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Commissioner

June 3, 2016

PARTIES OF RECORD

Re: Case No. 2016-00056
The Tariff Filing of East Kentucky Power Cooperative to Implement a New
Demand-Side Management Program

Attached is a copy of a memorandum which is being filed in the record of the above-referenced case. If you have any comments regarding the contents of the memorandum, please do so within five days of receipt of this letter. If you have any questions, please contact Matthew Baer, Commission Staff, at 502-782-2656.

Sincerely,

A handwritten signature in blue ink that reads "Aaron D. Greenwell".


Aaron D. Greenwell
Acting Executive Director

MB/pa

INTRA-AGENCY MEMORANDUM

KENTUCKY PUBLIC SERVICE COMMISSION

TO: Case File

FROM: Matthew Baer, Division of Financial Analysis 

DATE: June 3, 2016

RE: Case No. 2016-00056

The Tariff Filing of East Kentucky Power Cooperative to Implement a New Demand-Side Management Program

Pursuant to the Commission Staff's ("Staff") May 24, 2016 Notice, an informal conference ("IC") was held in this matter on May 26, 2016, at the Commission's offices in Frankfort, Kentucky, for the purpose of discussing certain outstanding issues in this case. A list of attendees is attached hereto.

The IC began with a discussion of how East Kentucky Power Cooperative, Inc. ("EKPC") and its 16 member cooperatives promote their demand-side management ("DSM") programs to end use customers. EKPC stated that the main method used to promote the proposed program would be through the member cooperatives' call centers. For this program, customer service representatives will discuss the various benefits of LED lights with customers when they call requesting outdoor lighting options. EKPC also noted that the cooperatives will be able to use the *Kentucky Living* magazine to further promote the new program.

EKPC continued by stating that at the time the proposed outdoor LED lighting program was initially designed, only one of its member cooperatives had any LED offering available to its customers. Because of the initial lack of LED offerings amongst the member cooperatives, EKPC was unaware if LED rates would be higher or lower than similar types of non-LED outdoor lights. EKPC stated that the additional capital cost of an LED light over a 100 watt high pressure sodium light was \$70, and after discussions with its DSM steering committee, that was how the \$70 incentive payment was determined.

Staff asked EKPC if the proposed DSM program could be designed to provide some part of the \$70 incentive payment to customers of the member cooperatives, considering the fact that customer bills would be higher as a result of choosing an LED light. EKPC stated that it had not initially thought of any other ways the program could be designed when it submitted the new DSM tariff. EKPC's consultant discussed other potential ways the program could be designed, including having two rebate programs—one for the cooperative, and one for the end use customer.

In response to a Staff question, EKPC indicated it has not had any discussion with South Kentucky Rural Electric Cooperative Corporation's concerning its LED tariff and its stated intent to phase out older types of outdoor lights and only offer LED lights going forward.

Staff questioned EKPC about the costs of LED fixtures, and what costs the member cooperatives paid for the fixtures. EKPC responded that the prices for LED fixtures vary among the cooperatives, and that cooperatives purchase the fixtures from multiple suppliers.

Finding that there were no further questions, the conference was adjourned.

COMMONWEALTH OF KENTUCKY
BEFORE THE PUBLIC SERVICE COMMISSION

In the Matter of:

TARIFF FILING OF EAST KENTUCKY POWER)
COOPERATIVE, INC. TO IMPLEMENT A) CASE NO.
NEW DEMAND-SIDE MANAGEMENT PROGRAM) 2016-00056

=====
May 26, 2016 Informal Conference
=====

Please sign in:

