

ORIGINAL



2012 Annual Expense Report
on
Demand-Side Management Programs
for

Arizona Corporation Commission

DOCKETED

FEB 27 2013



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

DOCKETED BY *JM*

A Touchstone Energy® Cooperative

For Period January 1, 2012
through December 31, 2012
in compliance with
Decision #71274 of Docket E-01575A-08-00328

Submitted by
Jack Blair
Chief Member Services Officer
Member Services Department

Sulphur Springs Valley Electric Cooperative
311 E. Wilcox Drive
Sierra Vista, AZ 85635
350 N. Haskell Ave
Willcox, AZ 85643

2013 FEB 27
DOCKET 000000
AZ CORP 000000
RECEIVED

Table of Contents

Contents

Program Summary	3
DSM Budget, Income, and Expense Statement	4
Energy Efficient New Home Program (Touchstone Energy Home Program)	5
Energy Efficient Existing Home Program	6
Energy Efficient Water Heater Rebate Program	7
Residential Zero Interest Loan Program	8
C&I Energy Efficiency Zero Interest Loan Program	10
Advertising Report	11
Summary of Advertising Costs	13
Ad copy for January 2012 through June 2012	14
Home Audit Program	29

Program Summary

Included in the 2009 SSVEC rate case were the following Demand Side Management (DSM) Programs. The following pages show the status of the DSM Programs submitted by Sulphur Springs Valley Electric Cooperative (SSVEC) for the period January 1, 2012 and ending June 30, 2012, in compliance with Decision #71274, page 46, lines 11-21. (This replaces the DSM reporting requirement of Docket E-01575A-92-0220, Decision 58358).

Compliance Reporting Requirements as follows:

File its 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.

DSM Budget, Income, and Expense Statement

Demand Side Management Report

Jan to Dec 2012

Budget

Labor	Budget
Touchstone EE Homes Inspections	\$ 175,000
Residential - audits	\$ 175,000
C&I - audits	\$ 12,000
Refrigerator Recycling (pending approval)	\$ -
Low Income Weatherization (pending approval)	\$ 125,000
DSM - Admin	\$ 75,000
DSM - Program Development	\$ 30,000
Expenses	
Advertising	\$ 75,000
Misc	\$ 20,157
Rebates	
Water Heater	\$ 40,000
Heat Pump	\$ 150,000
On Demand HWP (pending approval)	\$ -
C&I Lighting (pending approval)	\$ -
Loan Programs	
Residential Loans	\$ 339,000
Commercial Loans	\$ 250,000

Budget Totals \$ 1,466,157

Income

Carry over from 2011	\$ 529,157
Collections in 2012	\$ 744,526
Loan Repayments in 2012	\$ 147,216
YTD Total	\$ 1,420,900

DSM Expenses

Touchstone EE Homes	\$ 4,378
Residential Audits	\$ 128,761
C&I Audits	\$ 3,313
Refrigerator Recycling	\$ -
Low Income Weatherization	\$ -
DSM - Admin	\$ 27,638
DSM - Program Development	\$ 16,866
Expenses	
Advertising	\$ 32,492
Misc	\$ 5,791
Rebates	
Water Heater	\$ 1,800
Heat Pump	\$ 23,100
On Demand HWP	\$ -
C&I Lighting	\$ -
Loan Programs	
Residential Loans	\$ 161,186
Commercial Loans	\$ 24,909
Expense Total	\$ 430,233

DSM Program Ending Balance = \$ 990,667

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 \$182 each.

	(i)Number of Homes Certified	Estimated kWh \$ saved	Estimated Fossil Fuel \$ Saved	(iii)Total Estimated \$ Savings	Estiamted kWh Savings per Year	(vi) Program Costs
Jan	0	\$ -	\$ -	\$ -	-	\$ -
Feb	0	\$ -	\$ -	\$ -	-	\$ -
Mar	1	\$ 311.19	\$ 660.66	\$ 971.85	1,859	\$ 182.43
Apr	5	\$ 1,555.96	\$ 3,303.30	\$ 4,859.26	9,294	\$ 912.17
May	4	\$ 1,244.77	\$ 2,642.64	\$ 3,887.41	7,435	\$ 729.74
Jun	4	\$ 1,244.77	\$ 2,642.64	\$ 3,887.41	7,435	\$ 729.74
Jul	2	\$ 622.39	\$ 1,321.32	\$ 1,943.71	3,717	\$ 364.87
Aug	2	\$ 622.39	\$ 1,321.32	\$ 1,943.71	3,717	\$ 364.87
Sep	2	\$ 622.39	\$ 1,321.32	\$ 1,943.71	3,717	\$ 364.87
Oct	1	\$ 311.19	\$ 660.66	\$ 971.85	1,859	\$ 182.43
Nov	1	\$ 311.19	\$ 660.66	\$ 971.85	1,859	\$ 182.43
Dec	2	\$ 622.39	\$ 1,321.32	\$ 1,943.71	3,717	\$ 364.87
YTD total =	24	\$ 7,468.63	\$ 15,855.84	\$ 23,324.47	44,609	\$ 4,378

(v) Estimated Environmental Impact

CO2 (1.844 lb. Per kWh)	82,259	pounds of CO2 emissions reduced
SO2 (.00342lb Per kWh)	153	pounds of SO2 emissions reduced
NOx (.0052 lb. per kWh)	232	pounds of NOx emissions reduced

Budget Impact

2012 Budget	\$ 50,000.00
2012 YTD Budget	\$ 25,000.00
2012 YTD Spent	\$ 4,378.41
2012 Budget Balance	\$ 20,621.59

Program Costs (since beginning of program)

Cost prior to 2012	\$ 82,446.61	estimated
Cost in 2012	\$ 4,378.41	
Total Program Costs = \$ 86,825.02		

(vii) Significant impacts on program Cost Effectiveness

None

(ix) Problems and Solutions:

Housing market is still depressed so very few new homes being built.

(x) Any major changes to the Program

None

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 in 1995. The following list is of rebates made during the period January 1, 2012 through December 31, 2012.

Heat Pump Rebate Program

	(i) Number of Rebates	(vi) Rebates Paid	(iii) Total Estimated \$ Savings	(iv) kWh Savings per Year
Jan	5	\$ 2,200.00	\$ 416.82	3,425
Feb	1	\$ 500.00	\$ 83.36	685
Mar	3	\$ 1,500.00	\$ 250.09	2,055
Apr	5	\$ 1,900.00	\$ 416.82	3,425
May	6	\$ 3,000.00	\$ 500.19	4,110
Jun	3	\$ 1,500.00	\$ 250.09	2,055
Jul	4	\$ 2,000.00	\$ 333.46	2,740
Aug	8	\$ 4,000.00	\$ 666.92	5,480
Sep	7	\$ 3,500.00	\$ 583.55	4,795
Oct	2	\$ 1,000.00	\$ 166.73	1,370
Nov	3	\$ 1,500.00	\$ 250.09	2,055
Dec	2	\$ 1,000.00	\$ 166.73	1,370
YTD Totals =	49	\$ 23,600.00	\$ 4,084.86	33,565

(v) Estimated Environmental Impact

CO2 (1.844 lb. Per kWh)	61,894	pounds of CO2 emissions reduced
SO2 (.00342lb Per kWh)	115	pounds of SO2 emissions reduced
NOx (.0052 lb. per kWh)	175	pounds of NOx emissions reduced

(vi) Budget Impact

2012 Budget	\$ 20,157.00
2012 YTD Budget	\$ 10,078.50
2012 YTD Spent	\$ 23,600.00
2012 Budget Balance	\$ (13,521.50)

Program Costs (since beginning of program)

Cost prior to 2012	\$ 212,900.00	Estimate
Cost in 2012	\$ 23,600.00	
Total Program Costs = \$ 236,500.00		

(vii) Significant impacts on program Cost Effectiveness

None.

(ix) Problems and Solutions:

None.

(x) Any major changes

None.

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	1	\$ 100.00	\$ 120.00	986
Feb	3	\$ 300.00	\$ 360.00	2,958
Mar	0	\$ -	\$ -	-
Apr	1	\$ 100.00	\$ 120.00	986
May	1	\$ 100.00	\$ 120.00	986
Jun	2	\$ 200.00	\$ 240.00	1,972
Jul	0	\$ -	\$ -	-
Aug	1	\$ 100.00	\$ 120.00	986
Sep	4	\$ 400.00	\$ 480.00	3,944
Oct	3	\$ 300.00	\$ 360.00	2,958
Nov	0	\$ -	\$ -	-
Dec	1	\$ 100.00	\$ 120.00	986
YTD Totals =	17	\$ 1,700.00	\$ 2,040.00	16,763

(v) Estimated Environmental Impact

D2 (1.844 lb. Per kWh)	30,910	pounds of CO2 emissions reduced
D2 (.00342lb Per kWh)	57	pounds of SO2 emissions reduced
Ox (.0052 lb. per kWh)	87	pounds of NOx emissions reduced

(vi) Budget Impact

2012 Budget	\$ 40,000.00
2012 YTD Budget	\$ 20,000.00
2012 YTD Spent	\$ 1,700.00
2012 Budget Balance	<u>\$ 18,300.00</u>

Program Costs (since beginning of program)

Program began in 2011	\$ 8,700.00
Cost in 2012	\$ 1,700.00

Total Program Costs = \$ 10,400.00

(vii) Significant impacts on program Cost Effectiveness

None

(ix) Problems and Solutions:

None

(x) Any major changes

In our 2012/2013 DSM program (as yet to be approved) we modified this to match the recommendations from ACC Staff setting the required EF based on tank size.

