

ORIGINAL

OPEN MEETING AGENDA ITEM



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TO: Arizona Corporation Commission
Commissioners
Kristin K. Mayes, Chairman
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2009 DEC 17 A 9:56

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Arizona Corporation Commission

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DEC 17 2009

FROM: James F. Rowley III, Intervenor

DOCKETED BY [Signature]

DATE: December 12, 2009

RE: Sulphur Springs Valley Electric Cooperative, Inc - Application for Approval of SSVEC's Proposed 2010 REST Plan (Docket Number E-01575A-09-0429)

SUBJECT: Comments and Recommendations, Exceptions to the Staff ROO, and Recommendations to hold Hearings to Resolve the Many Issues in this Matter.

Part I – Comments and Recommendations.

In full disclosure, I am the owner and Qualifying Party for Elgin Energy, LLC, a licensed Electrical Contractor with the State of Arizona ROC # 254282. Neither myself nor my company has installed any Renewable Energy systems. On September 4, 2009 Sulphur Springs Valley Electric Cooperative, Inc (SSVEC) submitted their 2010 REST plan to the Arizona Corporation Commission (ACC). After reading the proposed plan and being an SSVEC cooperative member/owner, I applied for and was granted Intervener status from Administrative Law Judge, Jane L. Rodda. I have made three Discovery requests from SSVEC.

I would preface my remarks and recommended changes with the observation that the SSVEC REST Plan is totally upside down because of SSVEC over committing funds to the CREB School Large Scale PV Program. I have attempted to make suggestions that will help transition the REST program from this debacle while being sensitive to the needs of the company and its customers.

On March 17, 2007, the SSVEC Board of Directors authorized staff to borrow \$11,480,000 in Clean Renewable Energy Bonds (CREB) from the United States Department of the Treasury to construct PV modules on shade structures at public schools and colleges located within SSVEC's service territory. In December 2007 the ACC authorized SSVEC to incur debt for the purpose of funding the program. SSVEC has estimated the PV production of this program to be 975,000 watts. Actual cost of the School Program came in at a cost of \$11.77 per installed DC watt. Rebates for Renewable Energy systems for residential and commercial are only funded under the 2009 REST plan at \$4.00 per installed DC watt or 50% of the system cost

Payments of \$1,045,000 per year will be required for the next 9 to 10 years to retire the debt incurred through this CREB loan. SSVEC's estimated 2010 collections under the current REST tariff are \$1,395,495. Of the estimated 2010 collections under the current tariff, 74.9% is obligated to repay the CREB's. Because of the payments to the CREB's, SSVEC's 2009 REST budget has become a disaster. In

replying to my request for Discovery, dated October 20, 2009, SSVEC estimates that under the current tariff it would take 182 years before the existing applications and installed systems to receive rebates due them. **(Exhibit #1)**

In a presentation made to the SSVEC Board of Directors on July 16, 2007 it was stated "As part of the Program, these 41 PV systems will share a data collection module that will monitor the energy produced by the panels as well as the local weather". **(Exhibit #2)** If these data collection modules have not been installed, they are not visible by the students and cannot be used for onsite educational classes. The first system was not energized until June of 2009 with the last of the schools expected to go on line mid-November 2009. As of yet, no monitoring equipment has been installed on the schools. The students and staff have no way to monitor the energy production of these systems thus are not receiving any educational benefit.

SSVEC stated "some of the high costs of the school PV was a result of contracts that provide for the warranty or maintenance of the panels to reduce the possibility of added costs to the schools for maintenance and repairs." There have been reports of the PV systems installed at the schools are not performing satisfactorily. In an email from David Bane, Key Account Manager, SSVEC, dated November 19, 2009 he mentioned the shading of the PV system from existing parking lot lights at Patagonia High School. It is estimated the shading of the PV systems could impact production by 20%. SSVEC has burdened Patagonia High School with the responsibility to modify the light poles to correct the problem. Elgin Elementary school reports their electric bill went up the first month the PV system was turned on. This could have been because the SSVEC automated meter was not properly programmed.

SSVEC is requesting the 2010 rebates for business and residential installations be reduced from \$4.00 to \$3.00 or 50% of the cost, yet SSVEC will be spending \$11.77 per installed DC watt for the school PV systems. They include shade structures, which would not have been eligible for rebates for Residential or Commercial installations. The \$11.77 per installed DC watt for such a large-scale project shows a blatant disregard for the cooperative member/owners money. Normally when a utility contracts for such a large project, the cost per watt should be less not more. The cost per installed DC watt should not exceed \$8.00.