NAME

REPRESENTING

Quang D. Nguyen

PSC

David Sanford

EKPC-Gary Sanford

Scott Drake

EKPC

Josh Littrell

EKPC

Matthew Bays

PSC -FA

Leah Faulkner

PSC-FA

Isaac J. Scott

EKPC

Patrick Woods

EKPC

Bob Russell

PSC

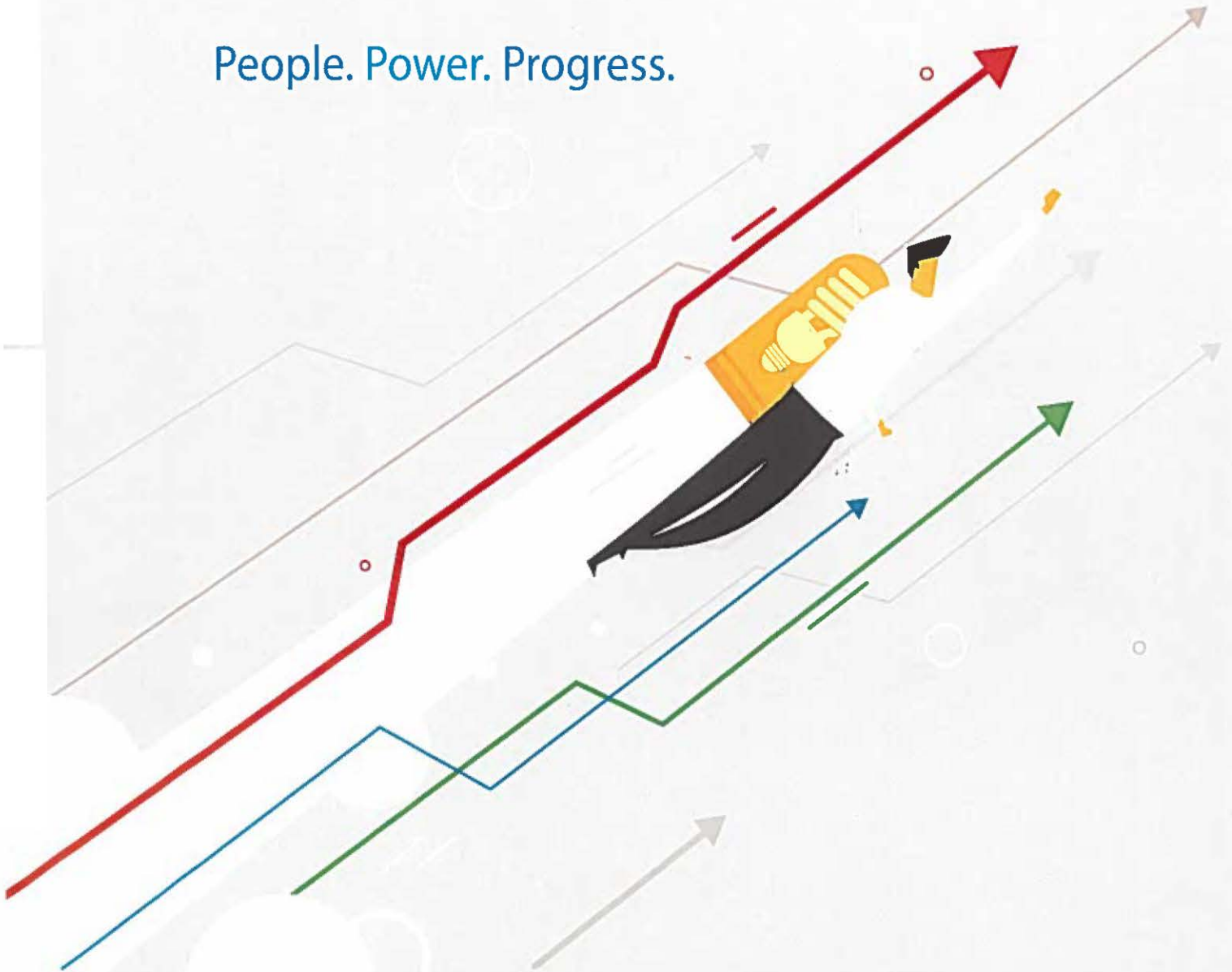
John Farley

EKPC - via phone

DSM

Demand Side Management
2015 Annual Report

People. Power. Progress.

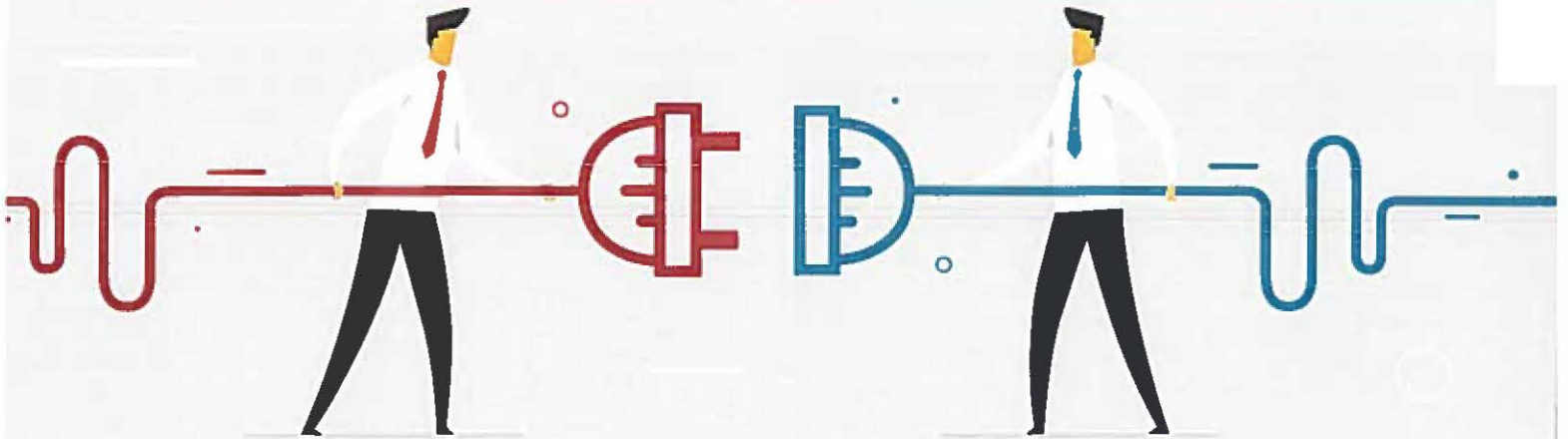


EAST KENTUCKY POWER COOPERATIVE

A Touchstone Energy Cooperative 

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Who We Are

Located in the heart of the Bluegrass state, East Kentucky Power Cooperative is a not-for-profit generation and transmission (G&T) electric utility with headquarters in Winchester, Ky. Our cooperative has a vital mission: to safely generate and deliver affordable, reliable electric power to 16 owner-member cooperatives serving more than one million Kentuckians.

Together, with our 16 owner-members, we're known as Kentucky's Touchstone Energy Cooperatives. The member co-ops distribute energy to 530,168 Kentucky homes, farms, businesses and industries across 87 counties. We're leaders in energy efficiency and environmental stewardship. And we're committed to providing power to improve the lives of people in Kentucky.

Targeting Participation

EKPC and its owner-member cooperatives are committed to helping members identify opportunities to improve the energy efficiency of their homes and businesses and offer a variety of options to achieve that goal. For more than 30 years, EKPC and its 16 owner-member cooperatives have been leaders in developing demand-side management (DSM) programs for Kentuckians.

