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VIA HAND DELIVERY

Brian Bozzo, Compliance Manager
Utilities Division
ARIZONA CORPORATION COMMISSION
1200 West Washington Street
Phoenix, Arizona 85007

**Re: Compliance Filing of Sulphur Springs Valley Electric Cooperative, Inc.
Docket Nos: E-01575A-08-0328 and E-01575A-09-0453 (Consolidated)
Decision No: 71274
Compliance Due Date: March 1, 2011
DSM Program Expense Report**

Dear Mr. Bozzo:

Pursuant to Arizona Corporation Commission ("Commission") Decision No 71274 dated September 8, 2009, Sulphur Springs Valley Electric Cooperative, Inc., hereby submits its DSM Program Expense Report for the period January 1, 2010 through December 31, 2010.¹

If you have any questions, please do not hesitate to contact Jack Blair at 520-515-3470 or David Bane 520-515-3472.

Very truly yours,

SNELL & WILMER



Bradley S. Carroll

BSC/dcp

cc: Docket Control (Original plus 14 copies)
Jack Blair (SSVEC)
David Bane (SSVEC)

¹ Decision No. 71274 at page 46, lines 8-21.

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AZ CORP COMMISSION
DOCKET CONTROL

TUCSON, ARIZONA

IRVINE, CALIFORNIA

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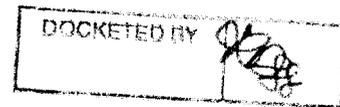
DENVER, COLORADO

LAS VEGAS, NEVADA

March 1, 2011

Arizona Corporation Commission
DOCKETED

MAR 1 2011



**2010 Annual Expense Report
on
Demand-Side Management Programs
for**



**Sulphur Springs Valley
Electric Cooperative, Inc.**

A Touchstone Energy® Cooperative 

**For Period January 1, 2010
through December 31, 2010
in compliance with
Decision No. 71274**

Docket Nos. E-01575A-08-0328 and E-01575A-09-0453

Submitted March 1, 2011

**by
Jack Blair
Chief Member Services Officer
Member Services Department**

**Sulphur Springs Valley Electric Cooperative
311 E. Wilcox Drive
Sierra Vista, AZ 85635
PO Box 820
Willcox, AZ 85644**

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Program Summary

The following pages reflect the status of the DSM Programs submitted by Sulphur Springs Valley Electric Cooperative (“SSVEC”) for the period January 1, 2010 through December 31, 2010, in compliance with Commission Decision No. 71274, page 46, lines 11-21. (With this requirement, the Commission replaced the DSM reporting requirement of Docket E-01575A-92-0220, Decision 58358)

Summary of compliance reporting requirements:

File a report on DSM program expenses semi-annually on March 1, for the period July through December, and September 1, for the period January through June. File the DSM program expense report in Docket Control and shall redact any personal customer information, and that the DSM program expense reports shall include the following: (i) the number of measures installed/homes built participation levels; (ii) copies of marketing material, (iii) estimated cost savings to participates; (iv) gas and electric savings as determined by the monitoring and evaluation process; (v) estimated environmental savings; (vi) the total amount of the program budget spent during the previous six months and, in the end of year report, during the calendar year; (vii) any significant impacts on program cost-effectiveness; (ix) descriptions of any problems and proposed solutions, including movements of funding from one program to another; and (x) any major changes, including termination of the program.

Item number (ii) for all programs is compiled into a separate section of the report beginning on page 10.

DSM Income and Expense Statement

2010 DSM Budget	
Touchstone EE Homes Inspections	\$ 120,000
Residential - audits	\$ 50,000
C&I - audits	\$ 4,500
DSM - Admin	\$ 25,000
DSM - Program Development	\$ 25,000
Expenses	
Advertising	\$ 80,000
Misc	\$ 5,000
Rebates	
Water Heater	\$ 25,000
Heat Pump	\$ 20,000
Loan Programs	
Residential Loans	\$ 200,000
Commercial Loans	\$ 150,000
Budget Totals	\$ 704,500
2010 DSM Collections	
Projected Funding	\$ 728,673
Actual Funding	\$ 855,898
DSM Expenses	
Touchstone EE Homes	\$ 17,555
Residential Audits	\$ 49,394
C&I Audits	\$ 3,060
DSM - Admin	\$ 29,213
DSM - Program Development	\$ 10,020
Expenses	
Advertising	\$ 97,103
Misc	\$ 43,446
Rebates	
Water Heater	\$ 5,900
Heat Pump	\$ 77,500
Loan Programs	
Residential Loans	\$ 259,058
Commercial Loans	\$ -
Expense Total	\$ 592,249
DSM Program Ending Balance =	\$ 263,649

Energy Efficient New Home Program (Touchstone Energy Home Program)

The Touchstone Energy Home Program replaced the Goodcents Program we were previously using until 2002. The new home program promotes new home thermal performance standards that meet or exceed HUD/AzHERS guidelines for energy efficient mortgages. This program encourages the construction of houses that are more energy efficient than otherwise would be built. Inspections on Touchstone Energy Homes are on average \$351.00 each.

Touchstone Energy Efficient Home Program						
	(i) Number of Homes Certified	Estimated kWh \$ saved	Estimated Fossil Fuel \$ Saved	(iii) Total Estimated \$ Savings	Estimated kWh Savings per Year	(vi) Program Costs
Jan	0	\$ -	\$ -	\$ -	-	\$ -
Feb	0	\$ -	\$ -	\$ -	-	\$ -
Mar	0	\$ -	\$ -	\$ -	-	\$ -
Apr	4	\$ 1,244.77	\$ 2,642.64	\$ 3,887.41	7,435	\$ 1,404
May	6	\$ 1,867.16	\$ 3,963.96	\$ 5,831.12	11,152	\$ 2,107
Jun	8	\$ 2,489.54	\$ 5,285.28	\$ 7,774.82	14,870	\$ 2,809
Jul	4	\$ 1,244.77	\$ 2,642.64	\$ 3,887.41	7,435	\$ 1,404
Aug	10	\$ 3,111.93	\$ 6,606.60	\$ 9,718.53	18,587	\$ 3,511
Sep	4	\$ 1,244.77	\$ 2,642.64	\$ 3,887.41	7,435	\$ 1,404
Oct	3	\$ 933.58	\$ 1,981.98	\$ 2,915.56	5,576	\$ 1,053
Nov	6	\$ 1,867.16	\$ 3,963.96	\$ 5,831.12	11,152	\$ 2,107
Dec	5	\$ 1,555.96	\$ 3,303.30	\$ 4,859.26	9,294	\$ 1,755
YTD total =	50	\$ 15,559.65	\$ 33,033.00	\$ 48,592.65	92,935	\$ 17,555
(v) Estimated Environmental Impact						
CO2 (1.844 lb. Per kWh)	171,372	pounds of CO2 emissions reduced				
SO2 (.00342lb Per kWh)	318	pounds of SO2 emissions reduced				
NOx (.0052 lb. per kWh)	483	pounds of NOx emissions reduced				
Budget Impact						
2010 Budget	\$ 120,000.00					
2010 YTD Budget	\$ 120,000.00					
2010 YTD Spent	\$ 17,554.61					
2010 Budget Balance	\$ 102,445.39					
Program Costs (since beginning of program)						
Cost prior to 2010	\$ 60,000.00	estimated				
Cost in 2010	\$ 17,554.61					
Total Program Costs =	\$ 77,554.61					

(vii) Significant impacts on program Cost Effectiveness

None

(ix) Problems and Solutions:

None

(x) Any major changes to the Program

Need to adjust budget to reflect current housing market.

Energy Efficient Existing Home Program

Under this program SSVEC pays \$500 per unit to a homeowner for the installation of air-to-air heat pumps with at least a SEER of 14 and \$200 for dual fuel. This program was approved for 1995 in your letter dated June 22, 1995. The following list is of existing home rebates made during the period January 1, 2010 through December 31, 2010.

Heat Pump Rebate Program				
	(i) Number of Rebates	(vi) Rebates Paid	(iii) Total Estimated \$ Savings	(iv) kWh Savings per Year
Jan	17	\$ 8,500.00	\$ 1,417.20	11,645
Feb	15	\$ 7,200.00	\$ 1,250.47	10,275
Mar	14	\$ 7,000.00	\$ 1,167.10	9,590
Apr	5	\$ 2,500.00	\$ 416.82	3,425
May	9	\$ 4,500.00	\$ 750.28	6,165
Jun	14	\$ 6,700.00	\$ 1,167.10	9,590
Jul	14	\$ 7,000.00	\$ 1,167.10	9,590
Aug	21	\$ 10,200.00	\$ 1,750.65	14,385
Sep	10	\$ 5,000.00	\$ 833.65	6,850
Oct	14	\$ 6,700.00	\$ 1,167.10	9,590
Nov	7	\$ 3,500.00	\$ 583.55	4,795
Dec	19	\$ 9,200.00	\$ 1,583.93	13,015
YTD Totals =	159	\$ 78,000.00	\$ 13,254.96	108,915
(v) Estimated Environmental Impact				
(1.844 lb. Per kWh)	200,839	pounds of CO2 emissions reduced		
(.00342lb Per kWh)	372	pounds of SO2 emissions reduced		
(.0052 lb. per kWh)	566	pounds of NOx emissions reduced		
(vi) Budget Impact				
2010 Budget	\$ 20,000.00			
2010 YTD Budget	\$ 20,000.00			
2010 YTD Spent	\$ 78,000.00			
2010 Budget Balance	\$ (58,000.00)			
Program Costs (since beginning of program)				
Cost prior to 2010	\$ 100,000.00	Estimate		
Cost in 2010	\$ 78,000.00			
Total Program Costs =	\$ 178,000.00			

(vii) Significant impacts on program Cost Effectiveness

With the changing economy Customers are improving existing homes rather than buying new homes. This increased demand on the program.

(ix) Problems and Solutions:

Funds budgeted for Touchstone Energy Home inspections were used to offset the higher demand for the Heat Pump Incentives.

(x) Any major changes

Increase budget levels to match program participation.

Energy Efficient Water Heater Rebate Program

SSVEC offers a \$100 cash incentive for the purchase and installation of a .90+ efficient water heater.

Energy Efficient Water Heater Rebate				
	(i) Number of Incentives Paid	(vi) Cost of Incentives Paid	(iii) Total Estimated Savings by Customer	(iv) Estimated kWh Savings per Year
Jan	8	\$ 800.00	\$ 960.00	7,888
Feb	7	\$ 700.00	\$ 840.00	6,902
Mar	11	\$ 1,100.00	\$ 1,320.00	10,846
Apr	8	\$ 800.00	\$ 960.00	7,888
May	5	\$ 500.00	\$ 600.00	4,930
Jun	1	\$ 100.00	\$ 120.00	986
Jul	1	\$ 100.00	\$ 120.00	986
Aug	3	\$ 300.00	\$ 360.00	2,958
Sep	0	\$ -	\$ -	-
Oct	4	\$ 400.00	\$ 480.00	3,944
Nov	4	\$ 400.00	\$ 480.00	3,944
Dec	5	\$ 500.00	\$ 600.00	4,930
YTD Totals =	57	\$ 5,700.00	\$ 6,840.00	56,204
(v) Estimated Environmental Impact				
(1.844 lb. Per kWh)		103,640	pounds of CO2 emissions reduced	
(.00342lb Per kWh)		192	pounds of SO2 emissions reduced	
(.0052 lb. per kWh)		292	pounds of NOx emissions reduced	
(vi) Budget Impact				
2010 Budget		\$ 25,000.00		
2010 YTD Budget		\$ 25,000.00		
2010 YTD Spent		\$ 5,700.00		
2010 Budget Balance		\$ 19,300.00		
Program Costs (since beginning of program)				
Program began in 2010		\$ -		
Cost in 2010		\$ 5,700.00		
Total Program Costs =		\$ 5,700.00		

(vii) Significant impacts on program Cost Effectiveness

None

(ix) Problems and Solutions:

None

(x) Any major changes

None

Residential Zero Interest Loan Program

Learning from the REST program oversubscription, SSVEC, to avoid announcing a program and not having sufficient monies to fund the zero interest home loan energy retrofit program, SSVEC did not begin advertising the program until May 2010. SSVEC decided to use a slow ramp up for advertising so as to not quickly exhaust the loan fund.