Residential Zero Interest Loan Program

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 2012 we issued 15 loans for a total of \$166,330.37

(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

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

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

Cooling Season Requirements by building components

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

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

*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	2486	There are 3125 Btu's per kWh of electricity
Cooling Degree Days	2174	Old Furnace is 60% efficient
Heating hours	1261	New Furnace is 80% efficient
Cooling hours	1842	Old Windows U-Value of 1.1
Cost of Natural Gas	\$1.13776 per therm	New Windows U-Value of at least .58
Cost of Electricity	\$ 0.1217 per kWh	Old Doors R1.79
A/C Coefficient of Performance	2.5	New Doors R5 or better

Using the above formulas we estimate* the 15 completed project will:

(iii) Estimated Cost Savings to Participates

Btu Reduction =	196,973,625
Heating Cost Reduction =	\$ 1,878
Cooling Cost Reduction =	\$ 1,431

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 =	1,313.5	therms
Estimated Reduction in kWh Purchases =	11,762.3	

(v) Estimated Environmental Savings (electric only)

(v) Estimated Environmental Impact

CO2 (1.844 lb. Per kWh)	21,690	pounds of CO2 emissions reduced
SO2 (.00342lb Per kWh)	40	pounds of SO2 emissions reduced
NOx (.0052 lb. per kWh)	61	pounds of NOx emissions reduced

(vi) Program Expenditures:

Total amount of money Loaned:	\$161,186
Loan payments received:	\$127,511

(vii) Significant impacts on program Cost Effectiveness

This program is almost self-sustaining as prior loans are paid back. This provides a growing DSM fund without having to increase the collections from Customers. This funding increase allows us to expand the overall DSM program with no financial impact on Customers.

(ix) Problems and Solutions:

The current economy still has people hesitate to increase debt even at 0% interest. A contractor has expressed interest in concentrating on this market segment using the loan program as a marketing tool to reach more participants.

(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.

(i) Number of participates: 2

(ii) Copies of Marketing Material

Marketing in 2011 was limited to verbal presentations to individual businesses by our Irrigation Manager as he presented the savings from the Cochise Groves Project. The loan program was presented to each business that had a Commercial Energy Audit as part of the report and audit.

(iii) Estimated Cost Savings to Participants

Acct #	Measures	(iii) Estimated Annual Savings (\$)	(iv) Estimated Annual kWh Savings	Loan Total
7017703	75 HP Hitachi VFD & motor	\$ 1,405.13	16,320	\$ 14,779.11
4844600	HVAC replacement / Upgrade	\$ 1,348.00	27,517	\$ 10,130.00

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

VFD Project

Using the consumption history from 2009 to 2011 to produce a “baseline” the savings to date re as follow;

Savings	kWh	Cost Reduction
May	1,333	\$125
June	6,827	\$578

Magic Circle Project: Savings based on Computer Model because the clubhouse shares the meter with the entire RV park including the space rentals.

Annual Savings	kWh	Cost Reduction (gas & electric))
For the Clubhouse	27,517	\$1,348

(v) Estimated Environmental Savings (total program)

(vi) Program Expenditures:

YTD Total amount of money Loaned: \$24,909
 YTD Loan payments received: \$19,705

Emissions Reductions		
CO2	316,995	lbs per year
SO2	588	lbs per year
Nox	894	lbs per year

Source: Arizona Electric Power Cooperative, 1993 & 1994 emissions compliance test results.

(vii) Significant impacts on program Cost Effectiveness

None

(ix) Problems and Solutions:

The current economy still has people hesitate to increase debt even at 0% interest.

(x) Any major changes to program

We expect higher participation from irrigation customers in 2013 due to a pump test program we are running with a grant we received.

Advertising Report

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

Demand Side (Energy Management) articles in the SSVEC Bill Insert *Co-op Connections*

January 2012	None		
February 2012			
	"Save energy (and keep comfortable during cold weather"	.6 page	
	.6 page of 2 pages @ \$2,935.00		\$880.50
	1 hour of labor at \$28.52 per hour		\$ 28.52
March 2012	None		
April 2012	None		
May 2012	None		
June 2012			
	"Going on vacation? Be sure your electric meter also "takes time off"	.5 page	
	.5 page of 2 pages @ \$2,935.00		\$733.75
	1 hour of labor at \$28.52 per hour		\$ 28.52
July 2012	None		
August 2012			
	"Check out"energy usage of home appliances"	.5 page	
	.5 page of 2 pages @ \$2,833.33		\$708.33
	1 hour of labor at \$28.52 per hour		\$ 28.52
September 2012	None		
October 2012	None		
November 2012	None		
December 2012			
	"Energy Use During the Holidays"	.6 page	
	.6 page of 2 pages @ \$2,833.33		\$850.00
	1 hour of labor at \$28.52 per hour		\$ 28.52

Total for Co-op Connections **\$3,286.66**

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

January 2012

"Together We Save"	page 3	.5 page
"Beyond Swirly Bulbs"	page 6 & 7	2.0 pages
"Explore Heating and Cooling Options"	page 25	1.0 pages

3.5 pages of 32 pages at \$21,985.94 \$2,404.71

March 2009

"Resolution to Save Broken?"	page 3	.5 page
"How Energy Efficient Are Your Appliances?"	page 5	.5 page
"In-Home IQ Expands"	pages 6 & 7	2.0 pages

3.0 pages of 32 pages at \$21,988.36 \$2,061.42

May 2012

"Clean AC Coils Lead to Higher Efficiency"	page 25	1.0 pages
--	---------	-----------

1.0 page of 32 pages at \$16,842.97 \$ 526.34

July 2012

"We have the Power to Save Energy"	page 3	.5 page
"Why is My Bill So High"	pages 6 & 7	2.0 pages
"Attention-Grabbing Gadgets"	pages 8 & 26	2.0 pages
"Clean AC Coils Lead to Higher Efficiency"	page 25	1.0 pages

5.5 pages of 32 pages at \$22,057.69 \$3,791.15

September 2012

"What to Look for in an HVAC"	page 3	.5 page
-------------------------------	--------	---------

.5 page of 32 pages at \$21,906.38 \$ 342.29

November 2012

"Don't Let Energy Savings Go Up in Smoke"	page 3	.5 page
"Decorate Efficiently"	page 6	1.0 page
"Holiday Entertaining Can Be Draining"	page 7	1.0 page
"Making Windows More Efficient"	page 25	1.0 page

3.5 pages of 32 pages at \$24,001.85 \$2,625.21

Total for *Currents*

\$11,751.12

Summary of Advertising Costs

for January through December 2012 DSM

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

Production Costs	\$ 114.08
Printing Costs	<u>\$ 3,172.58</u>
Total Bill Insert Costs	\$ 3,286.66

- 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	\$ 11,751.12
-----------------------------	---------------------

- C. Media Advertising

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

Print Advertising	\$ 10,817.59
Radio Advertising	\$ 8,533.77
TV Advertising	<u>\$ 17,625.40</u>
Total Media Advertising	\$ 36,976.76

TOTAL FOR JAN. through DEC. ADVERTISING **\$52,014.54**

Less expenses paid from ARRA Grant **\$19,522.42**

ADVERTISING EXPENSES CHARGED TO PROGRAM **\$32,492.12**

Ad copy for January 2012 through December 2012

Co-op CONNECTION

News and Information from SSVEC February 2012

Calendar

February 20
SSVEC offices closed for Presidents Day Holiday. To report an outage or other electrical emergencies call 1-800-422-1275.

February 22
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

March 8
SSVEC and AFCEA's South Engineering and Sciences Fair. At the Walden Hotel and Conference Center. Open to the public 8:00 a.m. to 6:00 p.m. Awarth ceremony at 7:00 p.m.

March 21
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

April 18
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

Save energy (and keep comfortable) during cold weather

There are still some cold days ahead for this heating season. Fortunately there are steps you can take to keep that warm air in and the cold air out of your home, making it more comfortable and saving you some money on your monthly electric bill. (And these same measures will work this summer to help keep the cool air in your house and the hot air outside!)

1. Block those air leaks. It's amazing just how much conditioned air can leak from cracks and spaces around doors and windows or plumbing vents. See the information on the right about sealing openings.
2. Use weatherstripping. Just because the weather is cold doesn't mean you stop using the kitchen or bathroom exhaust fans. Just be sure to run them only for a few minutes.
3. Check the damper. If you use a conventional fireplace, remember to close the damper when you do not have a fire burning.
4. Change out the filter. Check your furnace or hot air pump at least once a month. A clogged filter can cause a heating system to work much longer than it needs to and cost you more

Check out Your Cold Air Leaks

Many air leaks are hidden in your attic and can significantly raise your energy bill. Here's a list of common hiding places. Seal them with caulk, weatherstripping or other appropriate materials for greater comfort and energy savings.

- Windows and Doors
- Attic Hatches
- Wiring Holes
- Plumbing Vents
- Recessed Lights and Open Soffit (the box that hides recessed lights)



Source: Alliance to Save Energy's Guide to Home Sealing

Sealing Services, Inc. Phone: 316-264-4444
 Check out SSVEC's website at www.ssvec.org

Co-op CONNECTION

News and Information from SSVEC June 2012

Calendar

June 20
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

July 4
SSVEC Offices closed for Independence Day Holiday. To report an outage or other electrical emergencies call 1-800-422-1275.

July 18
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

August 22
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

September 3
SSVEC Offices closed for Labor Day Holiday. To report an outage or other electrical emergencies call 1-800-422-1275.

Check out SSVEC's website at www.ssvec.org

Going on vacation?

Be sure your electric meter also "takes time off"

Vacation time is a great opportunity to relax and enjoy being away from home. But remember, if you're not careful, you could be using electricity needlessly, while you're away from home.

First, decide what doesn't have to be left "on" while you're away.

For example, even though you're not at home, the water heater will automatically operate as the water in the tank cools. Turn off the water heater's refrigerator operating in a house that is "closed up" in warm weather will be forced to run longer and more often away from home than it otherwise would. If you're going to leave for two weeks or more, consider emptying, defrosting and unplugging your refrigerator. (Be sure to plug the door open to allow air to circulate in the refrigerator cabinet.) You may save enough on your electricity costs to make up with fresh berries while you return.



To give the impression that someone is at home, you can turn the heater off on a pool or spa and reduce the filter size to a minimum.

Many appliances such as microwaves, computers or televisions have "instant on" features that draw some power at all times. Unplug these appliances and you'll save energy as well as prevent possible damage related to storms or power surges.

Paying Your Electric Bill When You're Out of Town

If you're going on vacation for an extended period of time, you have several options to be sure your bill is paid on time and your electric service is not interrupted.

- You can come in to an SSVEC office prior to your vacation and prepay your monthly electric bill.
- Or you can check the amount of your bill online and use a credit card to pay your bill online or by phone from your vacation destination.
- Finally, you can sign up for Automatic Payment. That way your electric bill will be paid for you each month, or savings account or from your debit or credit card each month.