The cooperatives have steadily built a portfolio of programs that is practical and cost-effective for the members. Each program is evaluated using industry-standard practices, and is shown to be a “win-win-win” situation. Successful programs are beneficial to the member at the end of the line by helping them save money and live more comfortably. The cooperative owner-member systems and EKPC find benefits by avoiding cost of new generation. By working together, energy-efficiency solutions can be more easily achieved.

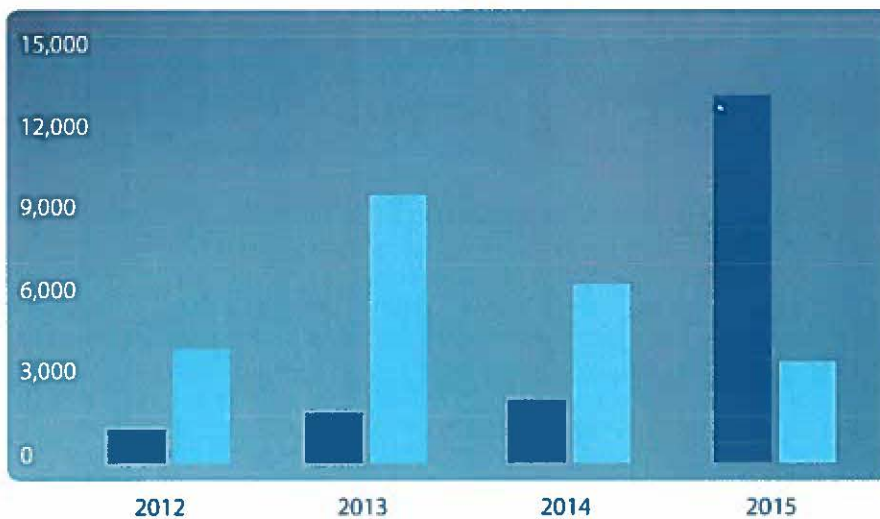
Collectively, the system employs 29 energy advisors, most of whom have advanced certifications such as RESNET Accredited Home Energy Raters (HERS) and Building Performance Institute (BPI) Building Analysts. They play a vital role by conducting free in-home energy assessments, resulting in thousands of energy audits each year. These visits provide opportunities to direct cooperative members to the most appropriate programs to help reduce energy usage and make their monthly bill more manageable.

Since 2005, EKPC’s portfolio has achieved average annual energy reductions of nearly 160 million kilowatt (KW) hours (kWh), and average annual peak reductions of almost 100 megawatts (MW).

In 2015, participation and savings stayed on track. Overall, energy-efficiency program participation increased more than 793 percent over 2014. These measures will result in a lifetime savings of 320,263 MWh and 640,525,545 pounds of carbon dioxide emissions.

2015 Member Participation

■ EE programs ■ DLC program

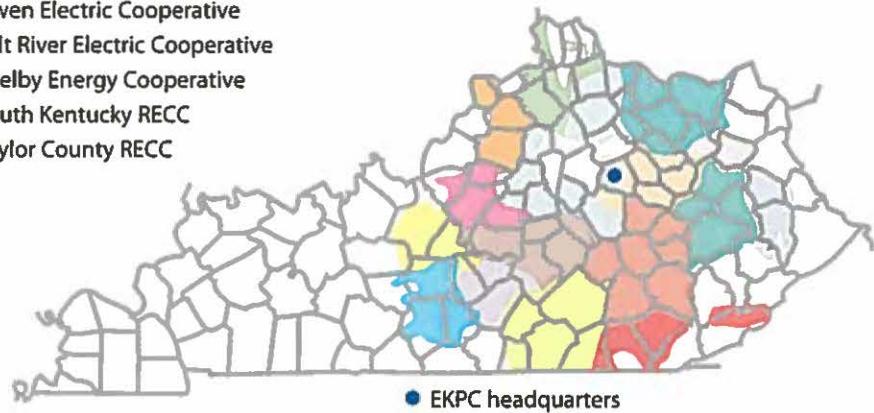


* Excludes CFLs and LEDs.

EKPC and its Owner-Members

Sixteen distribution cooperatives, which are called the member systems, own EKPC. The 16 co-ops include:

- Big Sandy RECC
- Blue Grass Energy Cooperative
- Clark Energy Cooperative
- Cumberland Valley Electric
- Farmers RECC
- Fleming-Mason Energy Cooperative
- Grayson RECC
- Inter-County Energy
- Jackson Energy Cooperative
- Licking Valley RECC
- Nolin RECC
- Owen Electric Cooperative
- Salt River Electric Cooperative
- Shelby Energy Cooperative
- South Kentucky RECC
- Taylor County RECC



East Kentucky Power Generation

Coal	Generation
Spurlock	1,346 net MW
Dale*	149 net MW
Cooper	341 net MW
Total	1,836 net MW

Natural Gas	Generation
Smith	Summer
Combustion	753 net MW
Turbine	Winter
Units	989 net MW
Bluegrass**	Summer
Combustion	501 net MW
Turbine	Winter
Units	567 net MW
Total Natural Gas Summer	1,254 net MW
Total Natural Gas Winter	1,556 net MW

Landfill	Generation
Bavarian	3.0 net MW
Laurel Ridge	3.0 net MW
Green Valley	2.3 net MW
Pearl Hollow	2.3 net MW
Pendleton	3.0 net MW
Glasgow***	1.0 net MW
Total Landfill	14.6 net MW

Hydro	Generation
Southeastern Power Adm. (SEPA)	170 MW

* Dale Station was retired in April 2016 due to the cost to comply with new, more-stringent federal regulations.
 ** Under an existing agreement, which continues until April 2019, a third party receives the output of one Bluegrass Generating Station unit.
 *** Under an existing agreement, a third party receives the output of Glasgow in a 10-year power purchase agreement.