I believe SSVEC would have gotten more bang for their buck if they would have put all of the REST funds toward customer rebate projects. The cost per Watt would have been substantially less for SSVEC and provided more Renewable Energy Credits toward their Annual Renewable Energy Goal.

Because of the budget problems with the school program, I am requesting the following from the ACC:

1. SSVEC should not build any Large Scale Renewable projects with the 2010 REST funds because of their poor management of the Schools Program. Renewable Energy Goals would be better met by providing rebates to the cooperative members/owners. If funds are remaining from the 2010 REST budget at the end of 2010 and SSVEC has not received applications for rebates, SSVEC may then be allowed to use the remaining funds for Large Scale Renewable projects.
2. SSVEC be required to place monitoring equipment on the schools which will be available for the students, staff and public to view production of each school via the internet, as this was proposed to be part of the School PV Program. (This money can come from the REST Program Costs, "Advertising")

3. The ACC appoint an independent PV Professional and cooperative members/owners to inspect all the school PV systems and verify the systems are operating as designed. Any changes to the PV systems, shading issues or other problems should be paid for by SSVEC or their contractor at no cost to the REST budget.
4. Have either the ACC or independent auditor look at all the contracts, billing and costs associated with the school program to verify all expenses and contracts meet legal requirements.

In SSVEC's 2010 REST Plan, there are several items of interest in Schedule NM. SSVEC is requesting the ability to recover fixed cost by raising the monthly Service Availability Charges. They are also requesting the Net Metering customer pay the incremental cost difference of the bi-directional meter required for the Net Metering and the standard meter, as a onetime charge.

ACC Administrative Code Title 14-2-1801-M states "The affected Utility does not charge the customer-generator any additional fees or charges or impose any equipment or other requirements unless the same is imposed on customers in the same rate class that the customer-generator would qualify for if the customer-generator did not have generation equipment."

SSVEC's request to raise the Service Availability Charges and incremental cost difference for the bi-directional meter should be denied based on the ACC Administrative Code Title 14-2-1801-M.

SSVEC is also asking for a "True up" period of September 1st. In response to my request for Discovery SSVEC stated "The Cooperative does not have a large accounting staff, the month of September was chosen as a time between the mid-year audit and the end of the year closing when workload would permit making these adjustments". SSVEC demand is unlike the service areas located in Tucson and Phoenix. The climate in SSVEC territory causes the electric demand peak in the winter verses the summer months. PV systems peak production is in the summer months when the Sun is directly overhead and has the longest daily exposure to the Sun.

A "True up" date of September 1st is not in the cooperative members/owners best interest. The highest performance of the PV systems is in the summer. The cooperative member/owners need for the majority of their electricity requirements are in the winter. Cooperative members/owners taking vacation in the summer with their PV systems producing at peak performance will build up a substantial excess generation credit. By using September 1st as the "True up" date it will rob the cooperative member/owner of any excess generation credits.

For these reasons I recommend a "True up" date of March 1st be used to better serve the needs of the consumers and will fit into SSVECs workload.

SSVEC Proposed Sunwatts Residential Rebate Program Section 2. Page 5 and Section 12. Page 10; SSVEC proposes to limit the amount of Renewable Energy production to systems under 10 kW to determine the 125% capacity. It is not uncommon for cooperative members/owners to have several electric meters because of wells and out-buildings. The 10 kW limit is unfair for the ranchers and farmers who use more than 100% of the production of a single 10 kW Renewable Energy system.

Because of the burden this places on commercial and residential cooperative/members I recommend the following:

1. No limit shall be placed on either residential or commercial member/owners who install Renewable Energy systems. Any renewable energy production over 100% of the cooperative member/owners use and not more than 125% be paid at the same cost per kWh SSVEC pays for kWh based on an annual average of 2010 including fuel adjustment. This rate should be fixed during the calendar year 2010 and be used to "True up" the cooperative member/owners account on March 1, 2011.
2. SSVEC provide a mechanism for Cooperative members/owners to combine electric usage from multiple meters to determine their connected load. This would allow cooperative members/owners a more cost effective alternative to maximize their Renewable Energy system(s) and combine all meters usage into one account. One bi-directional meter rather than numerous systems, making it more cost effective for the Utility and Customer. This would allow them to combine their connected load into a "Combine Account". The "Combine Account" would allow them to construct one large renewable energy system rather than numerous smaller systems, if they so choose.