For more information, contact your local SSVEC office.

Co-op CONNECTION

News and Information from SSVEC August 2012

Calendar

August 22
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

September 3
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

September 18
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

October 26
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

November 20
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

December 13
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

"Check out" energy usage of home appliances

Kill A Watt device is available for loan at public libraries!

Understanding just how much a household appliance costs to operate is key to managing a home owner's monthly electric bill. The first step in determining what an appliance costs to operate is knowing how much electricity it uses. SSVEC is making it easier for members to check their usage with a metering device called a "Kill A Watt". SSVEC has made these devices available for check-out at libraries throughout the cooperative service area.

The Kill A Watt digital unit plugs into an ordinary appliance cord to then plug into the unit that measures the electric energy used to operate the appliance. The device provides a digital read-out of the watts used and can monitor the consumed use of kilowatt hours (kWh). The home owner can calculate the cost to operate a refrigerator, television, computer or any other electrical item by simply multiplying the usage by the cost per kWh.

Yes, you can check out a Kill A Watt unit at the following public libraries:

- Arkansas Library 300 South Washington Street, Chicago, IL 60604
- Chicago Public Library 187 West Congress Avenue, Chicago, IL 60604
- DePaul University Library 2325 Dearborn Avenue, Chicago, IL 60614
- Harold Washington College Library 1200 South Dearborn Street, Chicago, IL 60605
- Northwestern University Library 620 North Dearborn Street, Chicago, IL 60610
- Southwest Chicago Library 2700 South Dearborn Street, Chicago, IL 60608
- University of Illinois at Chicago Library 500 S. Dearborn Street, Chicago, IL 60607

And you can request a unit for loan through the Library if you are a member of one of these participating libraries.

For more information on the Kill A Watt device, call (773) 462-5448.

SSVEC is advertising unclaimed capital credits

Members listed in newspapers and on co-op website have money coming to them. More than 2,300 cooperative members have money from SSVEC coming to them. These individuals were issued checks late last year but the cooperative's annual return of unclaimed capital credits. The individuals listed either had their checks returned to the cooperative by the post office because of an invalid address or the checks were never cashed.

Members can claim their funds by completing an application and returning it to SSVEC on or before October 1, 2012. For an application or more information, call (316) 515-3468 or check SSVEC's website at www.ssvec.org.

Co-op CONNECTION

News and Information from SSVEC December 2012

Calendar

December 18
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

December 26-27
SSVEC Offices closed for Christmas Holiday. To report an outage or other electrical emergencies call 1-800-422-1275.

January 1
SSVEC offices closed for New Year's Day Holiday. To report an outage or other electrical emergencies call 1-800-422-1275.

January 21
SSVEC offices closed for Martin Luther King, Jr. Day Holiday. To report an outage or other electrical emergencies call 1-800-422-1275.

January 23
SSVEC Board of Directors Meeting 9:30 a.m. at 350 N. Haskell Avenue, Wichita, Kansas. Call to members is at 9:15 a.m.

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 on use 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.

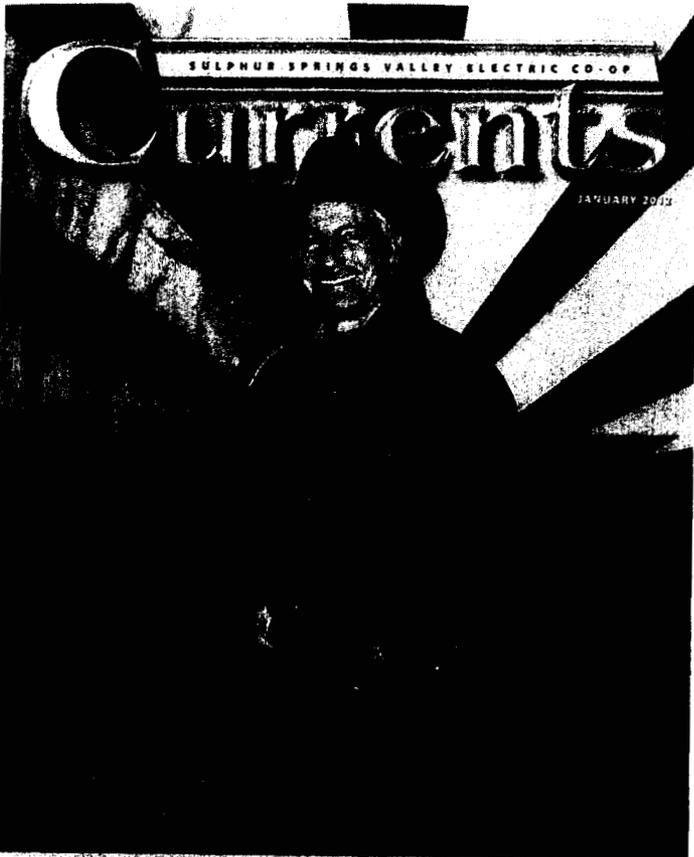
Be the Good Host

A good host makes his guests comfortable, and you will probably use more electricity in fulfilling that role. For example, you will use more lighting—outside lighting

Old Time Printing and Design (316) 495-6111 227 N. Century Drive, Shreve, Mo. 10% off total business orders or 1 color brochures

G & F Pizzo (316) 266-6448 801 E. Pennsylvania, Berwyn 10% off dining, gifts and drinks

Silvers Lumber LLC (316) 266-4141 200 E. Railroad Avenue, Wichita 10% off dining, gifts and drinks



SULPHUR SPRINGS VALLEY ELECTRIC CO-OP

Currents

JANUARY 2012

Currents

AREA ELECTRIC COOPERATIVE
Katherine Blucher
ASSOCIATION OF ELECTRIC COOPERATIVES
THOMAS H. COOPER
GEOFF CHAFFER
COUNCIL ON ENERGY EFFICIENCY
ELECTRIC COOPERATIVE
TERRI LEE
NATIONAL ELECTRICAL CONTRACTORS ASSOCIATION
NORTH CAROLINA
ELECTRIC COOPERATIVE
TERRY
SULPHUR SPRINGS VALLEY
ELECTRIC COOPERATIVE
WESLEY COOK
SULPHUR SPRINGS VALLEY ELECTRIC COOPERATIVE
CONSUMER ADVISORY
AND DEFENSE

Currents #259 120 is published bimonthly by Great Plains State Energy Cooperative Association for \$2.00/AL 120 is sold for \$2.00. Phone: 42 224-1100. FAX: 42 224-1101. An publication of rural electric cooperatives and public utilities.

Currents is the leading voice of the electric industry in the United States and is read by consumers, policy makers and the public. The publication is published for members, policy makers and the public. The publication is published for members, policy makers and the public. The publication is published for members, policy makers and the public.

Currents is published with the assistance of the following sponsors:

Cooperatives: Great Plains State Energy Cooperative Association, Rocky Mountain Electric Cooperative, Southwestern Electric Cooperative, Utah Electric Cooperative, Western Electric Cooperative, Wyoming Electric Cooperative.

Utilities: American Electric Power, Duke Energy, Entergy, Exton Energy Services, FirstEnergy, Georgia Power, Hawaiian Electric, Hydro-Quebec, Illinois Power, Indiana Power, Iowa Power, Kansas Power, Michigan Power, Minnesota Power, Missouri Power, Nebraska Power, New York Power, North Carolina Power, Oklahoma Power, Oregon Power, Pennsylvania Power, South Carolina Power, Tennessee Power, Texas Power, Virginia Power, Washington Power, Wisconsin Power, Wyoming Power.

ADVERTISING RATES: Classified advertising rates are available upon request. Please contact the publisher for more information. The publisher is not responsible for the return of unsolicited manuscripts. Manuscripts should be sent to the publisher at the address above. Manuscripts should be sent to the publisher at the address above. Manuscripts should be sent to the publisher at the address above.

MEMBERSHIP AND SUBSCRIPTIONS: Please do not send money to the publisher. If you are interested in becoming a member, please contact the publisher at the address above. If you are interested in becoming a subscriber, please contact the publisher at the address above. If you are interested in becoming a subscriber, please contact the publisher at the address above.

Energy Smarts

Making the Most of Your Electricity

Together We Save

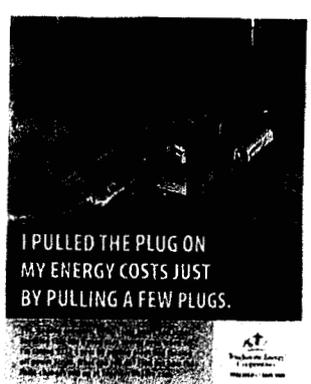
Interactive website shows \$35 million savings in two years

Two years ago, Touchstone Energy cooperatives nationwide launched a website—www.togetherwecanave.com—to help members examine ways they can reduce their energy consumption.

It has been a big hit for members, saving a potential of more than \$35 million.

Interactive activities on the site show savings from taking simple steps, such as replacing incandescent light bulbs with compact fluorescents, to more significant changes, such as buying energy-efficient appliances or adding insulation.

More than a dozen interactive energy-saving videos are on the site. Several provide step-by-step guides for energy efficiency projects.



I PULLED THE PLUG ON MY ENERGY COSTS JUST BY PULLING A FEW PLUGS.

Calculators are based on a 3,000 square-foot home in the middle of the United States. To find out how much you can save at your home, visit www.togetherwecanave.com.



Celebrating Arizona's First 100 Years 10

State Historian Marshall Trimble plays a lead role in the centennial celebration.

Also in This Issue

Plugged In to
Power Problems 8
Side Roads 10
In the Kitchen 10

At Home 18
Outdoor Fun 20
Refrigerators 21
Parking Short 30

Your utility pages: 4, 5, 8, 25, 26, 28, 29, 31

Washington Youth Tour Winners PAGE 5 • Co-op Connections Card Businesses PAGE 28

Plugged In

Using Electricity Safely and Efficiently

Beyond Swirly Bulbs

Federal regulations that will phase out inefficient bulbs spur new lighting options

By Megan McKay-Rice

Children love chasing fireflies and catching them in jars. The real magic begins as the intermittent glow captures the captives. That same sense of wonder is found in like as a scientist refines the process of making light-emitting diodes—highly efficient light bulbs comparable to the glow of fireflies.