Building the future, together

In 2015, EKPC and its owner-members were very focused on promotion and implementation of the newly-expanded DSM portfolio. With the rollout of three programs in late 2014 (ENERGY STAR Appliance Rebate, Appliance Recycling and ENERGY STAR Manufactured Home) and a low-income program called Community Assistance Resources for Energy Savings or CARES in 2015, the challenge was set to educate and gain participation.

In fact, that desire to increase participation in all DSM programs drove the reconstitution of the DSM and Renewable Energy Collaborative group. The Collaborative, which met for more than two years (beginning in 2013), is a joint project of EKPC, its 16 owner-member distribution cooperatives, environmental advocacy organizations and other interested stakeholders. The group's first recommendations on expanding the DSM portfolio were used to develop the newest programs. Collaborative 2.0 will continue those efforts in 2016.

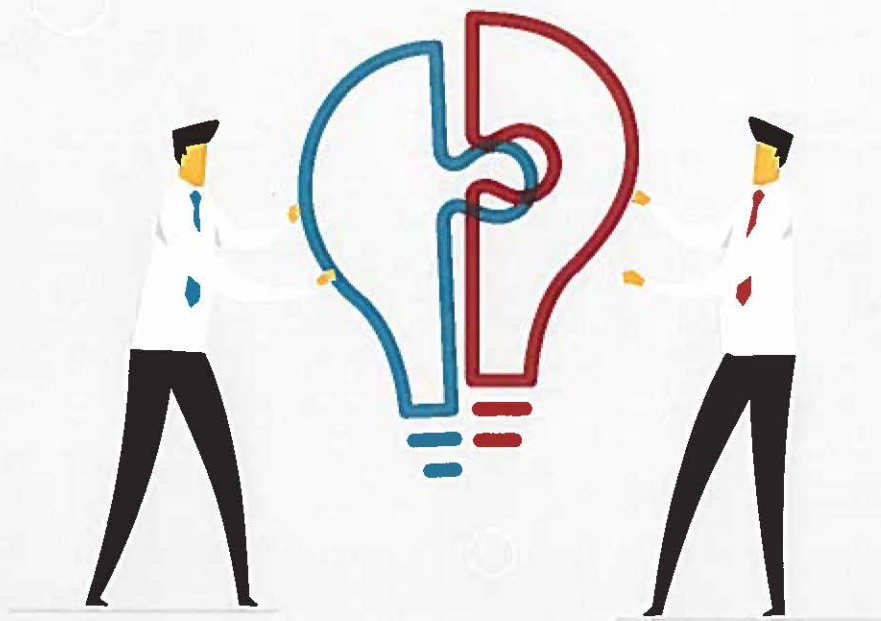
Under the name of the Collaborative 2.0, the group was given a new task in 2015 – to increase participation in DSM/energy efficiency and renewable energy programs. The first and only meeting of 2015 was held in September and consisted of introductions and background discussion.

EKPC and its owner-members also partner with other organizations to expand DSM efforts, including Mountain Association for Community Economic Development (MACED). In 2015, six of EKPC's owner-member cooperatives continued to offer an on-bill, energy-efficiency financing program called "How\$martKY" available to members. MACED assists with home-energy evaluations and provides loan capital, while EKPC and its owner-member cooperatives provide quality rebates and program marketing materials. Work also continued with Kentucky's affordable housing builders, including Frontier Housing, Peoples' Self Help Housing, Partnership Housing, Southern Tier Housing and local Habitat for Humanities to further low-income energy efficiency efforts.

EKPC grew its relationship with the Midwest Energy Efficiency Alliance (MEEA) in 2015, by having an employee elected to the organization's Board of Directors. The Midwest Energy Efficiency Alliance is a collaborative network advancing energy efficiency in the Midwest for sustainable economic development and environmental stewardship. EKPC has been a member of MEEA for several years, and has hosted meetings where ideas and concepts were shared with other stakeholders.

"It's apparent that EKPC and its owner-member cooperatives are committed to energy efficiency efforts," said MEEA's Executive Director Stacey Paradis. "Their DSM programs are great for the state and for their members and they are always looking for more opportunities to benefit their members through saving energy and saving money."

As new and emerging technologies develop, EKPC and its owner-member cooperatives will continue to evaluate potential programs into the future.



Residential Lighting:

Providing more than 9 million CFLs & LEDs to members

Since 2003, EKPC and its owner-member cooperatives have provided more than one million compact fluorescent lights (CFL) and light-emitting diodes (LED) to members.

In 2015, cooperatives distributed more than 61,500 20-watt cool white CFLs that are expected to result in a lifetime savings of 10,337 MWh and 20,674,752 pounds of carbon dioxide emissions. This program provides CFLs at the annual meetings held by the distribution cooperatives each year. Each registered member in attendance receives a two-pack of CFLs that replace two incandescent light bulbs, targeting all residential end-consumers.

In 2015, cooperatives provided more than 5,900 LEDs to its members. Each member who participated in a free, online energy audit called *BillingInsights™* received an LED. These LEDs that are expected to result in a lifetime savings of 1,134MWh and 2,267,904 pounds of carbon dioxide emissions.



HVAC Duct Sealing:

Addressing the big usage issues

Since the 1990s, EKPC and its owner-member cooperatives have offered this program to reduce the energy loss through a home's HVAC duct system. This program provides incentives to members who seal ductwork through traditional mastic sealers. Duct loss measurement requires the use of a blower door test (before and after the duct sealing work is performed). Duct leakage per system must be reduced to below 10 percent of the fan's rated capacity. All joints in the duct system must be sealed with foil tape and mastic. This program is targeted to single-family homes using electric furnaces or electric heat pumps. All participating homes must have duct systems that are at least two years old to qualify for the incentive. The program is offered only to homes that have centrally-ducted heating systems in unconditioned areas.