SSVEC submitted three options for the proposed 2010 REST budget. Option 1 does not change the current Tariff and leaves a large backlog of cooperative owners/members waiting for rebates. Option 1 has a budget for Large Scale Renewable Projects at \$20,000. The Option 2 raises the Tariff from .005 to .07937 per kWh and budgets \$200,000 for Large Scale Renewable Projects. This option increases the caps slightly. Option 3 raises the Tariff from .005 to .07937 per kWh and budgets \$800,000 for Large Scale Renewable Projects. SSVEC states this option will allow them to better meet their Renewable Energy goals.

SSVEC has already allocated the majority of its REST budget to large scale renewables through the CREBS loan obligation for the School PV Project, at a higher than standard cost per watt cost. I recommend that there be no additional large scale projects in 2010 and transfer that allocation to the Residential Rebates. This will only provide funding for 1/3rd of the back log of customer requests for rebates. This will also provide SSVEC with more Renewable Energy for their Annual Renewable Energy Goal

To address the need to provide more renewable energy, to better meet SSVEC's Renewable Energy Goal and the huge backlog of cooperative member/owners requesting a rebate, I recommend a Modified Budget under **Option #3. Page 12, Table VIII :**

1. The 2010 Tariff be increased from .005 to .07937 per kWh.
2. Loan Program budget \$200,000.
3. Program administration cost not to exceed \$200,000.
4. Habitat Project cost \$34,000.
5. CREB Bond Payment of \$1,045,000.
6. Large Scale Renewable projects (~~delete -\$800,000~~) - \$0.00.
7. SunWatts Residential Rebates (~~delete- \$444,381~~) \$1,244,381.
(SSVEC reports backlog of rebates & reservations at \$3,000,000)
8. SunWatts Commercial Rebates \$296,254.
9. Total Budget : \$3,019,635.00

In the 2009 REST plan SSVEC currently offers \$4.00 per installed DC watt. In the 2010 REST plan they are proposing \$3.00 per installed DC watt. ACC staff has recommended \$2.50 per installed DC watt. Cochise County covers the majority of SSVEC's service territory. Cochise County has recently changed

their building permit requirements. They now require the contractor to submit an approved interconnect agreement with the power company before the permit application can begin. **(Exhibit 3)** Prior to this change the contractor was able to submit both applications concurrently. This change will require additional time for the contractor to obtain the interconnect agreement before they can apply for the permit. It is well known that the cost of renewable energy systems continues to drop. However, the cost to install a renewable energy system in a rural county is much higher than for a metropolitan community. The distances between the supplier, contractor's office, county government and the customer's location can more than triple the time required to install the same system as in a metropolitan community.

I recommend SSVEC retain the cost per installed DC watt \$4.00 or 50% of the system cost, or possibly a heightened rebate for early adopters. This would better serve the cooperative member/owners and continue to provide incentives for the renewable energy contractors to work in the SSVEC territory. In addition to the this, the present installs and customers on the wait list have purchased their Renewable Energy Systems on the assumption that \$4.00 per watt or 50% of the cost of the system would be paid would be paid for out of the REST Rebate Funds. To lower this cost would be an additional hardship on the customers and installers that were working on the advertised plan rebate rates. This will also give SSVEC lower cost per watt for Renewable Energy Credits than if they were to spend REST funds on a Large Scale Install, as they did in the past at over \$11 per watt, a substantial savings.

SSVEC and ACC staff both propose introducing Performance Based Incentives into the SSVEC 2010 REST Program. Staff has also recommended that, if the commission approves a UCPP, SSVEC should be required to develop a mechanism to incorporate UCPP procedures and incentive levels for all eligible technologies in its proposed Rest plan for 2011 and later years. In recent ACC proceedings SSVEC has made issue of overworked staff and not enough time to accomplish tasks required by the ACC.

In light of these issues I would propose the SSVEC 2010 REST Plan **not** include Performance Based Incentives at this time. Additionally, the funds are already committed, and actually over committed to customers with installs waiting for rebates and customers in line to install. To complicate the REST program at this juncture would be added paperwork and administrative costs for SSVEC that would not be necessary for a program that has a budget totally committed before the year even starts.

I recommend the Performance Based Incentives be removed from the SSVEC 2010 REST Plan and recommend keeping the present standards of 125% of customer connected load. There just isn't enough money in the SSVEC budget to fund large scale projects in 2010.

I also recommend the onsite School PV Monitoring Systems be installed using the Program Costs "Advertising" dollars. Since the REST Rebate Funds are presently committed until 2012, additional advertising for the REST Program is not necessary. To promote conservation and weatherization would be more appropriate, which can be funded through the companies DSM Program.