Manufacturers are searching for economical ways to contain a column of LEDs in a single lighting shell just as children attempt to gather enough fireflies to make a lamp, an LED jar could create enough light output (lumens) to match that of traditional incandescent bulbs.

The research is part of a national effort aimed at redefining household lighting. Starting this month, 100 watt standard bulb, a technology developed in the United States by Thomas Edison in 1878—must become more energy efficient.

The U.S. Energy Information Administration estimates 13.6 percent of our nation's energy supply is used to keep the lights on. A lot of that power is wasted if you have ever looked at a traditional light bulb when it is on: you realize much of the energy—90 percent—is released as heat. That leaves a lot of room for improvement.

In 2007, Congress passed phase-in legislation that requires household light bulbs using 40 to 100 watts to consume at least 28 percent less energy by 2014 than traditional incandescents, saving America an estimated \$6 billion to \$10 billion in lighting costs a year. The law also requires light bulbs to become 70 percent more efficient than traditional bulbs by 2020.

LEDs already exceed this goal.

"With shading lighting options and consumers looking for every opportunity to save, navigating lighting solutions has never been so important," says David

Not Exactly a Ban ...

As of January 1, new federal efficiency standards for 100-watt bulbs to consume 25 percent less energy by 2014 and 75 percent less energy by 2020. Traditional 100-watt bulbs typically use 100 watts or less to provide you a comparable amount of light. If you are replacing a 100-watt bulb, a good rule of thumb is to look for one that delivers about 1,600 lumens.

The act leaves the impact to many factors of inefficient bulbs, but stores will be able to sell their remaining inventory.

Source: U.S. Department of Energy

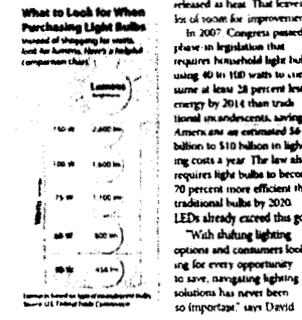
Schuelerman, CE Lighting's public relations manager. The act does not actually ban incandescent bulb technology. "It's equivalent to standards passed in the 1980s to make refrigerators more energy efficient," says Brian Sebosta of the Cooperative Research Network, a division of the National Rural Electric Cooperative Association. "Refrigerators use less than one-third of the electricity today than they did in the mid-1970s, but consumers can't tell a difference in how their food is cooled. The premise is, why not do the same for light bulbs?"

The improved efficiency requirements apply only to screw-based light bulbs. Specialty bulbs for appliances, heavy-duty bulbs, colored lights and three-way bulbs are exempt.

Look for New Labels

Consumers must switch from thinking about light bulbs in terms of watts (energy used) to lumens (light produced). "Lumens, not watts, tell you how bright a light bulb is, no matter the type of bulb," says Amy Hebert of the Federal Trade Commission. "The more lumens, the brighter the light."

The FTC has designed a "Lighting Facts" label and shopping guide that compares bulbs with traditional incandescent bulbs based on wattages and equivalent lumens. Beginning in 2012, labels on light bulb packages will emphasize a bulb's brightness



in lumens, annual energy cost and expected lifespan.

Traditional bulbs will largely fit into three categories:

- **Halogen incandescents**, which use 25-percent less energy and last three times longer than regular incandescents, but are more expensive.
- **Compact fluorescent lamps**, which use 75-percent less energy and last up to 10 times longer.
- **LEDs**, which use 75-percent to 80-percent less energy and last up to 25 times longer.

"CFL, halogen and LED technologies all offer energy savings, but at different intervals, and all with their own pros and cons," says Schuelerman.

For consumers comfortable with their old incandescent bulbs, halogen incandescents will be an easy first step. Featuring a capsule of halogen gas around the bulb's filament, they are available in a variety of familiar colors and can be dimmed.

"Halogen offers a big efficiency advantage over standard incandescent bulbs," says John Strimink, global product general manager of GE Lighting. "It consumes fewer watts, while delivering a precise dimming capability and a bright, crisp light."

The most familiar options on the market today—and most economical—are CFLs. The bulbs are available in an array of colors and some can be dimmed. Always check the package to make sure a bulb meets your needs.

LED bulbs, such as the Energy Smart model from General Electric, use 75 percent to 80-percent less energy than incandescent bulbs.

According to Schuelerman, CFLs generally are best used where lighting is left on for extended periods and full brightness is not immediately necessary. As with all fluorescent bulbs, CFLs contain a small amount of mercury—five times less than a standard CFL—but should be recycled. Many retailers offer free CFL recycling. For details, visit www.eyes.gov.

Although still developing, LED lights, recessed fixtures and some lower wattage replacement bulbs are on store shelves. "LEDs are the up-and-coming solution," says Schuelerman. "As they come down in price, homeowners will embrace them. Currently, most residential LEDs are used for outdoor lighting where fixtures are left on for extended periods and changing bulbs is not easily done. LEDs are also great for linear applications like under-cabinet lighting."

LEDs are more expensive than other options: a replacement for a 60-watt incandescent bulb costs \$10 to \$60. CFLs will fall as manufacturers respond to growing consumer demand.

But LEDs are not without their problems. They have to stay cool to operate efficiently and when several bulbs are placed together for a brighter, more customer-friendly light, temperatures rise. Many manufacturers are accounting for this by adding cooling elements. Some bulbs feature a spine design to allow air to flow around the base, others have fans built into the bulb.

Can You See a Difference?

Some consumers believe more efficient bulbs will not provide the same warm look and feel as classic bulbs. Schuelerman disagrees. "Lighting technologies are advancing at such a rate that consumers won't notice a mark of difference in the color of light from different technologies or how that light is dispersed," he says. "You also won't instantly see a difference in bulb shape. Some consumers don't like the look of twist-shaped CFLs, for example, so we offer covered CFLs that look just like incandescent bulbs. We also have an LED bulb that is a replacement for a 40-watt incandescent, as well as halogen bulbs, that both are housed in incandescent-shaped shells."

The difference will be found on your monthly electric bill. More efficient bulbs use 25 percent to 80 percent less energy than traditional incandescents, and last much longer.

The U.S. Department of Energy says each household can save \$50 a year by replacing 15 traditional incandescent bulbs.

"With these new technologies, homeowners will be spending less on electricity bills for lighting and changing fewer bulbs," says Schuelerman. ■

For more information on lighting options, visit www.eyes.gov. Lighting. For details on the change and shopping tips, visit www.ftc.gov/lighting. Megan McKay-Rice writes on consumer and cooperative affairs for the National Rural Electric Cooperative Association.

Explore Heating and Cooling Options

Q: My old heating and cooling system must be replaced. With high energy costs and future energy price volatility, how can I determine the best type to go with?

A: It can make economic and environmental sense to switch to an entirely different type of heating source for your home. The costs of fuel, such as natural gas, propane, heating oil and electricity have shifted dramatically in the past decade. Many new heating systems last 20 years or more, so with wide variations in fuel costs, long-term estimated operating costs and paybacks are not always reliable.

Electricity prices are the most stable and will probably continue that way. For houses heated with electricity, air source or geothermal heat pumps make good sense because they can heat, as well as cool, your house efficiently.

A standard air-source heat pump is basically a central air conditioner

with a few extra parts. The outdoor unit looks exactly the same as a central air conditioner, but it's called a heat pump because it literally pumps heat out of your house (cooling mode) or into your house (heating mode) from the outdoor air around the outdoor compressor/condenser unit.

Among central heating and cooling systems, geothermal heat pumps provide the highest efficiency and lowest year-round utility bills. While geothermal heat pumps have much higher initial installation costs due to the need to place loops or tubing to run through the ground or to a well or pond, the federal stimulus bill provides consumers—through the

end of 2016—a 30-percent tax credit on the cost of putting in a geothermal heat pump system, which makes them more attractive.

The primary advantage of installing a heat pump of any kind is they can be used year-round for both heating and cooling. This provides year-round savings and shortens the payback period. In contrast, a super-efficient furnace is used only during winter and a central air conditioner only during summer.

I use a portable heat pump in my own home and office for year-round savings. In addition to cooling the room during summer, it also functions as an efficient portable heater during winter. It produces 14,000 Btu per hour of cooling and 11,000 Btu of heating. This is much more heat output than a standard electric space heater using the same amount of electricity during winter.

The efficiency of a portable air conditioner is similar to a window air conditioner. Although this is less efficient than the newest central air conditioners, using one can still save money. By keeping just one or two rooms comfortably cool with clean air year-round, your central thermostat higher and save electricity overall. Use it in the dining room for dinner, roll it into the living room and then to the bedroom for sleeping.

They are typically mounted on casters so they can be easily rolled from room to room. Most operate on standard 120-volt electricity so they can be plugged into any wall outlet near a window.

A portable air conditioner/heat pump operates similarly to a typical window unit. The internal rotary compressor, evaporator and condenser function in the same way. The primary difference is it is on casters and rests on the floor.

When choosing a heating and cooling system, there are other intangible factors to consider. Every type of system requires some maintenance, which can increase the overall costs. A heat pump requires about the same amount of service as an air conditioner. ■



An efficient geothermal heat pump is shown with and without the front cover. Notice the large air duct and water fittings for the heating water.



To ask a question, write to James Dullay, Energy Advisor, 6806 Rowdgreen Dr., Cincinnati, OH 45244, or check his Web page, www.dullay.com.
Copyright 2012, James Dullay

2009, many consumers bought efficient appliances in 2010 and 2011. Although rebates also were offered for HVAC systems and water heaters, kitchens and laundry workrooms were the clear favorites, garnering 88 percent of all redeemed rebates. About 562,000 consumers added refrigerators, 351,000 added clothes washers and 297,600 dishwashers were updated.

The U.S. Department of Energy estimates this influx of efficient appliances will save \$48 million in energy costs annually. But these savings are only realized when consumers follow the adage, "Out with the old, in with the new."

Unfortunately, a national electric cooperative survey shows that is not always the case.

"A lot of folks buy these great new Energy Star refrigerators, then put the old energy hog model in the basement as a side fridge for the kids," says Brian Skolnick, a program manager for the Cooperative Research Network, a division of the National Rural Electric Cooperative Association that monitors, evaluates and applies technologies to help electric cooperatives control costs, increase productivity and enhance service to their members. "As a result, a lot of potential savings are lost. Sure, it's convenient to have the extra space, but these folks are paying significantly more just to have old fridges handy."