The Residential Zero Interest Loan Program is designed to help bring the older homes in our service area up to current thermal standards. This includes adding insulation to attics to an R-38 or higher, replacing single pane or damaged older dual pane windows, replacing hollow core exterior doors with insulated steel or fiberglass doors. If the Customer makes \$2,000 of the proceeding improvements, they could also replace 60% efficient gas furnaces with a 80% efficient gas furnace or a 14 SEER or higher Heat Pump or A/C with gas under the loan program.

(i) Participation Levels:

In 2010 we issued 19 loans for a total of \$259,058.00

(ii) Marketing Materials:

See advertising section

(iii) Estimated Savings to Participants:

Using the following methodology from the Manual J Load Calculation we estimated* the savings in Gas and Electricity with these formulas.

Heating Season Requirements by building components

$$\text{Heating Season Requirement (in Btu's)} = \frac{\text{Surface Area X Heating Degree Days X 24 hrs}}{\text{R-Value of Surface}}$$

$$\text{Cost of Heating} = \text{Heating Btu's} \div \text{Efficiency of Furnace X Cost per Therm}$$

Cooling Season Requirements by building components

$$\text{Cooling Season Requirement (in Btu's)} = \frac{\text{Surface Area X Cooling Degree Days X 24 hrs}}{\text{R-Value of Surface}}$$

$$\text{Cost of Cooling} = \text{Cooling Btu's} \div \text{Efficiency of A/C X 3125 (Btu per kWh) X Cost per kWh}$$

*Lifestyle and differences in perceived comfort are not included in the estimates and HDD and CDD assume a constant temperature settings.

The following Assumptions were used:

Heating Degree Days	1399
Cooling Degree Days	2836
Cost of Natural Gas	\$1.43 per therm
Cost of Electricity	\$ 0.1217 per kWh
A/C Coefficient of Performance	2.5
3125 Btu's per kWh of electricity	
Old Furnace	60% efficient
New Furnace	80% efficient
Old Windows	U-Value of 1.1
New Windows	U-Value of at least .58
Old Doors	R1.79
New Doors	R5 or better

Using the above formulas we estimate* the 19 completed project will:

Btu Reduction =	408,088,293
Heating Cost Reduction =	\$ 4,603
Cooling Cost Reduction =	\$ 2,345

Improvements to the homes by sealing cracks and openings in the walls and ceilings will also lower the costs above but there is not a reliable method to calculate them other than an estimated 10-20% improvement in heating and cooling cost. Infiltration improvements are not included in the cost savings listed above.

*Variables such as the customer's choice of set temperatures for their comfort cannot be defined.

(iv) Gas and Electric Savings:

Estimated Reduction in Gas Purchases =	3,219.05	therms
Estimated Reduction in kWh Purchases =	19,272.27	

(v) Estimated Environmental Savings (electric only)

CO2 (1.844 lb. Per kWh)	35,538	pounds of CO2 emissions reduced
SO2 (.00342lb Per kWh)	66	pounds of SO2 emissions reduced
NOx (.0052 lb. per kWh)	100	pounds of NOx emissions reduced

(vi) Program Expenditures:

Total amount of money Loaned:	\$259,058
Loan payments received:	\$ 8,951

(vii) Significant impacts on program Cost Effectiveness

None

(ix) Problems and Solutions:

None

(x) Any major changes to program

None

C&I Energy Efficiency Zero Interest Loan Program

The C&I Zero Interest Loan Program is unique in that it rather than promoting a single technology such as lighting (via fixture rebates) or HVAC upgrades, which we expect to be the most common upgrades, it allows for technology that might be specific to a single business sector.

To avoid announcing a new program and not having had time to collect sufficient funds from the DSM adder to fund a C&I project, the launching of the C&I Zero Interest Loan program was in June of 2010. Due to the economy businesses are proceeding slowly but we did have one business begin a project at the end of December. (Funded in January of 2011)

Because this is a "pilot" program that was part of our 2009 rate case, under separate submission, there is a program update that shows the savings of our first loan project that was funded in 2011 and as such will be included in the 2011 DSM report.

For the 2010 time frame

(i) Number of participates

None

(ii) Copies of Marketing Material

Marketing in 2010 was limited to verbal presentations to individual businesses to develop the internal processes. Direct mail marketing is planned for 2011.

(iii) Estimated Cost Savings to Participants

No participants in 2010

(iv) Gas and Electric Savings as determined by M&V process

None at this time

(v) Estimated Enviormental Savings

None at the time

(vi) Total amount of budget spent

None at this time

(vii) Significant impacts on program cost effectiveness

None at this time

(ix) Descriptions of problems and proposed solutions

The current state of the economy has had businesses worried about making any capital improvements, even at a zero interest level. We have the one project (for the local Chamber of Commerce) that is to be completed in 2011 and our hope is that the promotion of the benefits via the Chamber newsletter, will encourage businesses to consider projects in 2011.

(x) Any major changes to program

None at this time

Marketing expense and supporting data for item (ii) as outlined on page 46 of Docket No. E-01575A-08-0328, Decision No. 71274.

Summary of Advertising Costs for 2010 DSM

- A. Co-Op Connection – Monthly bill insert produced by SSVEC. Information related to DSM – energy conservation/management.

Production Costs	\$ 199.64
Printing Costs	<u>\$ 12,486.34</u>
Total Bill Insert Costs	\$ 12,685.98

- B. Currents Magazine

SSVEC is responsible for developing and providing pages for the Currents publication, which is mailed to all SSVEC members.

Total Currents Costs	\$ 18,025.39
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- C. Media Advertising

Media campaign consisting of Energy Efficient Home promotion and Heat Pump.

Print Advertising	\$ 17,843.32
Radio Advertising	\$ 21,404.00
TV Advertising	<u>\$ 59,011.00</u>
Total Media Advertising	\$ 98,258.32

TOTAL FOR 2010 ADVERTISING	\$128,969.69
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Demand Side (Energy Management) articles in the SSVEC Bill Insert *Co-op Connections*

January 2010

“Keeping Warm and Saving Energy this Winter”

.7 page of 2 pages @ \$5,118.56	\$1,791.50
1 hour of labor at \$28.52 per hour	\$ 28.52

February 2010 to May 2010

None

June 2010

“Going on Vacation?”

Some Tips to Reduce Your Electric Bill While You’re Gone.”

.5 page of 2 pages @ \$6,400.38	\$1,600.10
1 hour of labor at \$28.52 per hour	\$ 28.52

July 2010

“Improve Home Energy with a Zero Percent Loan from SSVEC”

.33 page of 2 pages @ \$6,400.38	\$1,056.06
1 hour of labor at \$28.52 per hour	\$ 28.52

August 2010

“Save Electricity and Stay Cool this Summer in Two Easy Steps”

.33 page of 2 pages @ \$6,400.38	\$1,056.06
1 hour of labor at \$28.52 per hour	\$ 28.52

September 2010

None

October 2010

“Shop for Energy Efficiency and Save Money Every Month”

.5 page of 3pages @ \$9,016.59	\$1,502.77
1 hour of labor at \$28.52 per hour	\$ 28.52

November 2010

“Conservation vs. Energy Efficiency”

1.2 pages of 2 pages @ \$5,708.09	\$3,424.85
1 hour of labor at \$28.52 per hour	\$ 28.52

December 2010

“Energy Use During the Holidays”

.7 pages of 2 pages @ \$5,871.43	\$2,055.00
1 hour of labor at \$28.52 per hour	\$ 28.52

Total for Co-op Connections

\$12,685.98

Demand Side (Energy Management) articles in the SSVEC Member Magazine *Currents*

January 2010

"Look for Leaks in Your Home"	page 3	.5 page
"SSVEC and the Smart Grid"	pages 5 & 32	2.5 pages
"Tax Credits for Homeowners"	pages 6 & 7	2.0 pages
"Appliances that Save You Money"	page 8	1.0 page
"Plug into Energy Savings"	page 26	1.0 page

7.0 pages of 32 pages at \$22,038.19 **\$4,820.83**

March 2010

"Energy Star: A Bright Light"	page 3	.5 page
"Conserving Electrical Resources"	pages 8 & 26	2.0 pages

2.5 pages of 32 pages at \$21,831.69 **\$1,705.60**

May 2010

"When is it Time for an Upgrade"	page 3	.5 page
"Recessed Lighting Can Be Efficient"	page 25	1.0 pages

1.5 pages of 32 pages at \$21,462.38 **\$1,006.05**

July 2010

"Zero-Interest Energy Efficiency Loans Offered"	page 5	.5 page
"Pack Up Energy Savings"	pages 6 & 7	2.0 pages
"Wise Use of Electricity"	page 8 & 26	2.0 pages
"Metal Roofs Keep Your Home Cooler"	page 25	1.0 page

5.5 pages of 32 pages at \$21,982.51 **\$3,778.23**

September 2010

"Climate Key for Planting Savings"	page 3	.5 page
"Keeping Tabs on Energy Use"	page 7 & 8	2.0 pages
"Turn a Window into a Door"	page 25	1.0 page

3.5 pages of 32 pages at \$21,906.31 **\$2,396.00**

November 2010

"Together We Save Even More"	page 3	.5 page
"Efficiency Means Savings"	page 4	.5 page
"Lighting the Holidays with LEDs"	pages 6 & 7	2.0 pages
"Save With Layered Bathroom Lighting"	page 25	1.0 page
"The Smarter Grid"	pages 28 & 29	2.0 pages

6.0 pages of 32 pages at \$23,032.95 **\$4,318.68**

TOTAL FOR CURRENTS **\$18,025.39**

Co-op CONNECTION

News and Information from SSVEC

July 2010

Calendar

July 21

SSVEC Board of Directors Meeting

9:30 a.m. at the SSVEC boardroom at 350 N. Haskell Avenue in Wilcox, Arizona. Call to members is at 9:35 a.m.

August 18

SSVEC Board of Directors Meeting

9:30 a.m. at the SSVEC boardroom at 511 E. Wilcox Drive in Sierra Vista, Arizona. Call to members is at 9:35 a.m.

September 6

SSVEC offices closed for Labor Day Holiday

See below for the emergency, after-hours phone number.

September 21

SSVEC Board of Directors Meeting

9:30 a.m. at the SSVEC boardroom at 350 N. Haskell Avenue in Wilcox, Arizona. Call to members is at 9:35 a.m.

Mark your calendars for the Santa Cruz County Fair, September 17-19 and the Cochise County Fair, September 23-26

**Emergency After-Hours
Phone Number for
SSVEC**

(800) 422-3275

Improve home energy efficiency with a zero percent loan from SSVEC

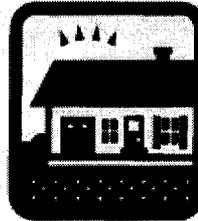
Does your home need a "shot" of energy efficiency?

SSVEC is now offering zero percent interest loans to assist cooperative members who are homeowners in

making energy efficiency upgrades. Loans can be used for improving the insulation of a home, upgrading

doors or windows or replacing existing heating and/or cooling systems with energy-efficient ones.

The funding for this program comes from the



Demand Side Management Surcharge on members' monthly electric bills approved by the Arizona Corporation Commission. Jack Blair, SSVEC's Chief

Member Services Officer, says that \$200,000 in loan funds is available for the remainder of 2010.

Loan amounts from \$2,000 to \$20,000 will be considered. The cooperative will complete credit checks (internally and externally). Loans of \$10,000 or less will be made for 36 months, and loans of more than \$10,000

will be made for up to 72 months.

