16,226	2,512
1301	INFO TECH	745,374	410,967	246,065	66,428	7,869	4,905	8,169	971
1302	PURCHASING	431,012	139,648	161,630	107,753	17,240	3,448	1,293	0
1303	WAREHOUSE	279,435	35,921	209,889	27,724	1,816	454	3,480	151
1700	PLANNING	586,483	568,889	0	5,865	11,730	0	0	0
2006	ENG GIS	CHARGED AS INTERFUND SERVICES FOR ACTUAL WORK PERFORMED							
3304	PW:ADMIN	539,108	478,210	0	0	0	0	60,898	0
3309	PW:FACILITIES	CHARGED AS INTERFUND SERVICES FOR ACTUAL WORK PERFORMED							
4000	NON-DEPTL	101,900	52,660	42,399	3,941	892	223	1,710	74
	TOTAL ALLOCATION	5,504,590	2,781,893	1,678,077	673,778	169,591	43,006	124,897	33,347
	Percent of Total		50.54%	30.49%	12.24%	3.08%	0.78%	2.27%	0.61%
	DEPRECIATION GEN FUND/GOVT ASSETS	558,899	282,455	170,381	68,411	17,219	4,367	12,681	3,386
	TOTAL CHGS W/ DEPR	6,063,489	3,064,348	1,848,458	742,189	186,810	47,373	137,578	36,733

FY 16-17 GENERAL FUND REVENUE TOTAL 2,999,141

FY 15-16 GENERAL FUND REVENUE TOTAL 2,792,296
DIFFERENCE 206,845



ALLOCATION FACTORS

NUMBER OF FULL TIME EMPLOYEES

	Budgeted Positions FY 16-17	Percentage of Total Employees
GENERAL FUND	218	55.9%
ELECTRIC UTILITY	80	20.5%
WATER & SEWER UTILITY	53	13.6%
AIRPORT	12	3.1%
MARINA	3	0.8%
SOLID WASTE	23	5.9%
CEMETERY	1	0.3%
TOTAL	390	100.0%

PRIOR YEAR AUDITED OPERATING EXPENSES - ALL FUNDS

	TOTAL OPERATING EXPENSES	PERCENTAGE OF TOTAL EXPENSES
GENERAL FUND	19,840,377	17.2%
ELECTRIC UTILITY	78,862,299	68.3%
WATER & SEWER UTILITY	10,948,776	9.5%
AIRPORT	2,443,903	2.1%
MARINA	1,097,275	1.0%
SOLID WASTE	2,101,695	1.8%
CEMETERY	176,102	0.2%
TOTAL	115,470,427	100.0%

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ALLOCATION FACTORS

CASH AND REVENUE HANDLING (FOR CASHIERS)

	Last Year Actual from CAFR	% of Total Cash Handled
Total General Fund Revenues	13,845,135	
Taxes	(8,327,118)	
Charges for Services- Admin	(2,548,903)	
Charges for Services - Airport	(91,670)	
Intergovernmental revenue	(1,645,349)	
General Fund Interest	(143,498)	
Approximate General Fund Cash/Rev	1,088,597	0.93%
Electric Cash Received from Customers	92,942,252	79.21%
WaterSewer Cash Received from Customers	15,953,248	13.60%
Airport Cash Received from Customers	2,833,787	2.42%
Marina Cash Received from Customers	1,569,876	1.34%
Solid Waste Cash Received from Customers	2,746,616	2.34%
Cemetery Charges for Services	195,037	0.17%
Total Cash Handled	117,329,413	100.00%

	TOTAL NUMBER OF COMPUTERS	PERCENTAGE OF TOTAL COMPUTERS
GENERAL FUND	300	62.2%
ELECTRIC UTILITY	106	22.0%
WATER & SEWER UTILITY	59	12.2%
AIRPORT	8	1.7%
MARINA	4	0.8%
SOLID WASTE	5	1.0%
CEMETERY	-	0.0%
TOTAL	482	100.0%