CRN partnered with E-Score, a Colorado-based efficiency group, to conduct a national survey of appliances. The study found 16 percent of American homes plug in two refrigerators, and 10 percent of households run a stand-alone freezer, adding expensive cold storage to electric bills.

Older models drain energy dollars. A refrigerator from the 1970s costs \$200 more to operate every year than a current model. A 1980s fridge is not much better, wasting \$100 in energy dollars annually.

Consumers should look beyond fancy bells and whistles and research appliances to guarantee energy savings, according to the Federal Trade Commission. The agency enforces mandatory EnergyGuide labels to help consumers compare brands and shop effectively.

"Most of the differences are on the inside—in the motors, compressors, pumps, valves, gaskets and seals, or in electronic sensors that make appliances smarter," warns the FTC. "Even if two models look the same from the outside, less obvious inside features can mean a big difference in monthly utility bills."

Appliance Aid

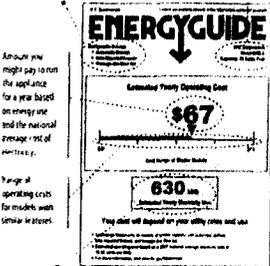
Most states have exhausted their allocated appliance rebate funds. As of January 30, 2012, Alaska, Oregon and California still had federally approved appliance rebate programs. Some states and local utilities provide rebates and appliance loans. Check www.dsireusa.org for local incentives or contact your local electric utility to see if appliance aid is available. ■

Appliance rebate information courtesy of the Cooperative Research Network, a division of the National Rural Electric Cooperative Association.

How to Use the EnergyGuide Label

Appliance manufacturers are required to provide an EnergyGuide label so consumers can compare energy use between different brands and models.

Appliance features that affect energy range. Product name, model and size.



How much electricity the product uses. Multiply this by your local electricity rate for an idea of your actual operating cost. Source: Federal Trade Commission.

You can learn about the energy efficiency of an appliance that you are thinking about buying through the yellow and black EnergyGuide label.

The Federal Trade Commission's Appliance Labeling Rule requires appliance manufacturers to put these labels on refrigerators, freezers, dishwashers, clothes washers, water heaters, furnaces, boilers, central air conditioning, room air conditioners, heat pumps and pool heaters.

When you shop for one of these appliances in a dealer's showroom, you should find the label hanging on the inside of an appliance or secured to the outside. The law requires that the labels specify:

- The capacity of the particular model.
 - The estimated annual energy consumption for refrigerators, freezers, dishwashers, clothes washers and water heaters.
 - The energy efficiency rating for air conditioners, heat pumps, furnaces, boilers and pool heaters.
 - The range of estimated annual energy consumption, or energy efficiency ratings, of comparable appliances.
- Some appliances also might feature the Energy Star logo, which means the appliance is significantly more energy efficient than the average comparable model. ■



SULPHUR SPRINGS VALLEY ELECTRIC CO-OP

Currents

Bolivian Utility Workers Visit SSVEC PAGE 4 • 2012 Science Fair Results PAGE 28

James Dulley

Co-Op News Editor

Clean AC Coils Lead to Higher Efficiency

Q: I want my old air conditioner to run as efficiently as possible. If my cooling costs are still too high, I may replace it. What can I do to tune it up myself?

A: It is wise to make sure your existing central air conditioner runs as efficiently as possible to reduce your electric bills. Because actual cooling costs depend on weather conditions, they vary significantly, making accurate comparisons difficult.

The easiest way to determine the savings from installing a new air conditioner is to compare the seasonal energy efficiency ratio of your existing model to that of a new model. You can be pretty sure your existing unit is not operating more efficiently than when it was new, so savings will be on the conservative side.

Installing a more efficient model offers additional savings. Electric utilities must provide enough electricity generation capacity to meet peak demand. If peak electricity demand can be decreased by homes running newer, higher efficiency air conditioners, fewer power plants will have to be built. The enormous cost of building a power plant is a factor in rates. You can do some things yourself to keep your air conditioner running efficiently. This does not preclude having regular professional service calls. Technicians have special equipment and pressure gauges to check several components of the system, which is impossible for homeowners to do on their own.

It helps to understand how an air conditioner works. It operates on a delicate balance of air flow rates over the indoor and outdoor coils and proper pressures of the refrigerant. The compressor makes the refrigerant very hot. The hot liquid is hotter than the outdoor air, so it loses heat to the air through the condenser coils. The cooler refrigerant then goes through an evaporator, which makes it very cold. This is similar to how your skin cools off when you step out of a shower.

The cold refrigerant flows through the indoor coil. The blower moves indoor air over the cold coils, which cools your

house air. At the same time, water condenses on the cold coils so the indoor air is both cooled and dehumidified.

Getting adequate air flow through the outdoor condenser coils is important for efficiency so refrigerant will be colder when it gets indoors. Make sure weeds and shrubs do not grow too close to the outdoor unit and impede air flow. Don't run bikes or other items against the unit, which also may block air flow.

Switch off the circuit breaker to the unit and remove the outdoor cabinet. Clean out debris that has accumulated inside it, which may block the coils. You don't have to make it spotless. If fins are bent over in spots, try to straighten them enough so more air gets through.

It is important that all of the screws holding the cabinet sections together are tight when you reinstall the cabinet. Even if it is clean and you do not remove the cabinet, check all of the screws. If they are loose, leaks will draw air in gaps instead of through the coils as designed.

Just as the proper amount of air flow is important through the outdoor coils, it is also important through the indoor coils. With the circuit breaker still switched off, remove the side cover on the indoor unit to expose the evaporator coils and the blower. When you reinstall the cover, make sure to tighten the screws.

A lot of dirt can accumulate on the indoor coils because the coils get damp when the air conditioner is running and dirt sticks to them. The dirt blocks air flow and insulates the coils from the air. Wipe the coils and use the brush attachment on your vacuum cleaner to clean them and the blower as well as possible.

Although you often hear the blower filter should be changed regularly, most people don't do it. At the beginning of the cooling season, change the filter whether you think it is dirty or not. A dirty filter increases air flow resistance, which reduces efficiency. Check the joints in the ducts for any air leaks. Seal them with aluminum tape or black Gorilla duct tape. ■



Remove garden tools and other items from around the condenser coils to ensure that air flow is not restricted.



To ask a question, write to James Dulley, Energy Report Editor, Sulphur Springs Valley Electric Cooperative, 42246, or check my Web page, www.dulley.com

Copyright 2012, James Dulley

Attention-Grabbing Gadgets

Cool stuff that shows off your inner geek, and might even be useful

By Mike Teegarden

If you spend too much time on your couch surfing the net or watching TV, you might not be aware of some of the latest in technology that automates tasks around your home, which, well, might help you spend more time relaxing on your couch.

From keeping your home comfortable and cooking quick meals to harnessing the power of the sun and fastening the next crop of inventors, this list offers a variety of ways to use the latest technology.

Nest

Thermostats rarely rate as gotta-have gizmos, but Nest is different. Invented by a former Apple designer after being frustrated by programming his own thermostat, Nest is the first device that learns your schedule and creates a program based on what it learns.

After a week of learning, Nest is ready to take over, and offers ways to help you cut your energy bill.

The sleek design and simple controls give the device a futuristic look compared with other thermostats on the market. An outer dial ring sets the temperature. The thermostat displays blue for cooling and orange for heating. It also displays how long it will take to reach the set temperature.

Sensors built into the

thermostat can determine room activity, relative humidity and light levels. The Auto-Away feature uses this information to sense when the home is unoccupied. Nest's built-in Wi-Fi allows control of the home HVAC system through a computer or smartphone app.

Returning home from a trip? Turn on the heat or air conditioning from the airport as your home is comfy when you get there.

Easy to install, Nest requires connecting four wires. \$129, addtohome.com \$25 each at www.nest.com.

Egg-and-Muffin Two-Grill Toaster and Egg Poacher

If you like fast food breakfasts, but hate to hit the drive-through in the morning, this might be your new best friend. In four minutes, the Back-to-Basics egg and muffin toaster can toast two muffins, poach or steam-scramble two eggs and heat a slice of meat. But wait, there's more. It also can boil up to four eggs at once. Adjusting the amount of water controls how hard the yolk is cooked. \$33 at Amazon.com.

friend.

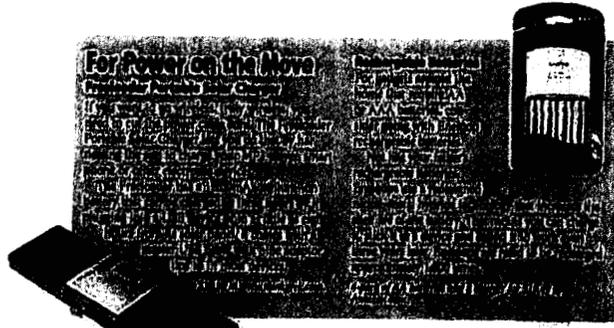
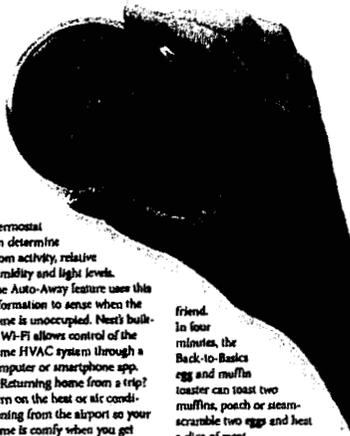
In four minutes, the Back-to-Basics egg and muffin toaster can toast two muffins, poach or steam-scramble two eggs and heat a slice of meat.

But wait, there's more. It also can boil up to four eggs at once. Adjusting the amount of water controls how hard the yolk is cooked. \$33 at Amazon.com.

Stop Vampire Leaks

The Baldu Conserve Socket uses a simple three-setting timer to shut off power to any device plugged on to it. It is simple in looks and

Continues on page 26



Gadgets

Continues from page 8

operation. Timer settings include six hours, three hours and a half hour. Plug it in and set the timer on the side. It is perfect for managing charging devices, where you don't want to leave it going once the device is charged. \$9.99 at Amazon.com.

Fizz, Bubble & Flash!