Blair stresses an individual must own his home in order to be eligible for the program. Work must be completed by a licensed and bonded contractor and only site-built homes are eligible; manufactured homes are not eligible.

Blair adds that funding is limited. In anticipation of a large number of members participating in the program, SSVEC will maintain a reservations list.

For more specific information on the program, check SSVEC's website at www.ssvvec.org or call your local SSVEC office and ask for extension 3474.

Increased funds for SSVEC's Smart Grid Project

Eileen Brien, SSVEC's Smart Grid program manager, reports that the cooperative's share of a recent Smart Grid grant has increased to approximately \$22.1 million. The grant, funded by the Office of Electricity and Energy Reliability in the federal Department of Energy, was submitted by SSVEC, Mohave Electric Cooperative and Southwest Transmission Cooperative.

The increased amount came as a result of Southwest Transmission Cooperative's budgetary revisions to their construction work plan. Brien stressed that this grant requires matching funds and, therefore, so will the increased share of the grant.

SSVEC's original portion of the funds was 48 percent of the total grant; the revised share will be approximately 68.6 percent.

SSVEC recognized by the Solar Electric Power Association.

See back of this sheet!

SSVEC's website is

www.ssvvec.org

Co-op CONNECTION

News and Information from SSVEC

August 2010

Calendar

September 6

SSVEC offices closed for Labor Day Holiday

See below for the emergency, after-hours phone number.

September 22

SSVEC Board of Directors Meeting

9:30 a.m. at the SSVEC boardroom at 350 N. Haskell Avenue in Willcox, Arizona. Call to members is at 9:35 a.m.

Mark your calendars for the Santa Cruz County Fair, September 17-19 and the Cochise County Fair, September 23-26

October 20

SSVEC Board of Directors Meeting

9:30 a.m. at the SSVEC operations facility at 1557 Cooperative Way in Benson, Arizona. Call to members is at 9:35 a.m.

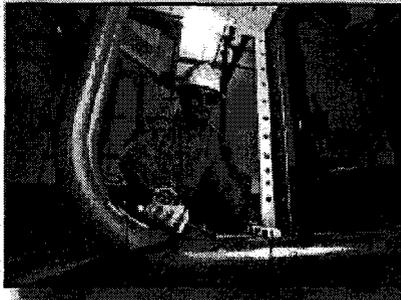
November 11

SSVEC offices closed for Veterans Day Holiday

See below for the emergency, after-hours phone number.

Emergency After-Hours Phone Number for SSVEC

(800) 422-3275



photos courtesy of NRECA

Photographs of Co-op Employees at Work

In early May, the National Rural Electric Cooperative Association (NRECA), a trade association for nearly 1,000 electric cooperatives across the nation, conducted a photo shoot of SSVEC employees at work. In an effort to upgrade their collection of stock photos for brochures, displays and presentations, NRECA contracted with a professional photographer to take photos at several cooperatives including Trico Electric Cooperative (Marana, Arizona) and cooperatives in Vermont, Minnesota and North Carolina.

Each cooperative has permission to use the pictures for in-house projects as well. Wayne Crane, public relations manager for SSVEC, said, "The images are excellent. These photos will be a great resource for SSVEC to use for projects such as our annual report, print ads and PowerPoint presentations."

Top photo: Apprentice Lineman Stanley Post completes line work on the co-op's transmission line alongside Interstate 10 west of Willcox.

Bottom photo: SSVEC Journeyman Lineman Tommy Lancy at work at the Hawes Substation in Sierra Vista.

Save electricity and stay cool this summer in two easy steps

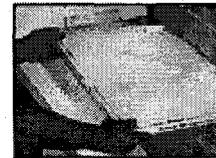
1. Remember to regularly change out the filter in your air conditioner or heat pump.

When filters become clogged, your heat pump or air conditioner must work harder (and use more energy) to keep you cool. Generally experts recommend checking and changing out filters monthly; but depending on the air quality in your home, it may be necessary to do so more often.

2. Turn off fans when you leave a room.

Fans move air which causes a cooling effect on the skin *if people are in the room*. This air movement does not lower the actual air temperature.

If you'd like more information on saving energy, contact your local SSVEC office and enter extension 5510. We'll send you a free copy of the booklet titled "Energy Savings Guide."



Invest in Energy Savings

Shop for Energy Efficiency and Save Money Every Month

OK, so you've replaced your conventional light bulbs with compact fluorescent bulbs, you've dialed the thermostat setting of your water heater a little lower, and you've changed out the air filter on your heat pump.

But you're still looking for ways to reduce your monthly electric bill?

Now might be time to consider an investment in energy efficiency and spend a little to save a lot.

Seal ducts.

Leaking ductwork can account for more as much as 25 percent of heating costs for a home. Consider hiring a contractor to test the

tightness of your ducts and repair leaks and restrictions in your ductwork.

Increase Ceiling Insulation

If your ceiling is uninsulated or poorly insulated, increasing your insulation to R-38 could reduce heating costs by five to 20 percent.

High-Efficiency Windows, Doors and Skylights

Choosing Energy Star replacements for windows, doors and skylights can reduce your heating and cooling costs.

Find complete information at www.energystar.gov.

Purchase Energy-Efficient Appliances

If you're looking to replace appliances (washer, dishwasher, refrigerator), choose Energy Star appliances and electronics. They use less energy than standard models and that means savings for you every month.

Install a Programmable Thermostat

These set-back thermostats can save up to 15 percent on energy costs. And once they're set, you can rely on them to adjust your home's temperature to your family's schedule automatically day in and day out.

You can find other energy-saving tips at SSVEC's website www.ssvect.org or request a free copy of the booklet *Energy Savings Guide* by calling (520) 384-5510.

"Save energy and fight climate change with ENERGY STAR qualified products. They use less energy, save money, and help protect the environment."



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SSVEC Phone Numbers

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Cascabel	212-6001
Elfrida	642-3475
Patagonia	394-2051
Pearce	826-6000
San Simon	845-6000
Sierra Vista	458-4691
Sunizona	824-6000
Willcox	384-2221

Emergency after-hours 800-422-3275

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Sulphur Springs Valley
Electric Cooperative, Inc.
A Southern Rural Cooperative

Co-op CONNECTION

News and Information from SSVEC

November 2010

Calendar

November 25-26
SSVEC offices closed
for Thanksgiving
Holiday

See below for the emergency,
after-hours phone number.

December 13
SSVEC Board of
Directors Meeting
9:30 a.m. at the SSVEC
boardroom at 350 N. Haskell
in Willcox, Arizona. Call to
members is at 9:35 a.m.

December
23-24
SSVEC offices closed
for Christmas Holiday
See below for the emergency,
after-hours phone number.

December 31
SSVEC offices closed
for New Year's Day
Holiday
See below for the emergency,
after-hours phone number.

January 19
SSVEC Board of
Directors Meeting
9:30 a.m. at the SSVEC
boardroom at 350 N. Haskell
in Willcox, Arizona. Call to
members is at 9:35 a.m.

Emergency After-Hours
Phone Number
for SSVEC
(800) 422-3275

Conservation vs. Energy Efficiency

Where are the real energy savings?

One strategy people use for controlling their monthly electric bill is to conserve energy—turn it off . . . do with less. And while it's a good idea to turn off lights and appliances when they're not being used and setting the thermostat a little higher in the summer (and a little lower in the winter), real savings can be made through increased energy efficiency.

A recent study titled "Public Perceptions of Energy Consumption and Savings" found that most participants mentioned "curtailment" (turning off lights and driving less) rather than efficiency improvements (change to compact fluorescent light bulbs and energy efficient appliances) as effective ways to save energy. (The complete study can be found at <http://www.pnas.org/content/107/37/16054.full>)

The fact is that greater savings can be obtained by paying attention to efficiency of lighting, appliances, water heating and heating and cooling.

Improved performance

The greatest savings are gained when those items are properly maintained and cared for. For example cleaning the glass globes surrounding a bulb will result in more usable light, vacuuming the coils of your refrigerator regularly and checking the gasket seal can mean better efficiency, and regularly changing a furnace or heat pump filter can improve the performance and keep you more comfortable for each energy dollar you spend.

So, being energy-smart means taking a multi-faceted approach. Sure, turn off the ceiling fan when you leave the room, because after all the fan cools people . . . not the air. And check for the Energy Star label when you shop for a replacement appliance.

But most of all, take steps to be sure all your lighting, appliances and heating/cooling units are operating at peak efficiency.

Tip of the Month



Check your furnace or heat pump filter monthly and change as necessary. You'll get peak performance from your unit when you do!

SSVEC's website is
www.ssvvec.org

Turning off the power sometimes makes sense

Conservation/Curtailment Does Have Its Place

This month's front page article stressed that efficiency rather than "curtailment" is the better way to save on your monthly electric bill.

So are there times when it makes sense to "turn it off"? Absolutely!

1. When you leave the room

Obviously if you're not there to enjoy the benefits of the appliance (lighting, TV, fan), you should turn it off. And though you may be "coming right back," turning off these items when you leave is a good habit.

Looks like Mom (or Dad) was right all along!

2. When you're going to be away from home for several days or weeks

OK. This is a "no-brainer."

The water heater will come on as soon as the water in the tank cools even if no one is home to use it. And it will continue to do so if left on. If you have an electric water heater and you're going to be gone for more than a couple of days, turn off the power at the breaker. It's simple.

(Just remember when you return home you'll have to turn it on again a few hours before you need hot water to allow it time to heat the water in the tank.)

The same idea goes for a refrigerator. If you plan to be gone for more than a couple of weeks "clean out the fridge," unplug it and prop the door open so air can circulate before you leave.

You won't have to worry about spoiled food, and you should be able to save enough on your energy bill while you're gone to replenish milk, eggs, and salad dressing when you return.

3. If you own "vampire" electronic equipment

If you own a computer/printer, big screen TV, a cell phone charger or any item that has a little light that comes on when you plug it in, you have a "vampire" or "phantom" load which is taking a bit of electricity all the while it's plugged in . . . even if the item isn't turned on. It's a small amount of electricity, but multiplied times several of these items over the course of a year, it can add up!

Rather than unplugging each item when you're finished, try this simple solution. Purchase a multi-outlet plug strip that can accommodate several plugs. When you've finished using the computer and turn it off or when you remove all the phones and batteries from the chargers, turn the strip switch off and you've "slain the vampire."

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December 23-24

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See below for the emergency, after-hours phone number.

December 31

SSVEC offices closed for New Year's Day Holiday
See below for the emergency, after-hours phone number.

January 17

SSVEC offices closed for Martin Luther King, Jr./Civil Rights Day Holiday
See below for the emergency, after-hours phone number.

January 19

SSVEC Board of Directors Meeting
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Emergency After-Hours Phone Number for SSVEC

(800) 422-3275

Energy Use During the Holidays

Be aware of all the uses of electricity to provide for your guests' comfort



It's not unusual for electric bills to rise during the holiday season. Cooler weather combined with out-of-town guests, entertaining, and extra cooking can increase the amount of electricity you use. While you enjoy

holiday activities and the fellowship of family and friends, be aware of the great benefits electricity provides.

May Your Holidays Be Bright!

Though home lighting usually accounts for only a small portion of your monthly electric bill, it probably will increase this time of the year. Because the days are shorter, you use your lights when you get up in the morning and turn them on earlier in the evening. With the holidays and holiday activities, that porch or driveway light is probably on longer. If you entertain, you're sure to be using more lights than usual.

One area you can save with holiday decorative lighting is to use strings of LEDs (light-emitting diodes). They use only a tiny fraction of the energy that conventional incandescent lights do and they have a much longer life.

Being the Good Host

A good host makes his guests comfortable and you will probably use more electricity in fulfilling that role. For example, you will probably use more lighting--outside lighting along walkways and porches for guests and nightlights in hallways and bathrooms for the benefit of your overnight guests.