I respectfully submit these changes for your approval with the hopes of providing the best 2010 REST plan for the SSVEC cooperative members/owners. My goal is to provide better incentives so the cooperative owner/members will install renewable energy systems and allow SSVEC to reach its Renewable Energy Goals.

PART II – RECOMMENDATIONS FOR “SCHOOL PV” AND “COMBINE ACCOUNTS”

12) FOR SCHOOL PV:

A. SSVEC be required to place monitoring equipment on the schools which will be available for the students, staff and public to view production of each school via the internet, as this was proposed to be part of the School PV Program. (This money can come from the REST Program Costs, “Advertising”)

C. The ACC appoint an independent PV Professional and cooperative members/owners to inspect all the school PV systems and verify the systems are operating as designed. Any changes to the PV systems, shading issues or other problems should be paid for by SSVEC or their contractor at no cost to the REST budget.

D. Have either the ACC or independent auditor look at all the contracts, billing and costs associated with the school program to verify all expenses and contracts meet legal requirements.

13: FOR “COMBINE ACCOUNTS” :

A. No limit shall be placed on either residential or commercial member/owners who install Renewable Energy systems. Any renewable energy production over 100% of the cooperative member/owners use and not more than 125% be paid at the same cost per kWh SSVEC pays for kWh based on an annual average of 2010 including fuel adjustment. This rate should be fixed during the calendar year 2010 and be used to "True up" the cooperative member/owners account on March 1, 2011.

B. SSVEC provide a mechanism for Cooperative members/owners to combine electric usage from multiple meters to determine their connected load. This would allow cooperative members/owners a more cost effective alternative to maximize their Renewable Energy system(s) and combine all meters usage into one account. One bi-directional meter rather than numerous systems, making it more cost effective for the Utility and Customer. This would allow them to combine their connected load into a “Combine Account”. The “Combine Account” would allow them to construct one large renewable energy system rather than numerous smaller systems, if they so choose.

PART III – EXCEPTIONS TO THE STAFF ROO

Based on the Comments above in Part I and after reviewing the ACC Staff's report and submitting my findings as Intervener, I would like to take Exception to parts of the Staff Report and ROO and recommend the following changes to the Procedural Order:

(Additions are underlined and deletions are in *italic*)

Paragraph 4

- 1) Recommend SSVEC make the following changes to schedule NM:

- * The Calendar Year for NET Metering is defined as March 1 through February 28 (except on Leap Years use February 29).
- * Monthly Service Availability Charge to be the same for NET Metering customers as those customers without NET Metering.
- * The Bi-Directional meter will be supplied by SSVEC at no cost to the NET Metering customers.

Also Recommend:

- 2) Removing the Performance Based Incentives from the SSVEC 2010 REST Plan.
- 3) Keep present SunWatts Residential Rebate standards of 125% of customer connected load, and not restrict them to 10kw.
- 4) Keep the present REST Rebate Structure at \$4.00 per watt or 50% of the system cost. To lower this payment for 2010 does not make sense since the Rebates are oversubscribed at this time.

Recommended Changes to Staff Recommendations:

- 5) Page 17 and Paragraph #68 : Staff has recommend that the proposed 2010 Renewable Energy Standard Implementation Plan and Schedule REST Option #3 be approved (*delete "as discussed herein)* with the following changes:
 - Large Scale Renewables (CREBs) or PPA (delete- \$800,000) - \$00.00
 - Sun Watts Residential Rebates : (delete- \$444,381) : \$1,244,391
- 6) Page 17, Paragraph #70 : Staff has recommended that The Sun Watts Residential Rebate (*delete- Performance Based*) Incentive Program pay (*delete \$3.00*) \$4.00 per Watt, up to 50% of the total cost of the photovoltaic and /or wind system.
- 7) Delete paragraph #71 (*Staff has further recommended that the change specifying performance based rates for all wind systems be made in the filed tariff.*)
- 8) Delete paragraph #72 (*Staff has recommended that in the Sun Watts Residential Rebate and Performance Based Incentives Program customers with systems of 10kW or greater or with a cost higher than \$75,000 be paid by the Performance Based Incentive.*)
- 9) Page 18, paragraph #75 : Staff has further recommended that SSVEC have the flexibility to shift budget allocations provided that it describe the need for the change and how the change would be accomplished in a letter to the docket when applicable, and include a copy in the customer monthly billing or Co-op Connection monthly flyer.
- 10) Change "ORDER" : Page 18 line 18 : IT IS THEREFORE ORDERED that the Sulphur Springs Valley Electric Cooperative, Inc. proposed 2010 Renewable Energy Standard Implementation Plan, and Schedule REST Option #3, with the exception of moving the Large Scale Renewable Funding of \$800,000 to the SunWatts Residential Rebates totaling \$1,244,391; be and is approved, as discussed herein.