Source:

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DEPRECIATION

Gen Govt Assets

	\$	Percent of Total
General Government	18,778,264	27.2%
Highways, Drainage & Signs	39,371,994	57.1%
Cemetery	1,046,547	1.5%
Property Maint Equipment	8,166,240	11.9%
CIP	1,549,127	2.2%
Total	68,912,172	100.0%

General Govt Depreciation Exp	2,051,039	p. 67CAFR
Allocated Depreciation Expense	558,899	

ADMIN CHARGE
CITY COUNCIL (0100)

		GEN FUND 001	ELEC 401	W/S 421	AIRPORT 441	MARINA 451	S/W 461	CEMETERY 603
ALLOCATION FACTOR	Est % of Time Spent	47.4%	30.0%	20.0%	2.0%	0.5%	0.1%	0.0%
TOTAL CITY COUNCIL BUDGET	93,222	44,187	27,967	18,644	1,864	466	93	0

ADMIN CHARGE
CITY CLERK (0200)

		GEN FUND 001	ELEC 401	W/S 421	AIRPORT 441	MARINA 451	S/W 461	CEMETERY 603
ALLOCATION FACTOR	Est % of Time Spent	32.9%	30.0%	30.0%	1.0%	1.0%	0.1%	5.0%
PERSONNEL EXPENSES	414,497	136,370	124,349	124,349	4,145	4,145	414	20,725
OPERATING EXPENSES								
Election Expense	5,500	5,500						
Schools & Meetings	3,500	3,500						
All Other Expenses	47,100	15,496	14,130	14,130	471	471	47	2,355
Total Operating	56,100	24,496	14,130	14,130	471	471	47	2,355
TOTAL CITY CLERK OP BUDGET	470,597	160,865	138,479	138,479	4,616	4,616	462	23,080

GEN FUND	ELEC	W/S	AIRPORT	MARINA	S/W
001	401	421	441	451	461

ALLOCATION FACTOR	Est % of Time Spent	40.40%	40.0%	17.5%	1.5%	0.5%	0.1%
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TOTAL CITY MANAGER BUDGET	337,468	136,337	134,987	59,057	5,062	1,687	337
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Percent of Time Spent On:

Description	TOTAL SALARY & PERCENTAGE	GEN FUND 001	ELEC 401	W/S 421	AIRPORT 441	MARINA 451	S/W 461	CEMETERY 603	ck
ALLOCATION FACTOR	Percent of Total Operating Expenses	17.18%	68.3%	9.5%	2.1%	1.0%	1.8%	0.2%	100.0%
TOTAL CITY HALL BUDGET	136,240	23,409	93,047	12,918	2,883	1,295	2,480	208	136,240

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ADMIN CHARGE
CITY ATTORNEY(1100)

Percent of Time Spent On:

Name Position	TOTAL SALARY & PERCENTAGE	Percent of Time Spent On:						
		GEN FUND 001	ELEC 401	W/S 421	AIRPORT 441	MARINA 451	S/W 461	CEMETERY 603
ALLOCATION FACTOR	Est % of Time Spent	52.0%	15.0%	14.0%	15.0%	2.0%	1.0%	1.0%
Total City Attorney Budget Less Capital	528,750	274,950	79,313	74,025	79,313	10,575	5,288	5,288

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ADMIN CHARGE
HUMAN RESOURCES(1200)