Those out-of-town guests who are staying with you are going to use more hot water (showers, clothes to be laundered and extra runs of the dishwasher).

And more people in the house probably means more use of CD and DVD players, game boxes, computers (particularly to check e-mails), and of course TV for all those bowl games!

In addition, the exterior doors of your house will be opening a lot more often allowing cold air in. And the refrigerator door will be opened more often and that will allow warm air into the refrigerator causing it to run a little more than usual.

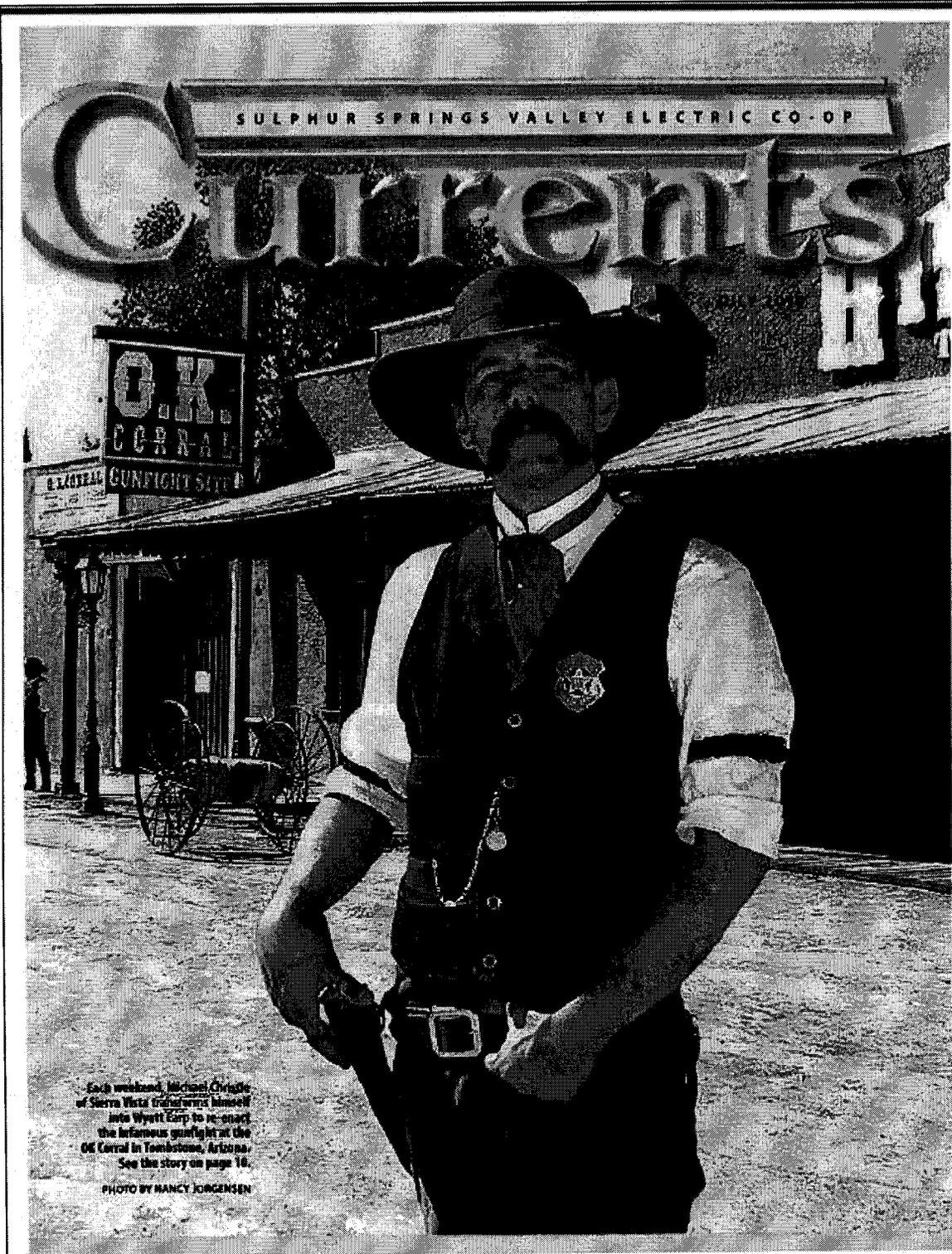
Take advantage of your oven and range this time of the year and combine preparation of various dishes to get the most of your energy dollars. And in this case, enjoy the extra warmth they provide to your home while you cook and bake.

Energy Efficiency

Tip of the Month

Feel around doors and windows for air flow. Adding weather stripping or caulk around a leaky door or window can lower energy bills by keeping your heating system from working too hard to compensate for air leaving your home.

Source: U.S. Department of Energy



Each weekend, Michael Christie of Sierra Vista transforms himself into Wyatt Earp to re-enact the infamous gunfight at the O.K. Corral in Tombstone, Arizona. See the story on page 18.

PHOTO BY NANCY JORGENSEN

Zero-Interest Energy-Efficiency Loans Offered

SSVEC is offering zero-percent interest loans to help cooperative members upgrade their homes to improve energy efficiency.

Loans can be used to improve the insulation of a home, upgrade doors or windows, or replace existing heating/cooling systems with energy-efficient models.

Funding for the program comes from the demand-side management surcharge on members' monthly electric bills. That was approved by the Arizona Corporation Commission.

Jack Blair, SSVEC's chief member services officer, explained that \$200,000 in

loan funds is available for the remainder of 2010.

"Loan amounts from \$2,000 to \$20,000 will be considered," said Blair. "The cooperative will complete credit checks."

Blair stressed that an individual must own his home to be eligible. Work must be completed by a licensed and bonded contractor, and only site-built homes are eligible.

Blair noted funding is limited.

"In anticipation of a large



number of members participating in the program, SSVEC will maintain a reservations list," he said.

For more information, check SSVEC's website at www.ssvec.org or call your local SSVEC office and ask for extension 3471. ■

Meet SSVEC's Newest Director

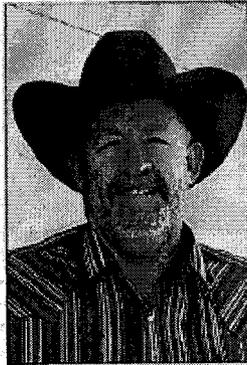
In April, co-op members in District 3 elected Joe Smith as their new SSVEC director.

Joe, who lives in Dragoon, is a native in the area and president of Texas Canyon Rock and Sand.

Joe grew up on the C-Bar Ranch in Texas Canyon and graduated from Benson High School. He left the area to pursue a degree in biology from Beloit College in Beloit, Wisconsin.

He returned to Southeast Arizona, and worked at a variety of jobs, including hog farms in Animas, New Mexico, and Bonita, Arizona; Hughes Aircraft; and a mining and road construction company.

While working the latter



Joe Smith, SSVEC director for District 3 (Kansas Settlement, Cochise, Pearce-Sanitas and Dragoon).

job, he grew Texas Canyon Rock and Sand into a self-sustaining business with his father and two brothers.

Joe served on the Benson School Board for five years.

Asked what skills and expertise he brings to the SSVEC board, he said, "I have a strong business background and a knowledge of the local community and the people served by the cooperative."

Joe sees two major challenges facing SSVEC.

"One issue is maintaining electricity costs as effectively as possible in light of rising fuel prices," he said. "Second, we have to maintain reliable service as our communities grow."

Joe and his wife, Cassie, have two children: Whitney (deceased) and an adult son, Nicholas, who is an accountant in Tucson. ■

Pack Up Energy Savings

When taking a vacation, do you think about giving your meter a break, too?

By Pam Blair

It's easy to forget about conserving electricity when you and your family pack up the car to head off on vacation or a lengthy trip. But if you don't think about it before you leave, you could face an unpleasant—even irritating—surprise when you return.

While it seems to make no sense, your energy bill can be the same or even higher when your home is unoccupied. Some equipment, motors and electrical devices use power, whether or not anyone is home.

Let your meter know you are gone by preparing your home before you leave. Then you can enjoy your vacation knowing you are not wasting energy—or your money.

Preparing the Home for Your Absence

Air conditioning and heating are the top users of electricity. Before you pull out of the driveway, you turn the thermostat to its lowest possible setting, thinking you have effectively turned off the system.

In reality, you have only turned it to the lowest setting—generally 55 degrees. That means it will come on each time the temperature inside the house

drops below 55 degrees. In the fall, winter and even spring, that could be every day. The same principle applies to your air conditioning system.

To really disable your heating and cooling system, shut them off at the breaker panel. Before you do that, though, make sure the house won't get so cold your plumbing is at risk.

If you fail to shut off the breaker, your heating costs could actually rise when you are not home. That is because clothes drying, cooking, bathing and human activity give off heat that contributes to a home's temperature. Without a human presence, the heating system must work harder.

The second-biggest user of electricity is your water heater. Because it is out of sight, it is easy to forget. If you will be gone for more than two days, turn the heater off at the breaker. Left on, the water heater will work to keep all 50 or more gallons of water in the tank heated to 120 to 140 degrees, 24 hours a day.

Refrigerators and freezers draw electricity to keep your food cold and frozen in your absence. If you will be gone for a prolonged time, empty them out, shut them off at the breaker and prop open the doors to prevent mildew from growing inside.

Anything that uses clocks, memory, remote control, microprocessors and instant-on features—such as televisions and VCRs—consume small amounts of electricity even when turned "off." Unplug those items before you leave.

Rather than leave lights on all day, use a timer.

Detecting Other Reasons for High Bills

Staying home and trying to figure out what is behind an increase in your electric bill? Consider these possible causes:

- Did your bills go up dramatically at the beginning of summer or winter, when you regularly began running the air conditioning or electric heat? Perhaps temperatures are extreme. Your system also may need help. Change filters and check window caulking. If that doesn't stabilize your bill, call your utility or a heating/air-conditioning professional for help with more complicated things, such as thermostat operation and compressor cycling.

- A defective water heater thermostat can prevent the heating element from cutting off, causing

What's Up With My Electric Meter?

Often consumers faced with higher-than-usual bills wonder if their meter is wrong, if it was read improperly or if it has a short and is running fast.

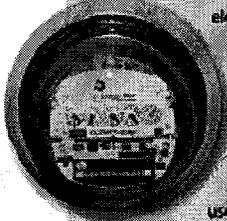
While those things can happen, they are rare.

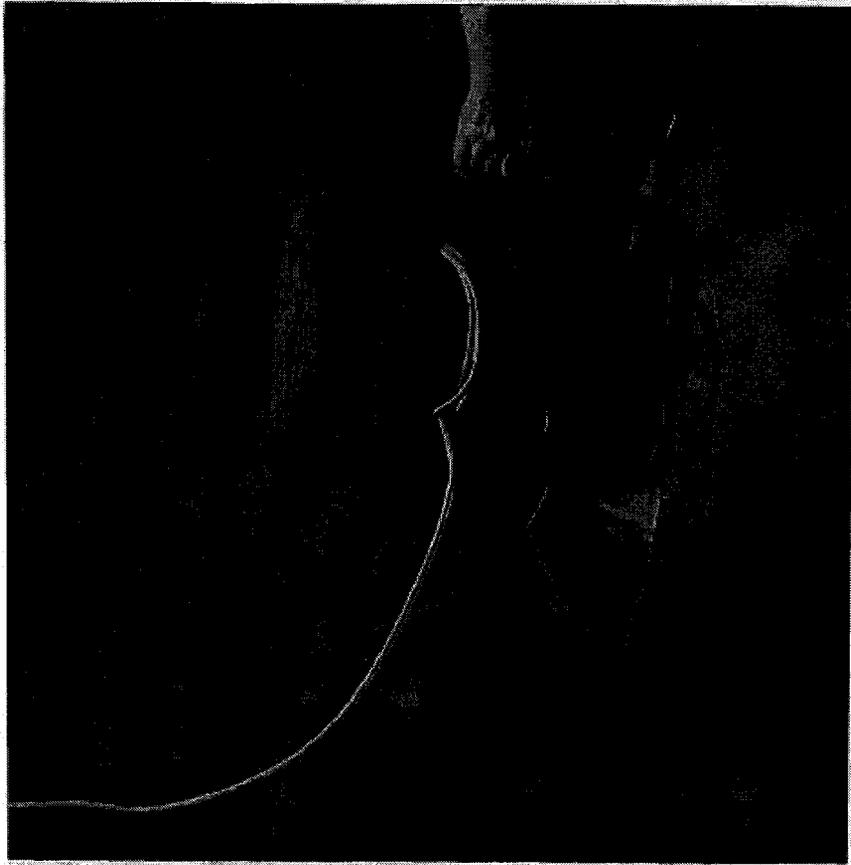
Your electric meter is a finely calibrated device that is almost always within the plus or minus 2 percent tolerance range. Meters are regularly tested to ensure accuracy.