- 11) Change page 18 line 26 : IT IS THEREFORE ORDERED that , if the commission approves a Uniform Credit Purchase Program, that Sulphur Spring Valley Electric Cooperative, inc. develop a mechanism to incorporate Uniform Credit Purchase Program procedures and incentive levels for all eligible technologies in it proposed REST plan for (~~delete 2010~~) 2011 or later years.

**PART IV – RECOMMENDATION TO HOLD HEARINGS
TO RESOLVE THE MANY ISSUES IN THIS MATTER.**

As shown above, the Application from SSVEC is uniquely complex and has many issues that may best be resolved in a hearing before an Administrative Law Judge, and then reformed into a Recommended Opinion and Order that will resolve the lack of funding from SSVEC to implement the REST Plan and to resolve the open issues that remain in Netmetering. However, some customers and installers have been waiting months for rebates, and I would not want to further delay those payments. At any rate Rebates SSVEC should begin to pay customer rebates and incentives no later than January 2010.

Therefore, I would concur if the Commission would recommend that a Hearing be held on this matter, as soon as possible, prior to any presentations to the Commission in an Open Meeting.

Sincerely,



James F. Rowley III

cc: Jack Blair, SSVEC, Chief Member Services Officer

2010 REST Plan, Request # 2, ACC Docket Number E-I0575A-09-0429
October 20, 2009

2-4 2009 REST rebates

- a. Number of customers with installed systems waiting for rebates by customer class.

As of 10/22 41 residential and 1 commercial

- b. Number of customers with approved systems that will not receive rebates in 2009 by customer class.

Estimated to be about 35

- c. Number of customers that have filled out forms to be placed on waiting list for 2009 rebates by customer class

145 residential 3 Commercial

- d. SSVEC's policy on who receives the existing \$4.00 per watt rebate and who receives the new proposed rebate.

Everyone who reserves a rebate will receive the 2009 rebate amount until the 2010 plan is approved by the ACC.

- e. Estimated time period for options 1 through 3 before existing applications will be funded.

If additional grant funds and/or stimulus funds are not received

Option #1 182 years

Option #2 5.1 years

Option #3 1 year

- f. SSVEC's policy on how to handle the waiting list and rebates.

We followed the procedure developed by the UCPP working committee.

Prepared by: David Bane
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Sierra Vista, AZ 85635
520-515-3472



Sulphur Springs Valley Electric Cooperative, Inc.

A Touchstone Energy® Cooperative 

2007/2008 EPS/REST PLAN

CLEAN RENEWABLE ENERGY BONDS FOR SCHOOLS PROPOSAL JULY 16, 2007

BACKGROUND: On June 11, 2007, Sulphur Springs Valley Electric Cooperative (“SSVEC”) submitted its revised 2007/2008 EPS/REST Plan (“Plan”) to the Arizona Corporation Commission (“Commission”) for approval pursuant to the requirements of Commission Decision No. 68328. An important component of the Plan includes a program to build Photovoltaic shade structures at all of the public schools in its service territory, as well as the public colleges and universities, utilizing Clean Renewable Energy Bonds for Schools (“CREBS”) (“Program”).

SSVEC has close and constant interaction with its member-owners. While SSVEC has no shareholders to answer to, it must be responsive to its member-owners who purchase power. As a result, SSVEC management is constantly meeting with and listening to SSVEC’s member-owners in order to meet their needs, as well as the needs of the communities where SSVEC serves.

In order to determine how to spend the REST funds collected from our members, SSVEC discussed this important issue with many local civic groups and “focus groups”. It was made abundantly clear to SSVEC from these discussions that our members want this money to be spent in the SSVEC service territory. The clear preference is that the money that SSVEC collects from its member-owners should be spent to directly assist the members. If this was somehow not possible, the money should at least remain in the State of Arizona. In addition, it was also clear that our members want the REST monies to be spent for the greater good of all of our member-owners, such as providing energy to our schools and local governments, instead of subsidizing PV projects for “large out of state companies”. When the idea of solar shade structures for our schools was posed to our members, there was virtually unanimous support as not only would this lower the schools’ energy bills, but it would also provide shaded areas for our children to play outside, reduce emissions from fossil fuel, reduce water use, as well as to provide an educational tool for our children and their parents.¹ We have also spoken with our school leaders and they are in strong support of this Program. We have attached their letters of support as well as newspaper articles showing community support as Attachment A.