In 2015, 266 HVAC Duct Sealing rebates were provided to members, resulting in a lifetime savings of 3,313 MWh and 6,626,592 pounds of carbon dioxide emissions. From 2014 to 2015, participation increased by 7 percent.



Button-Up Weatherization:

Improving homes' energy efficiency

Since the early 1990s, EKPC and its owner-member cooperatives have offered this program to improve a home's energy efficiency, comfort, and reduce energy use. This program offers incentives to members who add insulation materials or use other weatherization techniques to reduce heat loss in the home. Any member who resides in a site-built or manufactured home that is at least two years old and uses electricity as their primary source of heat is eligible.

This program offers a whole-house approach with multiple levels.

Button-Up Weatherization with Air Sealing:

This version of the Button-Up encourages members to air seal the envelope of their home in addition to the regular Button-Up improvements. A blower door test is required to demonstrate the impact in kW demand reduction, and an added incentive is paid based on that reduction.

Advanced Weatherization Level 2:

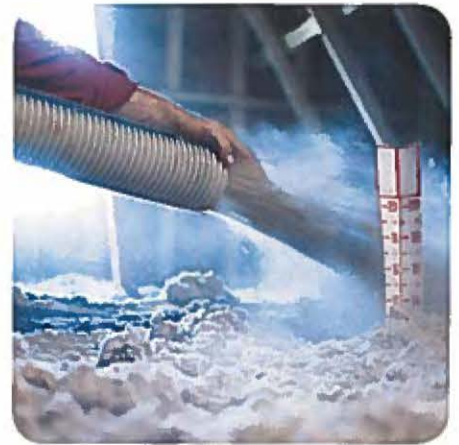
Level 2 encourages homeowners to address all of their home's inefficiencies at one time. The resulting BTU_h savings can be as much as 150 percent of Button-Up Level 1. Achieving this level of savings results in a greater incentive.

Advanced Weatherization Level 3:

This version represents the highest level. Level 3 also encourages homeowners to address all of their home's inefficiencies at one time. The resulting BTU_h savings can be as much as 200 percent of Button-Up Level 1. Achieving this level of savings results in an even greater incentive.

Levels 2 and 3 of this program are targeted to members who currently heat their home with electricity, particularly homes with unfinished basements, homes that have partition walls separating a crawl space or garage, and Cape Cod style homes (1.5 stories).

In 2015, 1,101 Button-Up rebates were provided to members, resulting in a lifetime savings of 25,682 MWh and 51,362,463 pounds of carbon dioxide emissions. From 2014 to 2015, participation increased by 37 percent.



Touchstone Energy Home:

Building the home of your dreams

Since 2003, EKPC and its owner-member cooperatives have offered this program to increase energy efficiency in new-home construction. This program is designed to encourage new homes to be built to higher standards for thermal integrity and equipment efficiency, as well as to choose a geothermal or an air-source heat pump, rather than less efficient forms of heating and cooling. Homes built to Touchstone Energy Home standards typically use 30 percent less energy than the same home built to typical construction standards. Plans are submitted before the home is built, a pre-drywall inspection is made, and a blower door test is administered after the home is built to verify that the home meets the standard.

This program is targeted towards the residential new construction market and members who are constructing new site-built homes.

In 2015, 435 Touchstone Energy Home rebates were provided to members, resulting in a lifetime savings of 22,342 MWh and 44,683,200 pounds of carbon dioxide emissions. From 2014 to 2015, participation increased by 26 percent.

EKPC's owner-members have also used this program to partner with Kentucky's affordable housing builders. Relationships with these organizations have led to improved efficiency in affordable housing and lower monthly energy costs for recipients of these homes.



CARES

Community Assistance Resources for Energy Savings

The Community Assistance Resources for Energy Savings (CARES) program began in early 2015, and provides an incentive to enhance the weatherization and energy efficiency services provided to the end-use members by the Kentucky Community Action Agencies (CAA) network. EKPC and its owner-members provide an incentive to the CAA implementing the project on behalf of the end-use member.

This program is available to end-use members who qualify for weatherization and energy-efficiency services through their local CAA in all service territories of participating cooperatives. The maximum incentive possible per household is \$2,000, which can be reached by using any combination of the following improvements not to exceed their individual maximums through heat pump upgrade and/or weatherization improvements.

In 2015, one CARES incentive was provided, resulting in a lifetime savings of 71 MWh and 141,930 pounds of carbon dioxide emissions.



Heat Pump Retrofit:

Replacing resistance heat sources

For decades, EKPC and its owner-member cooperatives have offered this program to lower the cost of heating homes and increase comfort. This program provides incentives for members to replace their existing resistance heat source with a high-efficiency heat pump through three levels of rebates.

Level 1 offers a rebate for a 13 SEER/7.5 HSPF heat pump. Level 2 offers a rebate for a 14 SEER/8.0 HSPF heat pump. Level 3 offers a rebate for a 15 SEER/8.5 HSPF or higher heat pump. The existing heating system must be two years or older to qualify for incentives unless the heat pump is being installed in a new manufactured home. New manufactured homeowners who install a heat pump qualify based on the levels above.

The program is targeted to members who currently use a resistance heat source. Incentives are offered when the homeowner's primary source of heat is an electric resistance furnace, ceiling cable heat, or baseboard heat in both site-built and manufactured homes.