High bills rarely are due to a faulty, fast-running meter. In fact, a meter tends to gradually slow with age, benefiting the consumer.

The most common cause of high bills is an increase in electrical usage.

When you are home, you use electricity for lighting, heating and cooling, cooking, cleaning, operating electronics and powering your computer. But the electricity is on even when you are gone, powering your water heater, refrigerator, pumps and all of those electronics that have a built-in clock and automatic "on" function. They are "phantom" power users, drawing a small amount of electricity whenever they are plugged in, regardless of whether they are turned on.





When you pack your bag and leave for vacation, make sure you are not wasting electricity at home. Unplug non-critical devices to give your meter—and your power bill—a break.

Photo by Mike Teegarden

Do the Math

To better understand how you use electricity, read your meter at about the same time each day for one week. Note activities done one day, but not the next, and special circumstances, such as overnight guests. That will help you identify reasons for varying usage. Subtract the previous day's reading from the current reading to see how many kilowatt-hours of electricity you use during a 24-hour period.

continuous operation. In two-element heaters, failure of one element can cause the other to operate more.

- Do you live in a rural area and have a well? The cushion of air above the water in the pressure tank can be lost, or waterlogged, causing the tank pressure to drop rapidly when the pump cycles off. When this occurs, the pump continuously cycles on and off, causing higher-than-normal electric usage.
- Consider your living habits. Do you love gadgets? Most are powered by electricity. Perhaps you have a growing family, and you recently purchased a computer and a dishwasher. Do you love to cook? Do you and your family spend hours surfing the Internet? Did you have guests who stayed for weeks at a time, and who left the lights on and did laundry? All of these activities add to your electricity usage.
- Has anything changed in your household? Spring or fall cleaning, holiday activities, sickness

or convalescence at home, and changes in the size of the family—for example, a new baby or a college student returning home—often result in increased electrical usage.

- If you have moved into a new home, consider whether your new dwelling is larger than your former home, is in a location with more extreme temperatures or wind, has a larger water heater and/or heating equipment, is less well insulated, has fewer draperies or has manual heating controls.
- Billing periods can vary from month to month. Note whether the month contained five weekends or a holiday—time when usage tends to be greater.
- Other causes of bill variations are defective appliances, frost on a refrigerator unit, home repairs, lack of good appliance maintenance, defective house wiring, exposure of pipes and the water heater to cold air, and leaking hot water faucets. ■

Wise Use of Electricity

Smart grid technology improves energy efficiency for utilities and consumers

By Mike Federman

For some consumers of electricity, the future of energy use is here today.

Burgeoning smart grid technology gives consumers and their utilities more control over when and how they use electricity.

Their goal is energy conservation, which can sustain affordability and minimize the need for new sources of electricity generation.

"We want to bring data to customers so they can make decisions about their energy consumption," says Eileen Brien, smart grid program manager for Sulphur Springs Valley Electric Cooperative (SSVEC), based in Wilcox, Arizona.

Creating a two-way communications network is the first step to using smart grid technology. To achieve this, SSVEC has accepted a grant from the U.S. Department of Energy (DOE) to pay for system upgrades that include 150 miles of fiber optic line, improvements to the co-op's supervisory control and data acquisition master station, installation of 2,500 home energy displays and automated metering infrastructure, Brien says.

"This is part of a 10-year plan that we can do in about three years," she says. "Our company will continue to reinvest in our infrastructure, but with DOE funds, this project will be more affordable and we can do it on an accelerated basis."

SSVEC will match its portion of funding, which is about 68 percent of the \$32.2 million price tag of an integrated smart grid project that includes



Sulphur Springs Valley Electric Cooperative Apprentice Lineman David Clark splices a fiber optic line as the co-op upgrades its power lines and substations to handle the data communications required for smart grid technology.

Photo by Larry Scott

Southwest Transmission Cooperative—SSVEC's transmission provider—and Mohave Electric Cooperative in Bullhead.

DOE funds come from the American Recovery and Reinvestment Act.

"It is doing what it is supposed to do: stimulating the economy," Brien says, noting SSVEC's project already has

Continues on page 26

Smart Grid Defined

The Bonneville Power Administration (BPA) operates transmission lines across six states that carry wholesale power to public utilities in the Northwest and connect with transmission lines leading to other regions of the country.

BPA defines smart grid as a system that uses technology to enhance power delivery and use through intelligent two-way communication.

With increased communication and information, smart grid can monitor activities in real time, exchange data about supply and demand, and adjust power use to changing load requirements, according to BPA.

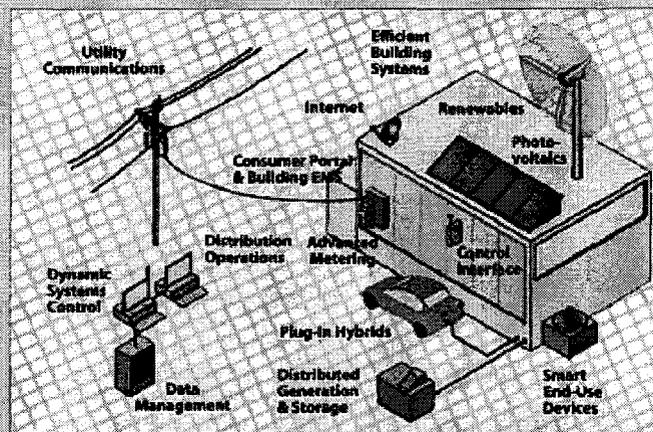


Illustration courtesy of the Bonneville Power Administration

Smart Grid

Continues from page 8

created new positions at the cooperative to handle smart grid applications.

Through better communication with end users, SSVEC expects to achieve more efficient management of electricity distribution. Benefits of smart grid technology is a system that:

- Can sense overloads and reroute power to prevent or minimize an outage.
- Can meet increased consumer demand without adding infrastructure.
- Will accept energy from virtually any fuel source, including solar and wind, as easily as coal and natural gas.
- Enables real-time communication between consumers and utility so consumers can tailor their energy consumption to individual preferences, such as price and/or environmental concerns.
- Can deliver high-quality power that is free of sags, spikes, disturbances and interruptions to run an increasingly digital economy and the data centers.
- Is resistant to sabotage, vandalism and natural disasters as it becomes more decentralized and reinforced with smart grid security protocols.

Brien says SSVEC will work with members to help them manage personal energy use, possibly including incentives for members who are willing to conserve energy during peak periods, which will reduce overall costs to the utility and maintain affordable rates.

"We are trying to help consumers change their behavior and understand energy use," Brien says. "The average consumer gets it, that if they turn up the air conditioner on a hot day, they will pay more on the back end with their electric bill. But some things are kind of fuzzy. They are not really sure how kilowatt-hours work. We want to educate consumers and let them have a little say about their bill."

The Role of Conservation

Better communication and control of their energy by end users is important to utilities in the Northwest who rely on the Bonneville Power Administration (BPA) for most of their wholesale power.

New contracts that go into effect in 2011 will change how utilities buy power from BPA.

The region's low-cost hydro system has reached capacity, requiring utilities

to conserve energy rather than face the expense of building new power plants.

"Smart grid gives a lot of different choices to end users," says BPA spokeswoman Katie Pruder-Scruggs. "It gives utilities more flexibility and stretches the value of the hydro system."

The Northwest Power and Conservation Council estimates 85 percent of the region's load growth in the next 20 years can be met through energy efficiency.

"That's really ambitious," Pruder-Scruggs says, "but we are fully committed to reaching these targets with our customers."

BPA has partnered with utilities and technical firms in five states in a regional smart grid project. The \$178 million project includes \$89 million in matching funds from DOE.

A key to success is maintaining a high level of service while bringing about change.

"We want people to be comfortable with new technology," Pruder-Scruggs says. "The whole concept of energy efficiency is not to have people shivering in the dark. It is to use our resources more effectively and make better use of technology." ■

Metal Roofs Keep Your Home Cooler



A completed garage metal roof with matching trim and flashing.

Q: I heard metal roofs qualify for an energy-efficiency tax credit. How does a metal roof conserve energy? Are they worth the added cost? What type is best?

A: Many—but not all—metal roofs qualify for the federal energy conservation tax credit for 2010. Metal roofs save energy by keeping your house cooler during the summer, which can reduce electric bills if your home is air conditioned.

A metal roof has a negligible impact on energy efficiency in the winter.

In general, to qualify for the energy tax credit the roof must meet Energy Star qualification standards. For roofing, this means the total solar reflectivity (TSR) must be greater than 25 percent when new and 15 percent after three years of aging. To be sure the roofing qualifies, ask for the specifications and a manufacturer's certification statement (MCS).

It pays to be diligent. I recently got quotes on a roof installation and several roofers told me their asphalt shingles qualified for the tax credit. They actually did not qualify.

The amount of the tax credit is 30 percent of the material cost of the roof (not installation expenses) to a maximum of \$1,500. Use IRS form 5695 to apply for the tax credit and save the payment receipt and MCS in case of a tax audit.

For my own home project, I selected a Classic Metal Roofing Systems aluminum roof. It is made from 98 percent recycled aluminum, and the 1-by-2-foot panels are formed to simulate a cedar shake roof. It's attractive and unique.

To install the aluminum panel roof, a special film underlayment was nailed down with plastic clips and stainless steel fasteners over the existing shingles, which saved the expense of tearing off the old shingles. Each aluminum panel interlocks with the adjacent ones on all four sides. The top of each panel is held

down by a stainless steel nail through a hole in the upper corner and an aluminum clip attached midway across the top. It is designed to stand up to a 120-mph wind.

Although it is more expensive to install than an asphalt shingle roof, my new metal roof will never have to be replaced. From a lifetime cost comparison, it is cheaper than installing an asphalt roof every 20 to 30 years. I get a 3-percent reduction on my homeowner's insurance because of reduced fire hazard.

Most metal roofs reflect more of the sun's heat than do asphalt shingles, particularly black shingles. My metal roof has a TRS of 0.43. A black asphalt shingle roof has a TRS of only 0.05. This keeps the roofing materials cooler so less heat is radiated down through the ceilings to the living area. The underside of the aluminum surface has lower "emissivity"—the ability to emit heat—than shingles, so less heat radiates downward.

The final energy advantage is the Classic Metal Roofing aluminum panels are relatively thin, with the contour of shakes formed into them. This contour creates an air gap between most of the roofing and the roof sheathing or shingles below it. The gap allows some outdoor air to circulate up under the metal roof panels to keep them cooler.

Steel roofing is another option. Painted standing seam or tile steel roofing is durable. The bright colors and unique appearance are signatures of upscale homes.