We wouldn't have some of the cool gadgets on this page without inventors. Help channel the inner inventor in your son or daughter with "Fizz, Bubble & Flash! Element Explorations & Atom

Adventures for Hands-On Science Fun!

Discover what you have in common with party balloons, footballs, computer chips, pizza dough, table salt and TV screens; "Break" a water molecule; produce fluorescent light (without using a switch); enjoy a half-life snack; compare anti-periphratic; separate the iron from your breakfast cereal; find out why broccoli smells; and soda makes a coin shine; and discover the secret of static cling and what makes a smoke detector work. \$12.95 at Amazon.com.



James Dulles

Cut Your Utility Bills

Clean AC Coils Lead to Higher Efficiency

Q: I want my old air conditioner to run as efficiently as possible. If my cooling costs are still too high, I may replace it. What can I do to tone it up myself?

A: It is wise to make sure your existing central air conditioner runs as efficiently as possible to reduce your electric bills. Because actual cooling costs depend on weather conditions, they vary significantly, making accurate comparisons difficult.

The easiest way to determine the savings from installing a new air conditioner is to compare the seasonal energy efficiency ratio of your existing model to that of a new model. You can be pretty sure your existing unit is not operating more efficiently than when it was new, so savings will be on the conservative side.

Installing a more efficient model offers additional savings. Electric utilities must provide enough electricity generation capacity to meet peak demand. If peak electricity demand can be decreased by houses running newer, higher-efficiency air conditioners, fewer power plants will have to be built. The conservation cost of building a power plant is a factor to enter.

You can do some things yourself to keep your air conditioner running efficiently. This does not preclude having regular professional service calls. Technicians have special equipment and pressure gauges to check internal components of the system, which is impossible for homeowners to do on their own.

It helps to understand how an air conditioner works. It operates on a delicate balance of air flow rates over the indoor and outdoor coils and proper pressures of the refrigerant. The compressor makes the refrigerant very hot. The hot liquid is better than the outdoor air, so it flows best to the air through the condenser coils.

The cooler refrigerant then goes through an evaporator, which makes it very cold. This is similar to how your skin cools off when perspiration evaporates. The cold refrigerant flows through the indoor coil. The blower moves indoor air over the cold coils, which cools your

house air. At the same time, water condenses on the cold coils so the indoor air is both cooled and dehumidified.

Getting adequate air flow through the outdoor condenser coils is important for efficiency so refrigerant will be colder when it gets indoors. Make sure weeds and shrubs do not grow too close to the outdoor unit and impede air flow. Don't rest robes or other items against the unit, which also may block air flow.

Switch off the circuit breaker to the unit and remove the outdoor cabinet. Clean out debris that has accumulated inside it, which may block the coils. You don't have to make it spotless. If fins are bent over in spots, try to straighten them enough so more air gets through.

It is important that all of the screws holding the cabinet sections together are tight when you reinstall the cabinet. Even if it is clean, and you do not remove the cabinet, check all of the screws. If they are loose, leaks will draw air in gaps instead of through the coils as designed.

Just as the proper amount of air flow is important through the outdoor coils, it is also important through the indoor coils. With the circuit breaker still switched off, remove the side cover on the indoor unit to expose the evaporator coils and the blower. When you reinstall the cover, make sure to tighten the screws.

A lot of dirt can accumulate on the indoor coils because the coils get dirty when the air conditioner is running and dirt sticks to them. The dirt blocks air flow and insulates the coils from the air. Wipe the coils and use the brush attachment on your vacuum cleaner to clean them and the blower as well as possible.

Although you often hear the blower filter should be changed regularly, most people don't do it. At the beginning of the cooling season, change the filter whether you think it is dirty or not. A dirty filter increases air flow resistance, which reduces efficiency. Check the joints in the ducts for any air leaks. Seal them with aluminum tape or black Gorilla duct tape. ■



New quality coils and other items form around most air conditioner condenser coils to do it best.



New quality coils and other items form around most air conditioner condenser coils to do it best.



Pre-Bit Christmas trees featuring Energy Smart LED light sets are as much as 80 percent less energy and last longer. Photo courtesy of General Electric

Decorate Efficiently

This holiday season, deck the halls with cost-saving, energy-efficient lighting

By Angela Perez

When one goes out, they all go out, right?

Wrong. If you use light-emitting diodes to do your holiday decorating. These hardy, energy-saving lights are guaranteed to give you one less thing to worry about so you can better focus on the joys of the season.

Why are LED holiday lights better than traditional bulbs?

LEDs are now on par with traditional bulbs. Gone are the days when LED holiday lights were known for a harsh white light or stark colors that created a less-than-magical atmosphere. These days,

LEDs come in warm, inviting colors in a variety of light beam patterns and dimming options, giving you lots of creative options for decorating.

LEDs last longer than traditional lights. In fact, they have a life span of about 20,000 hours, enough to last for 40 holiday seasons.

The lights don't have glass or filaments, which makes them durable and resistant to breaking. Because LED bulbs are so strong, one bad bulb generally does not darken the entire strand.

For those enthusiastic decorators who like to blanket their entire house and yard in holiday lights, LEDs could save hours of painstaking work each year.

LEDs use less energy, which means less strain on your winter electric bill. Running LEDs on one 6-foot-tall Christmas tree for 12 hours a day for 40 days can save at least 98 percent, compared with traditional incandescent lights.

Because they use less energy, LEDs make it safer to connect multiple strands end-to-end without overloading the wall socket. Also, they are cool to the touch, reducing the risk of fire.

Look for brands and manufacturers of Energy Star-qualified LED decorative light strings at www.energystar.gov. Angela Perez writes an technology issues for the National Rural Electric Cooperative Association.

Holiday Entertaining Can Be Draining

By Brian Stoboda

Holidays can be draining: dinner at the in-laws, parties at work and school, buying, wrapping, un-wrapping and cleaning up. At the end of a long day, the season is in full swing and the big-screen TV and couch "It's a Wonderful Life."

Yet when you go to bed, your TV and home entertainment system don't really take a rest.

Many of these devices, as well as your computer equipment, use energy even when turned off. For example, your HDTV could be remembering the last channel you viewed or the language you speak, or trying to turn on faster.

This power draw is commonly called "phantom" or "vampire" load. According to Lawrence Berkeley

National Laboratory, the average home attributes 8 percent of its monthly electricity consumption to these energy vampires.

Fortunately, TV and DVD players often have power-saving settings in the menu menu. Although setting the factory settings usually means the unit will take a few more seconds to start, it is worth taking a look if you want to trim your electric bill.

If there is no power-saving option, try the energy-savings by using a smart power strip.

This technology allows you to plug devices into a specially marked section of the strip to keep power flowing to them, while letting you turn off other items.

You can shut off your stereo, DVD player or audio system without losing the ability to record

programs to a DVR or VCR or having to reprogram the TV every time you want to watch a show.

There is a catch: If you unplug your television or cable/satellite receiver box, it usually has to run its initial setup program when switched back on. Depending on the model, it could take up to 30 minutes for channels to be recognized, and you may have to reset preferences.

Most of us aren't willing to do the extra day.

The bottom line is, entertaining doesn't have to drain your budget. In fact, the money you save by eliminating the energy vampires in your home may even be enough to go out to a movie.

Brian Stoboda is a program manager specializing in energy efficiency for the Cooperative Research Network.



Regular power strips and "smart" power strips can help cut down on "phantom power" drains from home electronics. Photo courtesy of Lawrence Berkeley Cooperative

James Dullely

Cut Your Utility Bills

Making Windows More Efficient

Q: Our house has original single-pane windows, and we always feel chilly near them. I get quotes on having them replaced, but I can't afford it now. What can I do in the meantime to improve the efficiency of the old windows?

A: I am not surprised you feel chilly near old single-pane windows on a cold day. They typically have huge heat loss and cold-air gain because of poor caulking and weatherstripping (if there is any to begin with).

The most significant heat loss and chilly feeling occurs on a clear winter night. The R-value—a higher-the-better number that shows the ability of insulation to resist the transfer of heat—of a single pane of glass is only R-1, compared with an insulated wall at R-20.

You can do many things on a limited budget to improve the year-round efficiency of your windows. Before you make any improvements, check the caulking and weatherstripping on the windows and ensure the framing is not deteriorated. If you find outdoor conditions, fix them before you make improvements or your hard work won't be worth much.

Adding storm windows, interior or exterior, can more than double the energy efficiency of your windows. Custom-made, multi-track storm windows often cost almost as much as new windows, so make your own using clear acrylic sheets. An advantage of using acrylic instead of glass is that acrylic blocks most of the sun's falling ultraviolet rays.

Exterior storm windows can be made with 1-by-2-inch lumber, acrylic sheet, and foam weatherstripping. If you size them to fit inside the wall opening and paint them to match your existing window frames, they will look like part of your windows. The compressible foam weatherstripping should hold them in place in the opening. Push them in as far as possible to minimize the air gap.

To install interior storm windows, use a bit with magnetic seals. The magnetic section of the seal attaches to the acrylic

sheet with an adhesive backing, and the steel strip attaches to the window frame. This allows you to easily remove them during summer for ventilation. If you use air conditioning most of the summer, just leave them up year-round.

Another option is to install insulating window shades or curtains to increase the overall insulation level of the window opening and to block the radiant heat loss from your skin through the window.

Some of the most efficient window shades can add R-6 insulation to your windows. These are multilayer roll-up shades with a heat-reflecting airproof inner film layer to greatly reduce radiant heat loss or gain during summer. These shades are particularly effective because the side edges slide in channel tracks, which reduce the amount of air that circulates against the cold glass.

The newest energy-saving permanent window films are also effective for reducing winter/summer heat loss. They have a slight tint so they can't be detected and use the same type of microscopically thin low-conductivity metallic coating as expensive replacement windows. Simple vinyl static-cling film will also help. But before installing anything on double-pane windows, check the window manufacturer's warranty regarding film application.

Do-it-yourself energy-saving film installation kits are available at most home improvement stores. Depending on your climate, you may want to select a darker tint if summertime heat gain is your most significant concern. Because the sun is higher in the sky during winter, installing window awnings for shade and a lighter film on south-facing windows will allow for some passive solar heating from the lower wintertime sun.

A final option is to install a tilt-in double-pane, ash-only replacement kit. If your existing frames are in good condition, this will convert your old windows into very efficient ones. This option also provides the convenience of tilt-in sashes for the ease of cleaning both sides of the window glass from indoors.