		001	401	421	441	451	461	603
	TOTAL	GEN FUND	ELEC	W/S	AIRPORT	MARINA	S/W	CEMETERY
ALLOCATION FACTOR	% of F/T Employees	55.90%	20.51%	13.59%	3.08%	0.77%	5.90%	0.26%
PERSONNEL EXPENSES								
SALARIES	212,930	119,022	43,678	28,937	6,552	1,638	12,557	546
PART-TIME	-	-	-	-	-	-	-	-
OVERTIME	-	-	-	-	-	-	-	-
FICA	16,289	9,105	3,341	2,214	501	125	961	42
PENSION	71,112	39,750	14,587	9,664	2,188	547	4,194	182
LIFE INS	628	351	129	85	19	5	37	2
GROUP INS	44,796	25,040	9,189	6,088	1,378	345	2,642	115
TOTAL PERSONAL EXPENSES	345,755	193,268	70,924	46,987	10,639	2,660	20,391	887
OPERATING EXP	69,002	38,570	14,154	9,377	2,123	531	4,069	177
TOTAL	414,757	231,839	85,078	56,364	12,762	3,190	24,460	1,063

ADMIN CHARGE
FINANCE(1300)

Name Position	SALARY	GEN FUND 001	ELEC 401	W/S 421	AIRPORT 441	MARINA 451	S/W 461	CEMETERY 603
ALLOCATION FACTOR	Est % of Time Spent	45.00%	35.0%	13.0%	3.5%	2.0%	1.0%	0.5%
Finance Director	120,306							
Comptroller	78,750							
	199,056	89,575	69,670	25,877	6,967	3,981	1,991	995
ALLOCATION FACTOR	Percent of Total Operating Expenses	17.18%	68.3%	9.5%	2.1%	1.0%	1.8%	0.2%
Accounting Specialist	36,836							
Supervisor of Accounts	50,000							
Senior Accounting Clerk	28,333							
Senior Accounting Clerk	28,334							
SUBTOTAL	143,503	24,657	98,008	13,607	3,037	1,364	2,612	219
ALLOCATION FACTOR	of F/T Employees	55.90%	20.51%	13.59%	3.08%	0.77%	5.90%	0.26%
Sr. Accounting Specialist	37,187	20,787	7,628	5,054	1,144	286	2,193	95
ALLOCATION FACTOR	Percent of Total Cash Handling	0.93%	79.21%	13.60%	2.42%	1.34%	2.34%	0.17%
Cashier Supervisor	43,563							
Cashier	28,100							
Cashier	28,100							
P.T. CASHIERS	31,500							
SUBTOTAL	131,263	1,218	103,980	17,848	3,170	1,756	3,073	218
Total Full & Part Time Salaries	511,009	136,237	279,285	62,385	14,319	7,387	9,868	1,528
Allocate other personnel and operating expenses by total salaries percentages								
26.7% 54.7% 12.2% 2.8% 1.4% 1.9% 0.3%								
Other Personnel Expenses	289,235	77,111	158,077	35,311	8,104	4,181	5,586	865
Total Operating Expenses	40,000	10,664	21,861	4,883	1,121	578	772	120
TOTAL FINANCE	840,244	224,012	459,224	102,579	23,544	12,147	16,226	2,512