The following companies offer metal roofs:

- ▶ **Classic Metal Roofing**
(800) 543-8938
www.classicmetalroofingsystems.com
- ▶ **Conklin Metal**
(800) 282-7386
www.metalshingle.com
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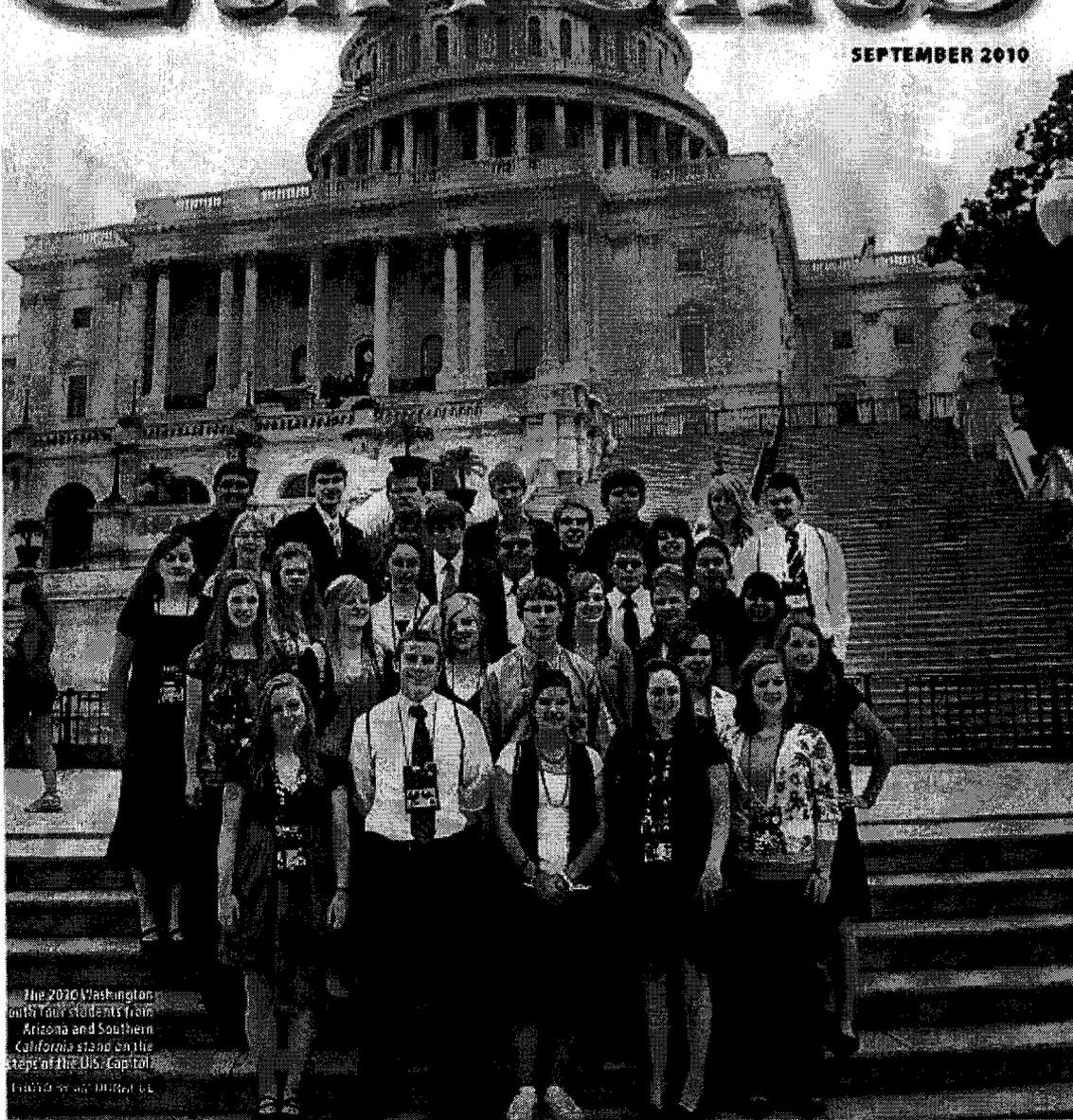
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SULPHUR SPRINGS VALLEY ELECTRIC CO-OP

Currents

SEPTEMBER 2010



The 2010 Washington South Fair students from Arizona and Southern California stand on the steps of the U.S. Capitol. Photo by Jeff H. Bell, U.S. Capitol.

8.50 x 11.00 in

ANZA ELECTRIC COOPERATIVE
Katherine Macher

ANGONA'S GENERATION AND TRANSMISSION COOPERATIVES
Geoff Olfather

DUNCAN VALLEY ELECTRIC COOPERATIVE
Steven Lunt

ELECTRICAL DISTRICT NO. 2
ReneAnn Beaver

GRANHAM COUNTY ELECTRIC COOPERATIVE
Susan Romney

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Wayne Garcia

GRAND CANYON STATE ELECTRIC COOPERATIVE ASSOCIATION
Jim Donahue

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Climate Key for Planting Savings

You have upgraded lighting, appliances and insulation to help lower your monthly electric bill. What else can you do? Plenty, if you have a yard with landscaping options.

The right combination of plants and trees can unearth hidden energy savings.

Landscaping with energy efficiency in mind can save enough energy to recoup your investment in less than eight years, according to the U.S. Department of Energy.

Climate Clarity

The United States is divided into temperate, hot-arid, hot-humid and cool regions. The climate determines the direction your planting should take.

In hot-arid regions of the Southwest, shade over roofs, walls and windows is a must.

Homeowners without air conditioning should encourage summer breezes. Those with conditioned air should try to block or deflect winds

Simple Shading

You might be protected from the hot summer sun in your home, but your electric bill isn't. Heat absorbed through windows and roofs make the air conditioner work harder.

Shading a home with trees could drop the surrounding air temperature 9 degrees Fahrenheit. Since cool air sinks down, the air under trees may be up to 25 degrees cooler.

Different trees serve unique purposes. To block summer heat, but let the winter sun through, use deciduous trees. Evergreens and shrubs are ideal to provide continuous shade and block heavy winds.

Don't forget about shrubs and groundcover plants. These short, but sturdy, shade-givers reduce heat radiation, cooling air before it reaches a home's walls and windows. Shading an air conditioner can increase its efficiency up to 10 percent.

Shading takes time. A 6- to 8-foot deciduous tree planted

near a home will begin shading windows in a year. Depending on the species and the home, the tree will shade the roof in five to 10 years.

Windbreaks

Shrubs and trees create windbreaks—essentially walls to keep the wind chill away from a home. That saves the home from higher heating costs.

It is best to block wind with a combination of trees and shrubs with low crowns—foliage that grows close to the ground. Evergreens are ideal. Combined with a wall or fence, they can deflect or even lift wind over a home.

For the best protection, leave two to five times the mature height of the trees or shrubs between the windbreak and the protected home. ■

Find out more about your climate, microclimates, windbreaks, and shading dos and don'ts at www.energy savers.gov. To learn more ways to save energy around your home, visit www.togetherwecan.com.



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Chicken Chores 12

The Case kids learn important life lessons running their own chicken business.

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September 2010
Vol. 45, No. 5

Keeping Tabs On Energy Use

Appliances can make the electric meter spin, even when not in use

By Brian Stoboda

Are you blowing money on an inefficient heating system? Is your coffeemaker costing you cash even when it isn't percolating?

Knowledge is power when it comes to controlling spending on electricity—and acquiring that knowledge is becoming increasingly easier.

Thanks to the American Recovery and Reinvestment Act, electric utilities have more than \$3 billion for deploying smart grid technologies. Most of the technologies and equipment purchased by utilities will be invisible to the consumer. However, the in-home display—a key component of tomorrow's smart grid—may wind up on your kitchen counter or hallway wall.

In-home displays devices inform homeowners of the amount of electricity their homes are using in almost real time. The

devices are connected—either directly or wirelessly—to your electric meter. In-home displays are being developed to provide a variety of information related to your energy use, including the number of kilowatt-hours consumed and how much money you are spending on electricity.

Placing these devices inside the home could give homeowners information they need to save energy. For the first time, you could see in real time how much it costs to run the air conditioning, holiday lights, television, computer or any other device.

With in-home displays, you will be less likely to find surprises when you open the monthly bill.

Research conducted by the Arlington, Virginia-based Cooperative Research Network (CRN) shows most consumers who have an in-home display use less energy than those without one.

However, research also shows most homeowners stop paying attention to the devices after a few months. As with many electronic devices, they become part of the background noise of everyday life.

Yet, it appears seeing the devices for just a couple of months has a long-term effect on a consumer's electricity use behavior. Even after they stop paying attention to the devices, most homeowners still use between 1 percent and 3 percent less energy than before.



Putting the Kill A Watt to the Test

One of the tools available to help consumers assess the electric consumption of home appliances and electronics is the Kill A Watt, which retails for about \$30. Ruralite decided to put it to the test.

Plug the device into an outlet and connect the 110-volt item you want to measure. Depending on which of five buttons you push, you get readings of volts, amps, watts, hertz, elapsed time and kilowatt-hours (kWh) consumed. Amps and watts could be important in sizing a generator, but I was most interested in the kWh readings, since that translates directly to charges on my electric bill.

I started with my office space heater, set at 75 degrees. After one hour of operation, it racked up 1.48 kWh. That is the unit of measure your utility uses to bill you. Multiply the kWh used by the rate. At 10 cents a kWh, the cost would be 14.8 cents for one hour. Assume I run the heater 3 hours a day, five days a week, for 12 months. The annual cost adds up to \$106.56.

I moved to my radio. It runs all workday. To my surprise, the kWh display showed zero. I wondered if the unit was defective, then realized the energy draw is so low the Kill A Watt had nothing to register. I presume that if I left it on longer, it would register something—but it isn't breaking the bank.

At home, I discovered my vacuum cleaner draws roughly the same load as the space heater. Thankfully, it runs for a shorter time. My lamp with a 15-watt compact fluorescent light costs me 1 cent if left on for 10 hours. My CPAP machine costs me 3 cents a night in electricity—just \$10.95 a year.

Unfortunately, the Kill A Watt does not measure power consumption of 220-volt appliances, which account for most of a homeowner's power bill.

—Pam Blair

Types of In-Home Displays

In-home displays come as two types. One is supplied by the utility and connects directly to the meter.

The second can be purchased by the consumer and attached either to the meter, somewhere inside the home or to the breaker box.

Utility-grade displays are not yet available to customers in most parts of the country, but off-the-shelf products have been available for about a year.

A small number of utilities are conducting test pilots of in-home displays to better understand their effectiveness. While preliminary research shows homeowners who have an in-home display use less energy, little is understood about precisely how these consumers are cutting back on their energy use.

These questions must be explored prior to a utility deploying an in-home display on a large scale.

Consumers who want an in-home display don't



© Ruralite - Phil Asay

have to wait for their utility to offer one. Several manufacturers offer in-home displays, which will report electricity use for the entire home or for one specific outlet. With some devices, consumers need a program in their electric rate and make sure the device is installed correctly for it to work accurately.

The devices give homeowners an idea of how much energy they are consuming and how much is saved when, for example, they install energy-efficient lighting or turn down the thermostat.

A whole-house in-home display straps onto the outside of the meter and sends a signal to a counter-top display. You will need to pick a model that works with your type of meter. Other devices connect to a breaker panel. These devices should be installed by a licensed electrician. Once installed, homeowners can see accurately how much electricity their homes are using. You can expect to pay \$75 to \$150 for such in-home displays.

Some devices allow you to connect only one appliance or power strip to the display. These less expensive devices demonstrate how much energy many home appliances and electronics use. They also show many items continue to use energy even when turned off. These types of in-home displays cost \$30 to \$90.

Where to Get an In-Home Display

In-home displays are available through several Web sites and some retail stores. Features and cost vary greatly. Verify the device will work with your meter and whether it requires professional installation.

Some utilities loan units, and a growing number of local governments are providing in-home displays through local libraries or other government offices for short-term use by consumers.

Whether in-home displays catch on and become permanent fixtures in the American home remains to be seen. Pilot studies by utilities will help determine the future of this product.