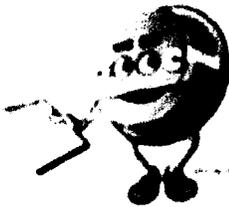
Applying energy-saving window film is a simple do-it-yourself task. Courtesy of CP Films



To get a complete guide to making energy-saving window film, visit www.cpfilm.com.

What tells you how to fill this socket that could put money back in your pocket?

The average home has 100 light bulbs. If you have 100 incandescent bulbs, you're wasting \$100 worth of energy every year. That's \$100 you could have in your pocket. It's time to change out your old bulbs for energy-saving CFLs. They use only 25% of the energy of incandescent bulbs and last 10 times longer. They're available at most hardware stores and home improvement centers. Call 1-800-4-A-ENERGY for more information.



SSVEC's New Energy Audit
Maximize your savings!

Supplier: Springer Valley Electric Cooperative, Inc.

He's not from the \$1,000,000 sweepstakes. But he could save you hundreds.

For every dollar you spend on energy, you're spending 10 cents more than you need to. That's \$100 more for every \$1,000 you spend. It's time to change out your old bulbs for energy-saving CFLs. They use only 25% of the energy of incandescent bulbs and last 10 times longer. They're available at most hardware stores and home improvement centers. Call 1-800-4-A-ENERGY for more information.

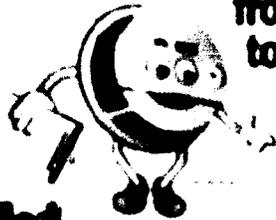


SSVEC's New Energy Audit
Maximize your savings!



Supplier: Springer Valley Electric Cooperative, Inc.

What can help you save and save from the attic to the microwave?



My attic is full of energy-wasting incandescent bulbs. I need to change them out for energy-saving CFLs. They use only 25% of the energy of incandescent bulbs and last 10 times longer. They're available at most hardware stores and home improvement centers. Call 1-800-4-A-ENERGY for more information.



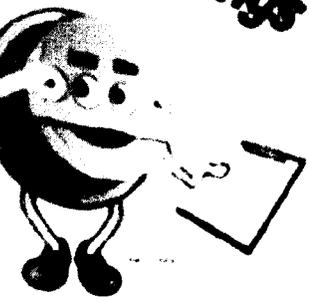
SSVEC's New Energy Audit
Maximize your savings!

Supplier: Springer Valley Electric Cooperative, Inc.



MAXIMIZE your savings

For every dollar you spend on energy, you're spending 10 cents more than you need to. That's \$100 more for every \$1,000 you spend. It's time to change out your old bulbs for energy-saving CFLs. They use only 25% of the energy of incandescent bulbs and last 10 times longer. They're available at most hardware stores and home improvement centers. Call 1-800-4-A-ENERGY for more information.



SSVEC's New Energy Audit
For your home or business.

Supplier: Springer Valley Electric Cooperative, Inc.



SAVINGS
 HE'S BEYOND THAT
 HUNDREDS OF DOLLARS
 BACK IN THE FAMILY'S
 POCKET? AND THE GOOD NEWS IS



HE SAYS
 HE'LL SAVE 10%
 YOUR HOME IS 10%
 WITH THE NEW ENERGY
 PLAN. HE'S SAYING YOU
 GET A PERSONALIZED



IT'S SO SIMPLE
 ABOUT SO EASY TO
REDUCE ENERGY
 AND SAVE MONEY
 PLUS OUR
 CARBON-FREE PLAN



HE'S
 HE'LL SAVE 10%
 YOUR HOME IS 10%
 WITH THE NEW ENERGY
 PLAN. HE'S SAYING YOU
 GET A PERSONALIZED



HE'S
 HE'LL SAVE 10%
 YOUR HOME IS 10%
 WITH THE NEW ENERGY
 PLAN. HE'S SAYING YOU
 GET A PERSONALIZED



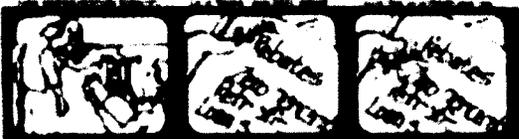
HE'S
 HE'LL SAVE 10%
 YOUR HOME IS 10%
 WITH THE NEW ENERGY
 PLAN. HE'S SAYING YOU
 GET A PERSONALIZED



HE'S
 HE'LL SAVE 10%
 YOUR HOME IS 10%
 WITH THE NEW ENERGY
 PLAN. HE'S SAYING YOU
 GET A PERSONALIZED



HE'S
 HE'LL SAVE 10%
 YOUR HOME IS 10%
 WITH THE NEW ENERGY
 PLAN. HE'S SAYING YOU
 GET A PERSONALIZED



HE'S
 HE'LL SAVE 10%
 YOUR HOME IS 10%
 WITH THE NEW ENERGY
 PLAN. HE'S SAYING YOU
 GET A PERSONALIZED



HE'S
 HE'LL SAVE 10%
 YOUR HOME IS 10%
 WITH THE NEW ENERGY
 PLAN. HE'S SAYING YOU
 GET A PERSONALIZED

Case No. / Agency Name
No. / Date

John



SA. [unclear] says that [unclear] is [unclear]
[unclear] says that [unclear] is [unclear]



They are [unclear] and [unclear] in the [unclear]
[unclear] says that [unclear] is [unclear]



[unclear] says that [unclear] is [unclear]
[unclear] says that [unclear] is [unclear]

Case No. / Agency Name
No. / Date

John



[unclear] says that [unclear] is [unclear]
[unclear] says that [unclear] is [unclear]



Home Audit Program

Although not part of our Current DSM/EEE program it was started with the approval of an ARRA Grant on Energy Efficiency. This program is part of the proposed DSM/EEE program currently under review by Staff.

SSVEC Energy Auditing

Sulphur Springs Valley Electric Cooperative's (SSVEC) was awarded American Recovery and Reinvestment Act matching grant funds from the Department of Energy to expand and expedite in SSVEC's smart grid modernization efforts. This effort includes an Energy Audit program to educate members on energy awareness and to improve the thermal envelope of homes as well as improve a home's energy efficiency. The energy audits would direct members to existing SSVEC no/low interest energy efficient based loan programs.

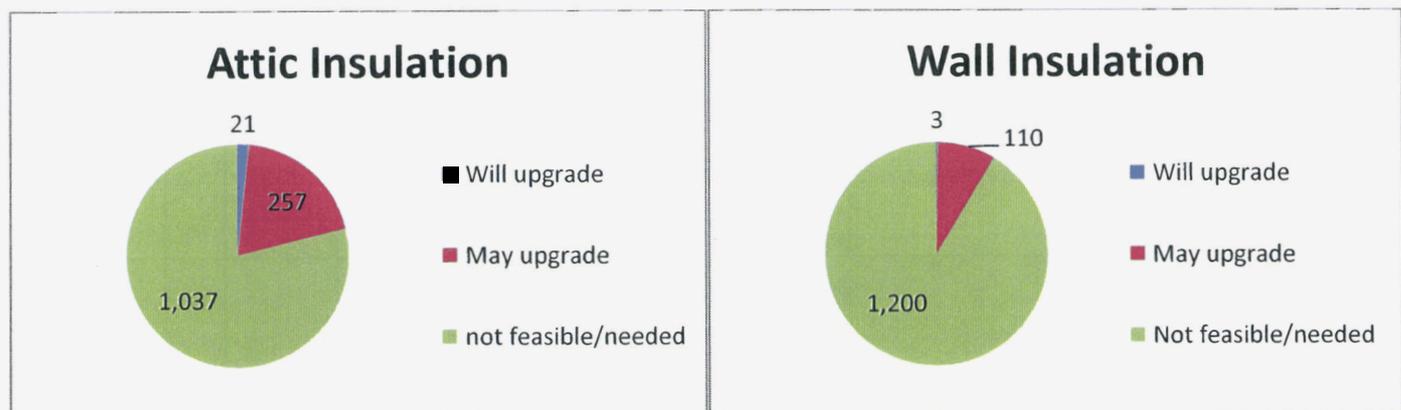
SSVEC began conducting energy audits in May 2011. These energy auditors visit a member's home upon request, conduct an in-depth analysis and make specific recommendations on what the home owner can do to decrease electric consumption. Upon completion of the energy audits, the auditors inquired how likely the members would be to implement these recommendations; Answers were limited to a) the member will implement the recommendations, b) the member may implement some or all of the recommendations or c) the member will not implement any of the recommendations. These auditors also promote SSVEC's DSM program and helps the member to determine which programs will provide them with the most help.

SSVEC completed 1,363 audits in 2012, yielding 81 recommendations which member indicated they will implement and 1,275 recommendations which member may implement. The auditors recommended several actionable items to enable members to lower their overall energy usage. The categories recommended to upgrade or improve were Infiltration, Windows, Doors and Insulation as well as heating and cooling appliances.

SSVEC has an energy efficiency zero interest loan program. The goal of this program is to get members to upgrade their thermal envelope as well as their heating & cooling units to more energy efficient ones.