In 2015, 823 Heat Pump Retrofit rebates were provided to members, resulting in a lifetime savings of 124,561 MWh and 249,121,720 pounds of carbon dioxide emissions. From 2014 to 2015, participation increased by 43 percent.



Direct Load Control:

Making saving simple

Since 2008, EKPC and its owner-member cooperatives have offered this program to manage peak usage. This program offers incentives to members who enroll central air-conditioners and electric water heaters. Switches are installed and, during periods of high demand, the utility briefly cycles the appliance off in order to reduce system peaks and save on costs for peak power. Although EKPC's system typically peaks in winter, member's heating appliances are not interrupted to lower peak. Member comfort and safety are top priority.

This program is targeted to any member with central air-conditioning, heat pump or electric tank water heaters, 40 gallons or greater.

In 2015, 3,649 switches were installed, resulting in a reduction of 2.8 MW during the summer months and 0.701 MW in the winter.



Appliance Recycling

You call, we haul

The Appliance Recycling program began in 2014 in an effort to encourage members to recycle old, inefficient refrigerators and freezers. Members receive a \$50 incentive for recycling refrigerators and/or freezers that meet qualifying conditions. The appliances must be in working condition, plugged in and running at scheduled pick-up, between 7.75 and 30 cubic feet, and empty and defrosted with water lines disconnected.

EKPC and its owner-member cooperatives partner with Appliance Recycling Centers of America, Inc. (ARCA) for proper recycling procedures that meet all federal and state requirements.

This program is available to all end-use members who qualify.

In 2015, 1,144 incentives were provided to members, resulting in a lifetime savings of 5,574 MWh and 11,147,136 pounds of carbon dioxide emissions.



ENERGY STAR Appliance Rebate:

Get paid to upgrade

The ENERGY STAR Appliance Rebate program began in 2014 in an effort to encourage members to purchase new, energy-efficient appliances. EKPC and its owner-member cooperatives provides the incentives to members who purchase and install the ENERGY STAR certified appliances listed in the table.

This program is available to all end-use members who qualify.

In 2015, 5,936 rebates were provided to members, resulting in a lifetime savings of 22,664 MWh and 45,329,514 pounds of carbon dioxide emissions.

ENERGY STAR Appliances	Rebate
Refrigerator	\$100
Freezer	\$50
Dishwasher	\$50
Clothes Washer	\$75
Heat Pump Water Heater	\$300
Heat Pump	\$300
Central Air Conditioning	\$300

ENERGY STAR Manufactured Home:

Get paid to upgrade

The ENERGY STAR Manufactured Home program began in 2014. An upstream program, EKPC works directly with the manufacturer to automatically upgrade the home to ENERGY STAR certified standards. EKPC utilizes a third-party administrator, Systems Building Research Alliance (SBRA), to verify information and ensure quality control.

Once the installation address is verified to be on a participating cooperative's service lines, the member will automatically receive the upgrade. An ENERGY STAR certified manufactured home is a home that has been designed, produced and installed by the home manufacturer to meet ENERGY STAR requirements for energy efficiency. These manufactured homes feature efficient heating and cooling equipment, high-efficiency water heaters, properly installed insulation, high-performance windows, tight construction and sealed ducts.

This program is available to all end-use members who qualify.

In 2015, two rebates were provided to members, resulting in a lifetime savings of 358 MWh and 716,820 pounds of carbon dioxide emissions.



Commercial Programs:

Commercial & Industrial Advanced Lighting

For several years, EKPC and its owner-member cooperatives have offered this program to improve lighting in commercial or industrial facilities. This program offers incentives to install high-efficiency lamps and ballasts, including, but not limited to, LED exit signs, T-5 fluorescent fixtures and advanced controls.

This program is targeted to any existing commercial or industrial facility in the service territory of a distribution cooperative. The facility and its lighting must have been in service for at least two years.

In 2015, 130 C&I Advanced Lighting rebates were provided to members, resulting in a lifetime savings of 91,108 MWh and 182,216,880 pounds of carbon dioxide emissions.



Industrial Compressed-Air

For several years, EKPC and its owner-member cooperatives have offered this program to refund the cost of a leak-detection audit. This program is designed to reduce electricity consumption through detecting and repairing compressed-air leaks. Compressed-air production and distribution represents one of the primary electricity costs in many industrial plants. Both the supply side (compressors and conditioning equipment) and the demand side (distribution and end use) can be targeted to significantly improve energy efficiency.

This program is targeted to any existing commercial or industrial facility that uses electricity compressed air applications.

In 2015, one compressed air rebate was provided, resulting in a lifetime savings of 3,870 MWh and 7,739,444 pounds of carbon dioxide emissions.



Energy Education:

Getting the message out

In 2015, campaigns for the newest DSM programs were featured in all of EKPC and its owner-member cooperatives' mediums including direct mail, bill inserts, newspapers, television, billboards, radio, magazines, digital, brochures, social media and through personal interaction. An emphasis on digital (online) advertising began in 2015. The ability to track and measure digital advertising in a precise manner makes it an attractive and efficient venue.

New campaigns to promote each of the DSM programs were introduced in 2015, adding to the large increase of participation in 2015.

Non-traditional forms of advertising were used in two of the newest programs. Various items, such as yard signs and retail lot flags, were provided to increase education on the ENERGY STAR Manufactured Home program. Appliance adhesives and single-panel brochures were provided to retail stores to promote the ENERGY STAR Appliance Rebate program.

One good idea!

With one simple call or click you can save energy, help the environment and even bill credits. The SimpleSaver program can annually credit your electric bill up to \$30 or more.