However, for anyone who wants to take a proactive approach to understanding electric consumption—and who is willing to monitor the display regularly—the in-home display may be worth exploring. You could use the knowledge an in-home display provides to change the way you use electricity in your home and save some money. ■

Brian Sloboda is a program manager specializing in energy efficiency for the Cooperative Research Network, a service of the National Rural Electric Cooperative Association. The Cooperative Research Network monitors, evaluates and applies technologies that help electric cooperatives control costs, increase productivity and enhance services to their consumers.

Typical Wattages

(Watts=Wts. • 1000=kWh)

Clock radio:	10
Coffeemaker:	900-1,200
Washer:	350-500
Dryer:	1,800-5,000
Dishwasher:	1,200-2,400
Hair dryer:	1,200-1,875
Laptop computer:	50
Microwave:	750-1,100
Refrigerator:	725
Space heater:	750-1,500
Television:	65-170
Toaster:	800-1,400
Vacuum:	1,000-1,400
Water heater:	4,500-5,500

Source: U.S. Department of Energy

Turn a Window Into a Door

Q: In my dining room I have an old, wide window in a brick veneer wall. I want to replace it with a sliding glass door. Does this make energy sense? If so, how do I make this improvement?

A: Your home improvement plan does make energy sense, but only if you select an efficient sliding glass door and install it properly. I made this improvement to my kitchen last year. The overall efficiency of an airtight sliding glass door can be better than an insulated partial wall with a large inefficient window above it. My double horizontal slider window had double-pane glass, but the gap seal failed on one panel and all of the weather-stripping was worn out, creating air leaks.

Although homes are built differently, you generally will find a lot of reinforcing lumber framing around window openings. This is great for structural strength, but leads to inefficient thermal bridges and leaves

little room for insulation. Once I removed the dry wall, I found the sill plate had not been sealed properly and air was leaking in at the bottom of the wall.

I selected a high-efficiency sliding glass door made by Thermal Industries (www.thermalindustries.com). It uses a steel-reinforced vinyl frame and triple-pane glass panels. Two of the glass panes have a low-emissivity coating and dense krypton inert gas between them. This provides a high insulation level and cuts down on noise. Always select a door that is Energy Star-qualified and meets federal energy tax credit requirements.

Another option is double-swinging French patio doors. If you have clearance for swinging doors, these are more

efficient. Swinging doors close on compression weather-stripping, so they seal better over the long term than a seal on sliding glass doors. When you open both swinging doors, there is more open area for natural ventilation.

Spend a few extra dollars and rent a large masonry saw to cut through the brick wall in one pass from outdoors. Wear a good N95 breathing mask whenever you cut masonry.

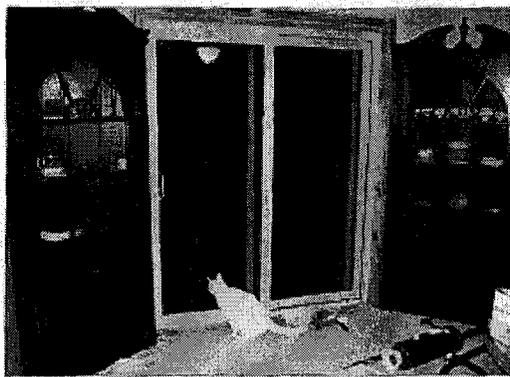
With a brick veneer wall, the width of the brick and the total wall framing thickness will be about twice the width of the sliding glass door frame. The installer recommended positioning the door out on the brick to create a more stable door base. Indoors, this also recesses the door, making it easier to install tight thermal drapes during winter.

Cut straight down from the existing window opening. You will have to build out the interior opening with studs to the same width as the brick, but this is still easier than resizing the entire opening. This leaves a gap between the new studs and the brick that must be insulated.

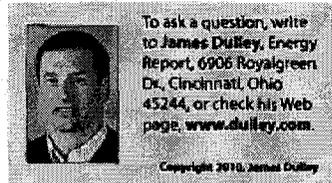
I used Great Stuff low-expansion foam, but fiberglass is also effective. Once the foam is sprayed in and expands, the insulation was covered with 3/4-inch pressure treated plywood. Thermal Industries had custom-sized the door to fit in this final opening size with about one-half inch overall clearance. Make sure to use shims for all screws and don't over tighten them. The framing on a large door can easily be pulled out of balance during installation without supportive shims.

My door frame was placed over pressure-treated lumber trimmed with aluminum flashing to raise it because I mistakenly cut the brick too low. Whether you install a door over lumber, brick, or a precast sill, liberally apply silicone caulk between the bottom of the door frame and the base to prevent leaks. There are weep vents in the door track to prevent water collection.

To see all of the project photos and details, visit www.dulley.com/newdoor.



An installed sliding glass door with only interior trim still needed.



To ask a question, write to James Dulley, Energy Report, 6906 Royalgreen Dr., Cincinnati, Ohio 45244, or check his Web page, www.dulley.com.

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SULPHUR SPRINGS VALLEY ELECTRIC CO-OP

Currents

NOVEMBER 2010

Bob Cook, an operations manager at Sulphur Springs Valley Electric Cooperative, was one of nearly 40 public power employees to participate in the American redox in October. He won three Best Place awards in the annual event that tests skills in local utility operations. See story, page 8.

PHOTO BY RYAN CRAM

Currents

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Energy Smarts

Making the Most of Your Electricity

Together We Save Even More

Looking for information on how to lower your energy bills? Currents has you covered.

The magazine is proud to be part of a nationwide energy-efficiency campaign known as Together We Save. The campaign's mission is to motivate co-op members like you to make small changes in behavior that add up to big savings. That is why this magazine always contains articles about ways to bring value to our readers.

Together We Save offers an unprecedented collection of resources and advice on simple energy-efficiency steps you can take in your home.

Where can you go to access this money-saving information? Log on to www.togetherwesave.com—the online epicenter of the campaign. The



website offers everything from videos and interactive applications to an energy-savings forum. Use the navigation bar across the top of the landing page to explore the site.

Touchstone Energy Web TV (under the "Watch and Learn" tab) has more than 50 short how-to videos on topics such as lighting, heating/cooling, insulation and many other energy-efficiency topics. The library recently added dozens of new videos.

Click on the "Energy Savings Applications" tab and scroll down to find out how

much you could save by changing out appliances. Another new application demonstrates how to save even more with Energy Star-qualified appliances.

Take the Energy Savings Home Tour ("Add Up Your Savings" tab) and discover how all of these small changes add up in a big way. The Home Tour offers numerous energy-saving tips as it guides you through each room.

Areas highlighted in yellow prompt you to take various interactive energy-saving steps, demonstrating how these changes can translate to real savings on your utility bill.

Live in a manufactured home? A new feature points out more than a dozen ways you can cut energy costs throughout your home.

Helping our readers save money during tough times is important to us. It is just one more way Currents is looking out for you.



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November 2010
Vol. 45, No. 6

Surviving West Point 12

Four Northwest cadets discuss life at one of the country's premier service academies.

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NOVEMBER 2010 3

Efficiency Means Savings

Now more than ever, it is important to get the most for your energy dollars.

By paying attention to how you use electricity in your home, understanding what measures can provide the greatest cost-savings and then taking action, you can get all of the benefits of your electric appliances with a reasonable monthly electric bill.

Curtailment Vs. Efficiency

A recent national survey,

"Public Perceptions of Energy

Consumption and Savings," showed when questioned about steps to lower their energy usage, a majority of Americans responded with a strategy of

curtailment (turn it off).

Although it certainly makes sense and saves some energy

to turn off lights, television, space heaters and exhaust fans when not needed, the potential for saving energy (and money) is small compared with increasing the efficiency of appliances and heating/cooling systems.

You can invest in efficiency by purchasing compact fluorescent lights to replace regular incandescent bulbs, checking for Energy Star efficiency labeling when shopping for refrigerators or dishwashers, and looking for the highest Seasonal Energy Efficiency Ratio (SEER) when you buy a new heat pump.

Proper Maintenance for Maximum Efficiency

Equally important is properly maintaining appliances to get the maximum efficiency.

For example, be sure to regularly vacuum the coils on the back of the refrigerator and check the gasket seal on

the door. Drain and flush out the water heater tank twice a year. Regularly change out the filter on your furnace or heat pump.

Without proper maintenance, efficiency will diminish.

Keep in mind the importance of your home's "building envelope" in assuring you get the maximum efficiency from your space heating and cooling unit. That can mean upgrading insulation, doors and windows to get the maximum operating efficiency and the full benefit of comfort for your energy dollars.

Check Out Website:

www.togetherwesave.com

You can find additional information and more advice on saving energy at SSVEC's website, www.ssvec.org, or Touchstone Energy's website, www.togetherwesave.com.

Find out how little changes can add up. ■

Energy-Efficiency/Savings Tip of the Month

Check your furnace or heat pump filter at least monthly and change out as needed to get maximum heating efficiency from your unit this winter.

Posting Signs on Power Poles Can Be a Hazard

Ever thought a power pole looks like a good place to post a flyer? It's not!

Not only are these signs unsightly, but the nails, staples and tacks used to post them can pose a real hazard for linemen.

Screws, nails or staples can snag and tear protective materials used for "hot" (energized) line work.

Punctured rubber gloves are useless for high-voltage

protection.

When linemen are climbing poles and their hooks hit a nail head or staple, those hooks can "cut out" (let loose of the pole), causing falls that can seriously injure them.

Obviously, the same goes for other items. Do not attach basketball backboards, satellite dishes or yard lights to electric power poles!



Plugged In

Using Electricity Safely and Efficiently

Lighting the Holidays With

LEDs

Incandescent holiday lights use 10 to 100 times more energy than strings of light-emitting diodes, depending on the bulb size

By Pam Blair

Looking for a safer, more efficient way to add some light for the holidays? Consider replacing strings of incandescent lights with light-emitting diodes (LEDs).

Unlike traditional incandescent bulbs, LEDs create light while producing virtually no heat. They are being hailed as the next great innovation in lighting, promising long life, great light quality and super efficiency.

According to the U.S. Department of Energy (DOE), LED holiday lights have many advantages compared with ordinary incandescent lights:

- **Energy savings.** Running LED holiday lights on one 6-foot tree for 12 hours a day for 40 days can save 90 percent or more energy compared with traditional incandescent lights.

- **Long life.** They last longer, with an operational lifespan estimated at 20,000 hours—enough to last 40 holiday seasons. Used indoors, the lifespan could be up to 100,000 hours, according to the Northwest Energy Efficiency Alliance.

- **Durability.** LEDs are made in the same shapes and varieties as typical incandescent holiday lights. However, because the technology produces light without heat, the bulbs can be made with virtually indestructible epoxy lenses rather than glass. Solid plastic is less prone to breakage than glass bulbs.

- **No fussing over bulb replacement.** LED bulbs last longer so they don't need to be replaced as often. If a bulb does need replacing, the other bulbs stay lit so

you easily can identify and replace the bad bulb.

- **Safety.** LED holiday lights are cooler than incandescent bulbs, reducing the risk of fire and personal injury.

- **Flexibility.** Because they use less power, it is safer to connect multiple strings of LED holiday lamps end-to-end without overloading the wall socket.

DOE estimates that if every household switched to LED holiday lights, the United States would save about \$410 million in electricity costs. If both residential households and the commercial sector switched to LED holiday lights, the savings would be equivalent to the output of almost a 1,000-megawatt electric power plant, or the annual electricity consumption of almost 500,000 households.

Use of Technology Growing

LEDs are not new. They are used as indicator lights on electronics, in stereos and personal computers, traffic lights, exit signs, large display screens (notably, in Times Square), signal and interior lights in vehicles, desk lamps, under-cabinet lights and porch lights.

With strides in the development



Type of Light	Electricity Cost*
Standard C-7 (125 bulbs, 4 watts each)	\$25.33
Mini-incandescent lights (300 bulbs, 0.4 watts each)	\$6.23
LED holiday lights (280 bulbs, 0.04 watts each)	\$0.56†

* Based on 12 hours of operation a day for 40 days, at a kilowatt-hour rate of 10.5 cents



A Christmas tree decorated with strings of light-emitting diodes (LEDs) can save you money on your electricity bill.