CLEAN RENEWABLE ENERGY BONDS: The Energy Policy Act of 2005 provided for the issuance of CREB bonds to afford electric cooperatives and public power systems a new incentive to finance renewable generation projects. The maximum amount that all cooperatives nationwide can borrow is \$300,000,000. Originally, the CREBS were required to be issued by the end of 2007, but that has recently been extended to 2008.

¹ It should be noted that the intent is to put children playground equipment and/or picnic tables and benches under the solar shade structures. By doing this, there will be an additional benefit to our schools and our children from the investment in the Program.

On March 17, 2007, the SSVEC Board of Directors authorized SSVEC to borrow \$11,480,000 in CREBS from the United States Department of the Treasury to construct 37 shade structures with PV modules mounted on top to be constructed in the public schools within SSVEC's service territory, as well as one (1) at the University of Arizona South and three (3) at Cochise College. The Board Resolution is attached as Attachment B. These projects had been approved earlier by the United States Treasury Department who notified the National Rural Utilities Cooperative Finance Corporation (CFC). Those approvals are attached as Attachment C. SSVEC will borrow this money from CFC which is a qualified issuer of CREBS.

Subject to the approval of the Commission, SSVEC will have five years to complete these projects or request an extension from the Department of the Treasury. SSVEC's desire is to use the proceeds from the recently approved REST program to repay the zero interest bonds over their 15 year term. SSVEC estimates the cost of repaying these bonds to be \$765,333 per year. The estimated yearly proceeds from the REST tariff is \$1,300,000 based on 2006 figures. Due to the requirements of the CREBS, SSVEC will own, operate, and maintain the solar shade structures for the 15 year life of the loan. The request from SSVEC for the 19 different school district CREBS is attached as Attachment D.

FINANCIAL ANALYSIS: The 23 kW solar shade structure will save each school approximately \$500 per month (\$6,000 per structure per year and \$90,000 over the 15 year life of the loan) based on the July 2007 power costs. As retail power costs increase, the savings will increase as well.

In addition, all SSVEC members will experience savings. The SSVEC peak kW cost in July 2007 was \$18.55 per kW (this includes transmission charges). The addition of these 41 solar shade structures will reduce the SSVEC peak demand by \$426.65 per month per structure (\$5,120 per year per structure and \$76,797 over the 15 year life of the loan). This will result in an estimated annual peak kW savings to SSVEC of over \$209,000 per year. Once again, as the wholesale power costs increase, the savings to SSVEC and its member-owners will increase as well.

Below we have calculated the range of cost recovery periods based on efficiency and average annual energy costs increases. Attachment E sets forth the details of the methodology and calculations.

Cost Recovery Range

Payback Years		System Efficiency Range **		
		80%	90%	100%
Average Annual Energy Cost Increases*	0%	27.8	26.4	25.3
	1%	24.6	23.6	22.6
	2%	22.3	21.4	20.6
	3%	20.5	19.8	19.1
	4%	19.0	18.3	17.8
	5%	17.8	17.3	16.7

* Percentage increase is averaged over the project life

** PV System Efficiency expected to be between 90 and 100% of nameplate ratings

It should be noted that if grant monies are obtained, we plan on using these monies to either enlarge the structures or to repay the CREBS, thus reducing the amount of REST funds needed for the Program and utilizing the savings for other REST programs. The decision of which option to choose will depend on the terms and conditions of the grant.

These financials are also a significant improvement over the structure previously submitted by Arizona Electric Power Cooperative ("AEPSCO") in which the cost payback period was 59 to 95 years.

SOLAR SHADE STRUCTURES: SSVEC, based on a competitive bid structure, selected Solon America Corporation of Tucson to construct these structures. Solon America submitted a bid to construct 41, 23 kW solar shade structures at our public schools, universities, and community colleges at a cost of \$240,608 per structure. These structures are different than those previously submitted by AEPSCO in that they are simple "post and beam" shade structures, versus cantilever car shade structures, and thus use less steel and lower strength steel thereby lowering the cost of each shade structure. In order to further reduce the cost of the solar shade structure, SSVEC will offer only two basic designs to the schools which further reduce costs by eliminating the need for 41 custom designs. SSVEC presented this concept to the schools and received enthusiastic support which is reflected in the letters contained in Attachment A. The difference in the bid price of \$240,608 from Solon America and the CREB price of \$280,000 will cover SSVEC personnel and maintenance costs over the 15-year life of the Project.