Join today and you may be eligible for an additional \$20 sign-on bonus.

One call. One click. One good idea!

SimpleSaver
1-800-305-5493
www.simplesaver.com

Kentucky Touchstone Energy Cooperatives

Get Paid to Upgrade.

ENERGY STAR REBATE PROGRAM

Model #	Rebate Amount
EnergyStar	200
Refrigerator	200
Freezer	100
Refrigerator	100
EnergyStar	175
Refrigerator	150
Freezer	150
Refrigerator	150
Freezer	150
Refrigerator	150

Planning to purchase a new, energy-efficient product for your home? Our rebate programs help you save each day.

Our ENERGY STAR Rebate Program offers rebates from 100 to \$200 for qualifying ENERGY STAR-rated appliances to help offset the cost of a top-efficiency product.

Still eyeing that energy-saving appliance to buy? Don't miss out!

www.touchstoneenergy.com

Kentucky Touchstone Energy Cooperatives

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Follow these Simple Steps and Start Saving!

- Visit www.skrec.com
- Click on Savingslight!
- Complete the home's code
- Look for your Free Philips SmartLED bulb in an email

SK South Kentucky RECC

BillingInsights

YOU CALL. WE HAUL.

Receive \$50 for replacing your old refrigerator or freezer. We'll pick up the old one, free of charge and deliver the new one. Please have your account number ready when you call to do your part.

www.touchstoneenergy.com

1-844-HAUL4ME

COMFORT AND SAVINGS

An energy-efficient heat pump can do it all.

A new system helps to deliver heating and central cooling with added efficiency, performance and savings when compared to older HVAC systems. And when you upgrade your system, you may be eligible for a rebate from your local electric cooperative through our Heat Pump Rebate program as an ENERGY STAR Appliance rebate.

Kentucky Touchstone Energy Cooperatives

Impact Measures:

System summary of 2015 DSM program savings

DSM program totals for installed measures in 2015

All programs	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Lifetime energy savings (MWh)	Cost of demand saved (\$/kW)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
All DSM Programs	84,503	24,834	6.796	5.468	\$9,514,844 *	320,263	\$881	\$0.022	640,525,545

Appliance Recycling

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
Appliance Recycling	1,144	796	0.114	0.080	\$272,432	7	5,574	\$0.049	11,147,136

Button-Up Weatherization

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
Button-Up level 1	1,099	1,639	0.386	1.268	\$696,270	15	24,589	\$0.028	49,178,079
Button-Up level 2	1	9	0.002	0.007	\$2,085	15	142	\$0.015	283,323
Button-Up level 3	1	63	0.015	0.049	\$2,625	15	951	\$0.003	1,901,061

CARES

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
CARES	1	5	0.001	0.001	\$1,700	15	71	\$0.024	141,930

* Includes \$1,325,639 program administration and promotional expenses.

Commercial and Industrial

C&I programs	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
Commercial Lighting	130	9,111	1.822	0.984	\$823,529	10	91,108	\$0.009	182,216,880
Compressed Air	1	553	0.109	0.044	\$15,000	7	3,870	\$0.004	7,739,444
Total	131	9,664	1.931	1.028	\$838,592		94,978	\$0.009	189,956,324

Direct Load Control

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Cost of Demand saved (\$/KW)
DLC Air Conditioner	2,301	12	2.301	0.000	\$1,553,986	\$675
DLC Water Heater	1,348	13	0.499	0.701	\$912,658	\$1,830
DLC total	3,649	25	2.800	0.701	\$2,466,644	\$881

Energy Audits

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
In-home	22	14	0.003	0.004	\$818	8	114	\$0.007	228,800
Online	3,555	1,827	0.391	0.569	\$132,175	5	9,134	\$0.014	18,268,390

ENERGY STAR® Appliance Rebate

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
ES Appliance Rebate	5,936	1,713	0.390	0.179	\$1,221,100	10-15	22,665	\$0.0538	45,329,514

ENERGY STAR® Manufactured Home

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
ES Manufactured Home	2	24	0.001	0.006	\$8,600	15	358	\$0.024	716,820

Heat Pump Retrofit

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
Heat Pump 13 SEER	295	2,116	0.044	0.000	\$491,175	20	42,327	\$0.012	84,653,200
Heat Pump 14 SEER	216	1,626	0.068	0.000	\$420,120	20	32,514	\$0.013	65,027,680
Heat Pump 15 SEER or higher	312	2,486	0.139	0.000	\$699,192	20	49,720	\$0.014	99,440,840

HVAC Duct Seal

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
HVAC Duct Sealing	266	276	0.080	0.258	\$133,000	12	3,313	\$0.040	6,626,592

Residential Lighting

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
CFLs & LEDs	67,438	1,434	0.143	0.239	\$143,741	8	11,471	\$0.012	22,942,656

Touchstone Energy Home

Residential program	Participation	Annual Energy Savings (MWh)	Summer Demand Savings (MW)	Winter Demand Savings (MW)	2015 program costs	Measure life (years)	Lifetime energy savings (MWh)	Cost of energy saved (\$/kWh)	Lifetime CO2 savings (lbs)
TSE Home Prescriptive	108	277	0.071	0.268	\$151,200	20	5,547	\$0.027	11,093,760
TSE Home HERS 79 or better	327	840	0.216	0.811	\$457,800	20	16,795	\$0.027	33,589,440
TSE Home HERS 80-85	0	0	0	0	\$0	20	0	\$0	0

2015 Basic Program Assumptions

Measure: Button-Up Level 1

Annual kWh Saved:	2,205
Winter Demand Savings:	1.71
Summer Demand Savings:	0.52
Lifetime of Savings:	15 years
Installation Rate:	100%
TRC: ³	1.45