Name Position	SALARY	GEN FUND 001	ELEC 401	W/S 421	AIRPORT 441	MARINA 451	S/W 461	CEMETERY 603																																			
ALLOCATION FACTOR		<table border="1"> <thead> <tr> <th colspan="8">Est % of Time Spent</th> </tr> </thead> <tbody> <tr> <td>System Operations Help Desk</td> <td>50%</td> <td>53.7%</td> <td>43.3%</td> <td>1.7%</td> <td>0.0%</td> <td>0.0%</td> <td>1.3%</td> <td>0.0%</td> </tr> <tr> <td>System Operations Internal</td> <td>50%</td> <td>43.5%</td> <td>43.0%</td> <td>10.0%</td> <td>1.0%</td> <td>1.0%</td> <td>1.0%</td> <td>0.5%</td> </tr> <tr> <td>Weighted Average - System Operations</td> <td></td> <td>48.6%</td> <td>43.2%</td> <td>5.9%</td> <td>0.5%</td> <td>0.5%</td> <td>1.2%</td> <td>0.3%</td> </tr> </tbody> </table>							Est % of Time Spent								System Operations Help Desk	50%	53.7%	43.3%	1.7%	0.0%	0.0%	1.3%	0.0%	System Operations Internal	50%	43.5%	43.0%	10.0%	1.0%	1.0%	1.0%	0.5%	Weighted Average - System Operations		48.6%	43.2%	5.9%	0.5%	0.5%	1.2%	0.3%
Est % of Time Spent																																											
System Operations Help Desk	50%	53.7%	43.3%	1.7%	0.0%	0.0%	1.3%	0.0%																																			
System Operations Internal	50%	43.5%	43.0%	10.0%	1.0%	1.0%	1.0%	0.5%																																			
Weighted Average - System Operations		48.6%	43.2%	5.9%	0.5%	0.5%	1.2%	0.3%																																			
R. Davila Supervisor of Systems Operations	80,789																																										
Lang Associate Systems Administrator	49,335																																										
Danforth Systems Support Technician	30,927																																										
Speer Systems Support Technician	30,635																																										
SUBTOTAL	191,686	93,159	82,713	11,214	958	958	2,204	479																																			
Percentage of Total Computers		62.24%	21.99%	12.24%	1.66%	0.83%	1.04%	0.00%																																			
P. Mills Supervisor of Net & Telecommunications	77,212																																										
S Demers Network Systems Analyst	57,603																																										
Hammond Network Support Tech	40,014																																										
OVERTIME	1,500																																										
SUBTOTAL	176,329	109,748	38,778	21,584	2,927	1,463	1,829	0																																			
TOTAL SALARIES	368,015	202,908	121,490	32,797	3,885	2,422	4,034	479																																			
<table border="1"> <thead> <tr> <th colspan="8">Allocate other personnel and operating expenses by total salaries percentages</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>55.1%</td> <td>33.0%</td> <td>8.9%</td> <td>1.1%</td> <td>0.7%</td> <td>1.1%</td> <td>0.1%</td> </tr> </tbody> </table>									Allocate other personnel and operating expenses by total salaries percentages										55.1%	33.0%	8.9%	1.1%	0.7%	1.1%	0.1%																		
Allocate other personnel and operating expenses by total salaries percentages																																											
		55.1%	33.0%	8.9%	1.1%	0.7%	1.1%	0.1%																																			
Other Personnel Expenses	236,909	130,621	78,209	21,113	2,501	1,559	2,597	308																																			
Total Operating Expenses	140,450	77,438	46,366	12,517	1,483	924	1,539	183																																			
TOTAL INFO TECH	745,374	410,967	246,065	66,428	7,869	4,905	8,169	971																																			

ADMIN CHARGE
PURCHASING(1302)

Name Position	TOTAL SALARY & PERCENTAGE	GEN FUND 001	ELEC 401	W/S 421	AIRPORT 441	MARINA 451	S/W 461	CEMETERY 603
ALLOCATION FACTOR	Est % of Time Spent	32.4%	37.5%	25.0%	4.0%	0.8%	0.3%	0.0%
TOTAL PURCHASING	431,012	139,648	161,630	107,753	17,240	3,448	1,293	-

ADMIN CHARGE
WAREHOUSE(1303)