Insulation

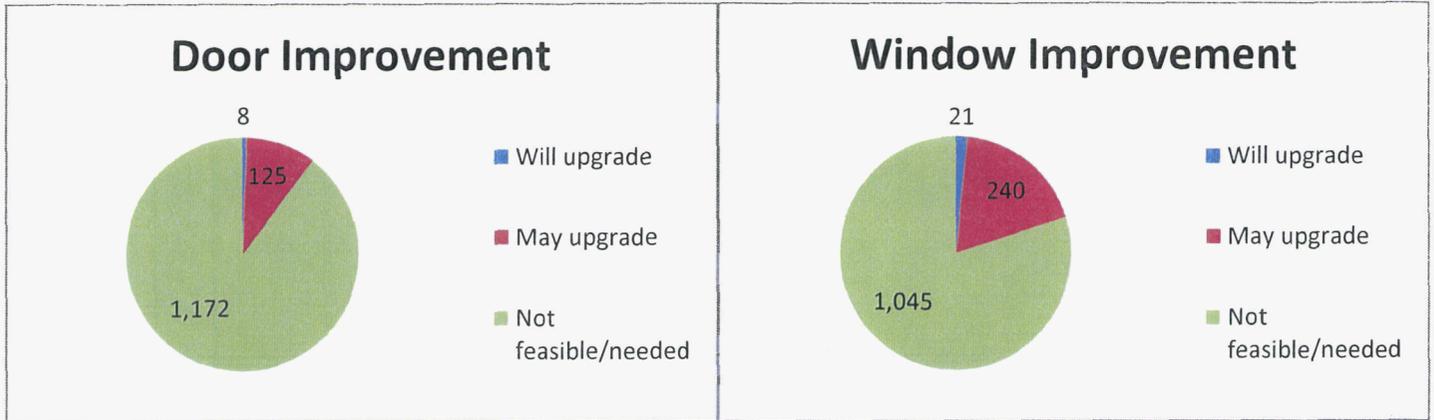
Attic and wall insulation can improve the thermal envelope of a residence. The goal of SSVEC is to improve attic insulation levels to at least R-38. Some walls are initially between R-2 and R-4; the goal is to increase wall insulation levels to between R-5 and R-10. Many of the homes audited did not have attic space (582). There were 1,037 homeowners who indicated they will not improve their attic insulation; 900 of the homeowners had attic insulation R-values greater than or equal to R-30.



Note: Not feasible / needed means that the attic or wall meets current thermal requirements or physically cannot be upgraded to current standards.

Windows & Doors

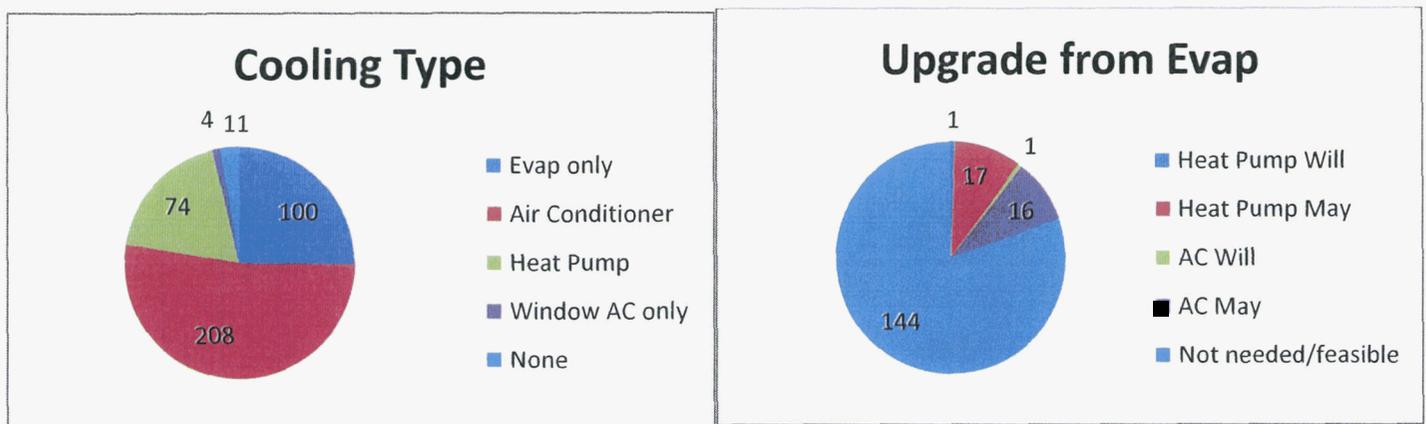
Door and window upgrades can also improve the thermal envelope of a residence. The goal of SSVEC is to replace old wooden exterior doors with insulated steel or fiberglass doors with an insulation value of R-5 or better and replace single pane window with dual pane windows with an insulation value of R-1.7 or greater (a U value of at least 0.58).



Note: Not feasible / needed means that the attic or wall meets current thermal requirements or physically cannot be upgraded to current standards.

Heat Pumps & Air Conditioning

New heat pumps and air conditioning systems are more efficient than older heating and cooling systems. Upgrading to a newer unit can reduce the energy consumed by a member. The goal of SSVEC is to replace old heating and cooling units with ones with a minimum SEER rating of 15 (16 SEER for split system heat pumps). There are 146 members with heat pumps; seven indicated they may upgrade their heat pump and two members they will upgrade to an A/C unit. There are 444 members with air conditioners; 24 members indicated they may upgrade to a heat pump and 12 members may upgrade their A/C unit.

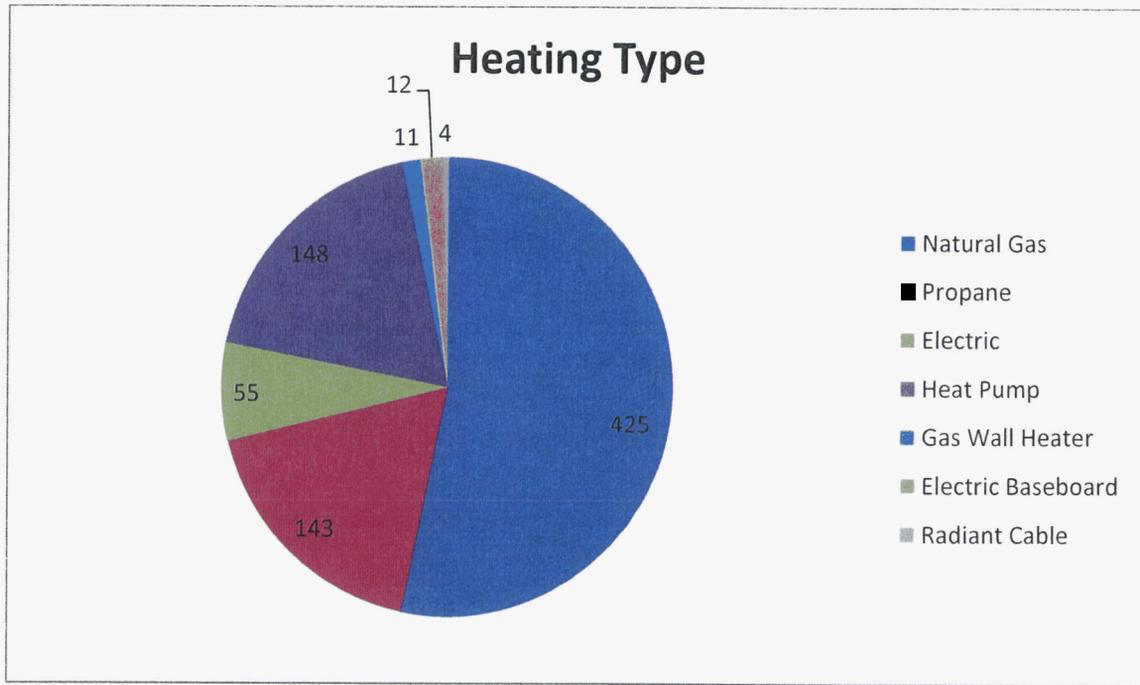


Note: Not feasible / needed means that the attic or wall meets current thermal requirements or physically cannot be upgraded to current standards.

Heating

There are some SSVEC members who prefer to heat their home by gas or other means. SSVEC's energy auditors also asked members if they would consider replacing an older, less efficient furnace (typically around

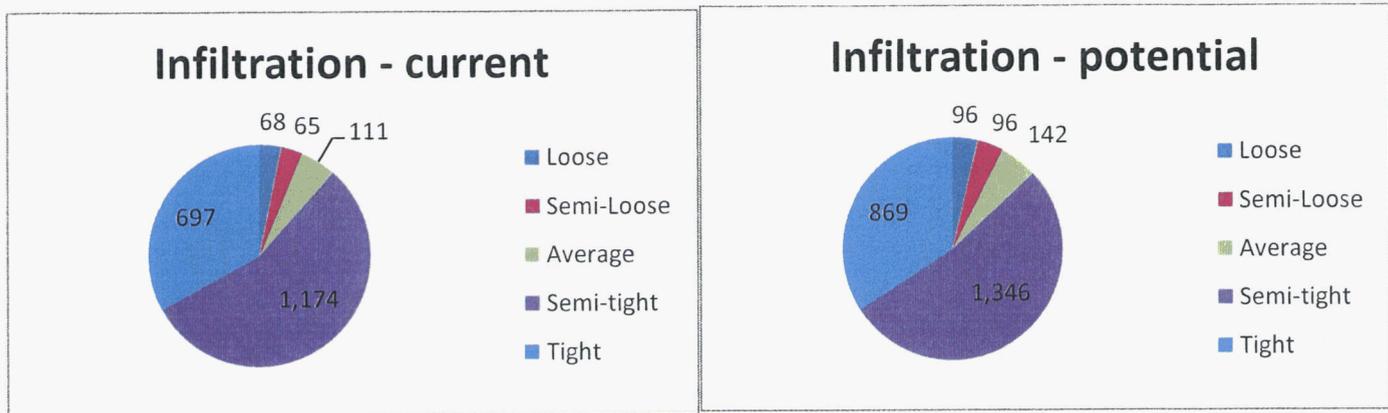
60% efficient) with a newer one (greater than 80% efficient, but less than 90% efficient; one member indicated they will, 19 stated they may and 402 do not need to upgrade.



	Qty	Will upgrade to Heat Pump	May upgrade to Heat Pump	Heat Pump Upgrade not needed or feasible	Will upgrade to Furnace	May upgrade to Furnace	Furnace Upgrade not needed or feasible
Natural Gas	425	---	17	401	1	19	402
Propane	143	---	15	128	1	3	138
Electric	55	1	11	39	---	1	48
Heat Pump	148	---	6	133	---	3	136
Gas Wall Heater	11	---	4	4	---	1	7
Baseboard Electric	12	---	---	12	---	11	4
Radiant Cable	4	---	2	2	---	1	3

Infiltration

Infiltration is the unintentional or accidental introduction of outside air into a building, typically through cracks in the building envelope, and worn or missing weather stripping around windows and doors. This is often the least expensive, yet most cost effective, method to decrease the energy needed to cool or heat one's home. The charts below show the current infiltration level and the potential infiltration level when recommended upgrades are complete.



These charts use construction labels based upon **Air Conditioning Contractors of America**

SSVEC's energy auditors also asked members if they would consider any other energy efficiency improvements to their homes; four stated they will, 173 stated they may and 455 find it not feasible to upgrade their homes using other energy efficient improvements.