Photo courtesy of General Electric

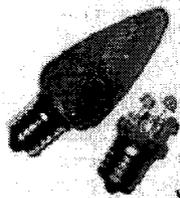
power plants of 1,000 megawatts each and more than \$30 billion at today's electricity prices. It would result in a 33-percent decrease in total electricity consumption for lighting. The amount of electricity saved would be greater than the total amount of energy used to light all U.S. homes today.

Compared with compact fluorescent lights (CFLs)—another efficient lighting option—LEDs last longer, use substantially less energy, are more resistant to breakage and, with no mercury content, are more environmentally friendly.

LEDs also perform well in cold climates—especially outdoors—and unlike many CFLs, can be dimmed.

of white, high-brightness LEDs come opportunities for broader lighting applications within the home, office and outdoor streetlighting.

The incandescent light bulb invented by Thomas Edison creates light by heating a filament. Whether in a lamp or a string of holiday lights, roughly 90 percent of the electricity used by the bulb is wasted on producing heat.



LEDs create light through a solid-state semiconductor chip mounted on an electronic circuit board.

When energy passes through the chip, it creates bright light.

With no filament, LEDs don't waste energy on heat production, allowing them to create the same amount of light with less energy.

DOE says widespread use of LEDs in the United States has the potential to save 348 terawatt-hours—equal to 1 billion kilowatt-hours—by 2027, compared with a scenario with no LEDs.

This could save the equivalent annual electrical output of about 44 electric

A Buyer's Guide

Cheaper is not better. Cheap LED lamps may appear dim compared with higher-quality LEDs or traditional lighting.

When looking for LEDs, view the lights plugged in at the store, or make sure you can return the lights if they do not meet your expectations.

Energy Star-qualified decorative light strings—many featuring LED technology—are independently tested and must meet stringent efficiency (under 0.2 watts per bulb) and quality (three-year warranty, protection against over-voltage, maintained light output) requirements.

While an initial investment in LEDs may be more expensive, it can take 50 incandescent bulbs, or eight to 10 CFLs, to equal the life of one LED lamp.

New designs are being added, with LED holiday lights now available in a selection of colors, styles and lengths.

Being energy efficient is not at the top of most people's minds when celebrating a holiday, but a happy holiday can turn sour with the arrival of January bills.

Prevent post-holiday shock by thinking about energy use and shopping carefully. ■



Keep Safety In Mind

Holiday lights can brighten up chilly winter evenings, but they can be dangerous if not used properly. When decorating for the holidays:

- ▶ Check each set of lights, new or old, for broken or cracked sockets, loose connections, or frayed or bare wires. Discard all damaged cords.
- ▶ Indoors or out, use only lights that have been tested for safety. The lights should have the Underwriters Laboratories (UL) label.
- ▶ Don't connect lights while adjusting them on a Christmas tree. Unplug the lights when changing bulbs.
- ▶ Don't let light bulbs rest on tree needles and branches. Use a clip or twist-tie to keep bulbs upright.
- ▶ Keep cords out of water and away from metal objects.
- ▶ To hook up your outdoor lighting, use a three-prong grounded extension cord with the UL label.
- ▶ Uncoil extension cords completely before using, and place them away from heat sources and bulbs. Never place cords under rugs and doors or through windows, where they might be pinched or become worn.
- ▶ Don't overload outlets or extension cords.
- ▶ If you buy an artificial tree, check for a "flame resistant" label.
- ▶ Unplug tree lights and decorative outdoor lighting before leaving the house or going to bed.

Save With Layered Bathroom Lighting



This overhead four-light fixture is attached to the mirror and provides a wash of light for your tasks. Photo courtesy of Holtcoetter-Ludwig



To ask a question, write to James Dulley, Energy Report, 6906 Royalgreen Dr., Cincinnati, Ohio 45244, or check his Web page, www.dulley.com.

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Q: I plan to remodel my master bath, dressing area and my children's bathroom. What is the most efficient lighting system?

A: People don't often think about lighting and energy efficiency when remodeling bathrooms, but it is as important as installing proper plumbing fixtures.

If the lighting in your bathrooms is like most older bathrooms, it consists of an overhead light, perhaps built into a vent fan, if there is no window.

If there is a window in the bathroom, few builders went to the expense of installing a vent fan. Today, vent fans are almost always installed to address indoor air quality concerns in modern, more airtight houses. While remodeling, install a vent fan.

The lighting for your children's bathroom will be simpler, so tackle it first. A basic overhead light should be adequate until they get old enough to shave or wear makeup. There is

likely already an incandescent overhead light-only or fan/light fixture. In either case, replace it with a new Energy Star-qualified fan with a compact fluorescent bulb (CFL). It will use 75 percent less electricity for lighting.

Planning efficient and effective lighting for your master bathroom and dressing area is more complicated. Use the basic lighting design technique called layering to provide proper lighting.

The three basic lighting layers are task, ambient, and accent or decorative. Bathrooms are relatively task oriented—showering, shaving, applying makeup,

general grooming—so adequate task lighting is most important. Other than showering or bathing, the task lighting at the mirror and vanity is used most often.

Ideally, place lighting on both sides of the mirror and perhaps on top for three-direction lighting. This eliminates shadows that can be a problem when shaving or applying makeup. If the mirror is not too wide, wall-mounted vertical fluorescent tube lighting on each side of the mirror is best and efficient.

Several companies offer efficient decorative T2 or T5 fluorescent fixtures. Some are designed to be attached to wide mirrors, and decorative sconces with CFLs are effective around narrow mirrors.

Daylight-type CFLs provide the best color rendition for makeup. Halogen bulbs may be used. They offer a longer life, are more efficient and provide a whiter light.

For over-the-mirror task lighting, Kichler offers a new decorative rail light design, which also works well for accent lighting. It is similar to track lighting, with three or four directional fixtures, but is mounted on a rail that hangs down a couple of inches from the ceiling. It mounts to the ceiling over a standard ceiling electrical box. Several of the rail fixtures use super-efficient, long-lasting, white light-emitting diode (LED) bulbs.

For the bath/shower area, recessed overhead task lighting works well. Consider installing low-voltage fixtures for safety and easy installation.

For ambient lighting, lower wattage incandescent fixtures—either overhead or sconces—are effective. They can be controlled by dimmer switches to save energy. The new Lutron Eco-Minder dimmer is a good choice. As the lights are dimmed, an LED on the faceplate changes from red to green to remind you to dim the lights to save energy. On some models, the switch also functions as an efficient night light. It is wise to install separate dimmer switches for the various layers of light. Another daytime ambient light is an ODL tubular skylight with a solar-powered remote dimmer. ■

The Smarter Grid

The federal government anticipates a revolution in the electric industry, and SSVEC is a part of that revolution.

By Eileen Brien
SSVEC Smart Grid
Program Manager

You probably have heard about the federal government's focus on energy independence, renewables, conservation, reliability or grid modernization.

Numerous layers of complexity underpin this national effort, but they have been conveniently packaged into the term "smart grid."

More aptly, perhaps, the term should be "smarter grid," as our national electric infrastructure, as it stands and operates today, does not lack intelligence, technology or automation.

The Grant Unfolding

On February 17, 2009, in coordination with the national directives and to stimulate the economy, President Obama signed into law the American Recovery and Reinvestment Act of 2009 (ARRA).

Shortly after, as part of the ARRA, the U.S. Department of Energy announced the availability of \$3.4 billion to support the Smart Grid Investment Grant program.

On August 6, 2009, SSVEC submitted an application for a \$64.5 million grant.

The joint effort—fittingly titled Arizona's Cooperative Grid Modernization Project—is with Southwest Transmission Cooperative (SWTC) and Mohave Electric Cooperative (MEC). SWTC is a transmission cooperative based in Benson, Arizona.

The main reason for the



Prior to installation, Substation/SCADA Technician Danny Register and Apprentice Danny Dunham evaluate strands of fiber with a specialized piece of equipment called an optical time-domain reflectometer.

joint effort is to leverage the integrated ownership, use and governance of SWTC, and a unified application of cooperatives with their nonprofit, rural nature and member-owned structure.

In October 2009, Obama announced 100 utility projects were selected to receive smart grid grants. SSVEC's project—one of 400 that applied—had been selected.

Chief Executive Officer Creden Huber put the organization on course for completing an accelerated project by evaluating the staffing needs and hiring seven employees. He recognized the opportunity provided to the organization, and energized the staff, board and membership.

The cost-share assistance

agreement is a grant, which means it does not need to be repaid. It provides a reimbursement of 50 percent of money spent on approved projects.

The \$64.5 million joint effort will leverage existing transmission, subtransmission and distribution lines for the installation of optical ground wire cable for mutual benefit.

The three organizations will add upgrades to their electric grid, smart meters for more than 44,150 customers, and upgrade or install the infrastructure necessary to support two-way flow of information, thereby enabling the benefits of an advanced smart grid.

Two-way communications will connect the transmission and distribution systems

to end-use customers across the service areas of SWTC, SSVEC and MEC. Each cooperative will work closely with the others to maximize these benefits, but each will be managed independently by their respective project leads.

SSVEC's project value is \$44.3 million, which is the lion's share of the grant at 68 percent. SWTC's projects are budgeted at \$12.9 million, and MEC's at \$7.3 million.

SSVEC's Responsibilities

Of course, there is no free lunch. With a potential reimbursement of 50 cents on each dollar spent, the government has some rigorous hurdles.

Three complex documents must be completed, and each month, progress reports, project value management updates and risk management reports must be submitted. ARRA reports must be filed quarterly noting jobs created or retained.

SSVEC will spend \$44.3 million and be reimbursed up to \$22.2 million.

The feds will monitor spending to ensure it is appropriate.

Our Projects

The main activities of SSVEC's initiative are the expansion of advanced metering infrastructure, installation of optical ground wire cable (fiber), distribution and substation automation, and supply and demand side management.

Within each of these activities, numerous projects are budgeted. The selected projects are ones SSVEC would have done within at least a seven-year time frame and meet one of the following criteria:

- Reduce operating costs by using enhanced technology or automation.
- Enhance reliability by reducing outages or outage restoration time.
- Promote energy efficiency, conservation or usage reduction during peak demand.
- Enhance the exchange of information between SSVEC and members.
- Maximize supply and demand side management strategies.

The Vision

The federal government anticipates a revolution in the electric industry, and is poised to help make the transformation a reality. SSVEC is a part of that revolution.

Although SSVEC organizationally is a small fish in a big power and utility ocean, management continues to take progressive steps to be a more automated, technologically-advanced, consumer-interactive business that maintains the member as the number one priority in the distribution of affordable electricity. ■

For more information on SSVEC's Smart Grid project, see the cooperative's website at www.ssvect.org.

Project Facilitates Co-op Work Plan

SSVEC Chief Member Services Officer Jack Blair explains that smart grid funding was targeted for projects already on the cooperative's work schedule.

"When we applied for the stimulus money, we reviewed our long-term work plan to see which projects on that schedule would meet the smart grid requirements," says Blair. "We consolidated those projects and moved the scheduled dates ahead in some cases to qualify for the funding."

Blair emphasizes, "It was not simply a 'wish list' compiled for the grant, but rather a review of what we were planning to do to upgrade our system."

The grant funds will enable SSVEC to complete the projects with far fewer cooperative dollars and in a more timely manner than originally thought, Blair says, noting management and the board believed these were good reasons to apply for the stimulus money.

"The intended effect of the stimulus money was to fund projects that would, in turn, create or maintain American jobs," Blair adds. "This grant meets that requirement."

Seven new positions were created at SSVEC as a result of this project. In addition, it will create scores of contracted jobs and indirectly sustain hundreds more jobs for manufacturers and distributors through the purchase of materials and equipment for the smart grid project.