SOLON AMERICA: SOLON America was incorporated in Arizona on January 2, 2007. The company is a wholly owned subsidiary of SOLON AG. Berlin-based SOLON AG is one of Europe's leading manufacturers of solar modules and photovoltaic systems including design, engineering and installation of large utility scale "turnkey" solar systems. SOLON AG's annual sales in 2006 were in excess of \$400,000,000.

At the beginning of 2008, SOLON America will commence mass production of solar modules for the North American market. The first stage of development will see the creation of 40MW of production capacity at the Tucson facility. In addition to PV module production, SOLON America has purchased Tucson based Global Solar Energy's integrated systems business unit and will continue pursuit of integrated system solar system turnkey projects throughout North America. The purchase of Global Solar's integrated systems business instantly brings over 6MW of U.S. based turnkey solar system expertise to SOLON America in addition to the ~100MW turnkey solar system experience within SOLON AG.

Additional information on Solon America is found in the binder that is included with our documentation.

ENVIRONMENTAL BENEFITS: Solon America has provided calculations to show the reduction of fossil fuel emissions (SO₂, NO_x, PM₁₀, CO₂, and VOCs) as well as the reduction of water usage from power production using fossil fuels. These savings are found in Attachment F.

ADDITIONAL EDUCATIONAL BENEFITS: As part of the Program, these 41 PV systems will share a data collection module that will monitor the energy produced by the panels as well as the local weather. Students and teachers will have access to the data via a website that will let them study how well the system is working and to see the effect weather has on the performance of the system. This real world data will make working with renewable energy more real for the students and their teachers.

GRANTS: SSVEC has employed a professional grant writer, Mr. Jay Lane, to write grant applications for all of the schools in order to obtain additional funding. Mr. Lane has researched potential grants and believes that SSVEC will have an excellent opportunity to obtain either local, state, or federal grants for many of the schools. However, Mr. Lane is unable to apply for grants until SSVEC REST Plan is approved by the Commission and funds are available. If additional grant monies are obtained, SSVEC will either:

- Enlarge the shade structures at the schools to produce additional energy. The structures have been designed so that additional sections can be added at a later date.
- Repay the bonds using the grant money thus reducing the amount of REST funds needed for the Program and utilizing the savings for other REST programs.

The decision on which of the options to use will depend on the terms and conditions of the grants. A summary of potential grant opportunities that SSVEC intends to seek is contained in Attachment G.

CONCLUSION: Through a separate financing application, SSVEC will be seeking Commission approval to borrow \$11,480,000 in CREBS to construct solar shade structures at 41 education facilities. Therefore, this Program is contingent upon Commission approval of such application. Through this filing, however, SSVEC seeks approval of the Program and the authority to pay the monthly principal of the CREBS from the REST tariff surcharge that is added to the members' monthly electric bills. In the event the REST tariff is rescinded during the 15-year life of the CREBS, SSVEC requests that an equivalent REST surcharge remain on customers' bills until such time the CREBS are paid (*i.e.*, end of the 15 year term) to ensure that SSVEC is in compliance with its obligations with respect to the CREBS. This Project and the CREBS will have no financial impact on SSVEC's TIER or DSC ratios.

Exhibit 1-1 j Response to Request #1 November 4, 2009
Cost Recovery Methodology for Solar Covers

The proposed solar covers are expected to produce 24kW dc at full output. Optimal output from the inverter will be about 23kW ac which is the value we used in the cost recovery calculations. Based on industry benchmarks we assume the panels will produce the equivalent of at least 6 hours of full operating capacity per day on average. We are very well aware that the actual output will vary by season and that this number is considered too conservative by some industry experts.

The output and efficiency of the panels and power inverter will vary with time and this was one of the variables built into the Payback table. In the same manner it is expected that the cost of energy will rise over time increasing the value of the solar panels to the Schools and SSVEC.

Calculating the Cost Savings to the School

6 hours X 23 kW produces 138 kWh per day or 4,197.5 per month.

- > kWh costs on the Rate P tariff = \$0.0621 per kWh + FPPCA of \$0.01975 per kWh
- > 4,197.5 X \$0.08185 per kWh = \$ 343.57 per month

The 23kW panel will reduce the peak demand of the school. In this case the schools peak use time coincides with SSVEC system peak.

23 kW X \$6.50 per kWh demand charge = \$149.50 per month.