Name Position	TOTAL SALARY & PERCENTAGE	GEN FUND 001	ELEC 401	W/S 421	AIRPORT 441	MARINA 451	S/W 461	CEMETERY 603	
ALLOCATION FACTOR	Percentage of Total Inventory	1.78%	86.30%	11.93%	0.00%	0.00%	0.00%	0.00%	
J. POOLE Warehouse Group Leader	50,440								
Hearl SENIOR STOCK CLERK	44,366								
Subtotal	94,806	1,684	81,815	11,307	-	-	-	-	94,806
ALLOCATION FACTOR Allocate 100% to Electric - Added at Request of T&D due to operational impacts of warehouse staff reduction									
Seibel Stock Clerk	31,678		31,678						
ALLOCATION FACTOR	of F/T Employees	55.90%	20.51%	13.59%	3.08%	0.77%	5.90%	0.26%	
D. Sullenberger DELIVERY SERVICES ATTENDANT	33,862	18,928	6,946	4,602	1,042	260	1,997	87	
TOTAL SALARIES	160,346	20,612	120,439	15,909	1,042	260	1,997	87	160,346
Allocate other personnel and operating expenses by total salaries percentages									
		12.9%	75.1%	9.9%	0.6%	0.2%	1.2%	0.1%	
Other Personnel Expenses	96,772	12,440	72,687	9,601	629	157	1,205	52	
Total Operating Expenses Excluding Capital	22,317	2,869	16,763	2,214	145	36	278	12	
TOTAL WAREHOUSE	279,435	35,921	209,889	27,724	1,816	454	3,480	151	279,435

enter budget data
in these cells

INVENTORY			at m/e Mar 16 per G/L	
	Value	Percent		
General	68,866	1.78%		
T&D / Electric	3,345,635	86.30%		
Water/Sewer	462,375	11.93%	includes 421 Supply and Step System	
TOTAL	3,876,876	100.0%		

**ADMIN CHARGE
PLANNING & DEVELOPMENT(1700)**

GEN FUND	ELEC	W/S	AIRPORT	MARINA	S/W	CEMETERY
001	401	421	441	451	461	603

ALLOCATION FACTOR	Est % of Time Spent	97.00%	0.0%	1.0%	2.0%	0.0%	0.0%	0.0%	100.00%
TOTAL PLANNING & DEV BUDGET	586,483	568,889	0	5,865	11,730	0	0	0	

enter budget data in these cells

Name Position	TOTAL SALARY & PERCENTAGE	GEN FUND	ELEC	W/S	AIRPORT	MARINA	S/W	CEMETERY
		001	401	421	441	451	461	603
ALLOCATION FACTOR	Est % of Time Spent	Varies by position - see estimates below						
Monte Falls PW DIRECTOR	136,998	116,448 85%	0 0%	0 0%	0 0%	0 0%	20,550 15%	0 0%
Don Dexter Manager	70,303	63,273 90%	0 0%	0 0%	0 0%	0 0%	7,030 10%	0 0%
N. Nichols SR ADMIN ASST	50,523	50,523 100%	0 0%	0 0%	0 0%	0 0%	0 0%	0 0%
P. Selent Sr Admin Asst	41,691	35,437 85%	0 0%	0 0%	0 0%	0 0%	6,254 15%	0 0%
SUB-TOTAL SALARIES	299,515	265,681	0	0	0	0	33,834	0

Allocate other personnel and operating expenses by total salaries percentages							
88.7%	0.0%	0.0%	0.0%	0.0%	0.0%	11.3%	0.0%

Other Personnel Expenses	167,171	148,287	0	0	0	0	18,884	0
Total Operating Expenses	72,422	64,241	-	-	-	-	8,181	-
TOTAL PW ADMIN	539,108	478,210	-	-	-	-	60,898	-

539,108

Excluding capital purchases

enter budget data
in these cells

ADMIN CHARGE
GF NonD(9900)

Percent of Time Spent On:

Name Position	TOTAL SALARY & PERCENTAGE	GEN FUND 001	ELEC 401	W/S 421	AIRPORT 441	MARINA 451	S/W 461	CEMETERY 603
ALLOCATION FACTOR	% of F/T Employees	55.90%	20.51%	13.59%	3.08%	0.77%	5.90%	0.3%
Telecommunication Services	29,000	16,210	5,949	3,941	892	223	1,710	74
ALLOCATION FACTOR	Use is 50/50 Warehouse & Public Works, and 91% of inventory in Warehouse is Electric...split 50 50							
Airport Land Rent	72,900	36,450	36,450	0	0	0	0	0
TOTAL NON-DEPTL	101,900	52,660	42,399	3,941	892	223	1,710	74