The total potential savings for the Schools is \$493.07 with the associated savings in taxes will be \$525.11 +/- per month. For calculation purposed we rounded this to \$500.00.

Beyond the savings by the Schools, SSVEC will have a reduction in our system peak demand. Our July 2007 power bill had charges related to system demand of \$18.55 per kW. This consists of the based demand charge, transmission charge and system control charge. This charge will vary slightly by season based on our overall load factor.

23kW of reduced demand is a savings \$426.65 before taxes. For the purpose of this analysis it was rounded to \$427.00.

To account for the two variable mentioned above calculations were run using an efficiency range of 80%, 90% and 100% for the output of the panels along with the potential for rising energy costs over the 15years. Rather than try to estimate the time and amount of the increases we chose to average the increases annually over the term of the bond. It is our feeling that this will give a conservative range of cost recovery.

Payback Years		PV Efficiency Range **		
		80%	90%	100%
Average Annual Energy Cost Increases*	0%	27.8	26.4	25.3
	1%	24.6	23.6	22.6
	2%	22.3	21.4	20.6
	3%	20.5	19.8	19.1
	4%	19.0	18.3	17.8
	5%	17.8	17.3	16.7

* Percentage increase is averaged over the project life

** Efficiency expected to be between 90 and 100%

Solar Energy Systems

Solar Energy Systems are electric power-generating devices, structural design features, mechanisms, or combinations thereof, including, but not limited to photovoltaic (PV) panels, inverters and batteries, that are designed for the purpose of producing electrical power for use primarily on premises. They are distinct from Solar Energy Power Plants, the primary purpose of which is to distribute power off-site to the electrical grid (for more information about requirements for Solar Energy Power Plants, please contact the Planning Department).

A number of state and federal tax incentives and rebates are available to encourage the use of Solar Energy Systems. Also, local power companies often offer incentive programs for solar energy systems.

Building Permits and Construction

Solar Energy Systems are permitted as Accessory Uses in all Zoning Districts. Residential Building Permits are required for all Solar Energy Systems installations, except for those properties determined Ag-Exempt by the Planning Department. All construction must be in accordance with the National Electric Code (NEC) and performed by an Arizona Licensed Contractor. Permits for Solar Energy Systems may be issued as expedited; however, new or unfamiliar technologies may require longer review times.

Grid-tied systems require copies of an approved interconnect agreement with your power company and proof of construction by a licensed contractor. The State of Arizona requires a licensed contractor for off-grid systems. Some utility companies require that contractors be certified by the utility before installing grid-tied systems. Check with your local power utility to learn more and talk to a contractor who specializes in solar energy installation.

Development Standards

Setbacks from all property boundaries and road travel ways for arrays or pole-mounted Solar Energy Systems shall comply with the minimum setback requirements for the respective zoning district in which the system is sited or shall equal the height of the tallest structure associated with the Solar Energy System, whichever is greater. Contact the Planning Department to determine the zoning of your property and the minimum setback requirement for your Solar Energy System.

Solar Energy Systems are exempt from height limits and no minimum distance is required between Solar Energy System components and other structures on your property.

Additional Information

Get an energy audit before going solar. There are many reasons to go solar, but prior to planning your solar installation, you may wish to evaluate how much energy you could save by making your home more energy efficient. Conducting a home energy audit is a useful first step in this process. Also, contact your electric utility to request a history of your electric usage. These steps will help clarify how you may benefit from adding a residential solar system or a solar thermal system to heat water.

Assess the most efficient location for panels. Figure on needing 100 square feet of panels per kilowatt (kW). A typical home installation is 2.5 or 3 kW AC, so you would need about 300 square feet for panels. You will need unshaded roof or ground space facing south, west or east, with panels angled between 5 and 30 degrees.

Consider aesthetics

While a state mandate prevents architectural boards and homeowners associations from restricting solar panel installation based solely on aesthetics, we strongly encourage you to consider your system's visibility to the your neighbors and visual integration with existing buildings. Consider a high performance location with low public visibility or using building integrated technologies, such as thin-film panels.

Learn about solar technologies

For general information about different solar technologies and incentives, visit:

The Energy Efficiency and Renewable Energy office of the U.S. Department of Energy at www.eere.energy.gov

The National Renewable Energy Laboratory at www.nrel.gov

The Arizona Corporation Commission at www.cc.state.az.us

The Arizona Solar Center at www.azsolarcenter.com

EXHIBIT 3

COCHISE COUNTY
PLANNING
DEPARTMENT