Measure: Button-Up Level 2

Annual kWh Saved:	4,567
Winter Demand Savings:	3.53
Summer Demand Savings:	1.07
Lifetime of Savings:	15 years
<i>(Weighted mix of measures)</i>	
Installation Rate:	100%
TRC:	1.52

Measure: Button-Up Level 3

Annual kWh Saved:	6,090
Winter Demand Savings:	4.71
Summer Demand Savings:	1.43
Lifetime of Savings:	15 years
<i>(Weighted mix of measures)</i>	
Installation Rate:	100%
TRC:	1.56

Measure: Button-Up w/Air Seal

Annual kWh Saved:	3,045
Winter Demand Savings:	2.35
Summer Demand Savings:	0.720
Lifetime of Savings:	15 years
Installation Rate:	100%
TRC:	1.44

Measure: HVAC Maintenance Program

For a typical heat pump in typical residence to same home reduced by 12% savings

Annual kWh Saved:	1,354
Winter Demand Savings:	1.07
Summer Demand Savings:	0.40
Lifetime of Savings:	12 years
Installation Rate:	100%
TRC:	1.15

Measure: Heat Pump SEER 13

From Electric Furnace and Central Air to ENERGY STAR SEER 13, HSPF 7.5

Annual kWh Saved:	7,174
Winter Demand Savings:	0
Summer Demand Savings:	0.15
Lifetime of Savings:	20 years
Installation Rate:	100%
TRC:	1.52

Measure: Heat Pump SEER 14

From Electric Furnace and Central Air to ENERGY STAR SEER 14, HSPF 8.0

Annual kWh Saved:	7,533
Winter Demand Savings:	0
Summer Demand Savings:	0.32
Lifetime of Savings:	20 years
Installation Rate:	100%
TRC:	1.32

Measure: Heat Pump SEER 15

From Electric Furnace and Central Air to ENERGY STAR SEER 15, HSPF 8.5

Annual kWh Saved:	7,978
Winter Demand Savings:	0
Summer Demand Savings:	0.45
Lifetime of Savings:	20 years
Installation Rate:	100%
TRC:	1.08

Measure: Touchstone Energy Home

Prescriptive and Performance Level #2 – Encourages new homes to be built to a standard of at least SEER 14.5, HSPF 8.2; HERS Rating of 79 and below

Annual kWh Saved:	2,568
Winter Demand Savings:	2.48
Summer Demand Savings:	0.66
Lifetime of Savings:	20 years
Installation Rate:	100%
TRC:	1.98

Measure: Touchstone Energy Home

Performance Level #1 – Encourages new homes to be built to a standard of at least SEER 14.5, HSPF 8.2; HERS rating of 80-85

Annual kWh Saved:	1,758
Winter Demand Savings:	1.7
Summer Demand Savings:	0.45
Lifetime of Savings:	20 years
Installation Rate:	100%
TRC:	2.06

Measure: CFLs²

Annual kWh Saved:	21
Winter Demand Savings:	0.0035
Summer Demand Savings:	0.0021
Lifetime of Savings:	8 years
Installation Rate:	70%
TRC:	2.62

Measure: LEDs

Annual kWh Saved:	24
Winter Demand Savings:	0.0040
Summer Demand Savings:	0.0024
Lifetime of Savings:	8 years
Installation Rate:	80%
TRC:	2.13

Measure: Commercial Advanced Lighting

Unit is 1 kW connected load savings

Annual kWh Saved:	4,252
Winter Demand Savings:	0.45
Summer Demand Savings:	0.85
Lifetime of Savings:	10 years
Installation Rate:	100%
TRC:	2.22

Measure: Industrial Compressed Air

Annual kWh Saved:	3,800
Winter Demand Savings:	0.30
Summer Demand Savings:	0.75
Lifetime of Savings:	7 years
Installation Rate:	0
TRC:	1.62

Measure: Water Heater >40 gals

Annual kWh Saved:	10
Winter Demand Savings:	0.52
Summer Demand Savings:	0.37
Lifetime of Savings:	20 years
Installation Rate:	100%

Measure: Central Air Conditioning

Annual kWh Saved:	5
Winter Demand Savings:	0.0
Summer Demand Savings:	1.0
Lifetime of Savings:	20 years
Installation Rate:	100%

TRC for Load Control Program 2.68

¹ Savings numbers are "ex ante" or as planned gross savings except where noted

² Reported savings for CFLs are adjusted by the install rate of 70%

³ Total Resource Cost (TRC) is an overall program benefits/costs analysts ratio.

Measure: ENERGY STAR® Appliances

TRC: 1.49 in aggregate

Measure: ENERGY STAR® Heat Pump

Annual kWh Saved: 804
Winter Demand Savings: 0.00
Summer Demand Savings: 0.30
Lifetime of Savings: 20 years
Installation Rate: 100%

Measure: ENERGY STAR® Central Air

Annual kWh Saved: 529
Winter Demand Savings: 0.00
Summer Demand Savings: 0.52
Lifetime of Savings: 15 years
Installation Rate: 100%

Measure: ENERGY STAR® Clothes Washer

Annual kWh Saved: 350
Winter Demand Savings: 0.07
Summer Demand Savings: 0.03
Lifetime of Savings: 12 years
Installation Rate: 100%

Measure: ENERGY STAR® Dish Washer

Annual kWh Saved: 79
Winter Demand Savings: 0.01
Summer Demand Savings: 0.01
Lifetime of Savings: 10 years
Installation Rate: 100%

Measure: ENERGY STAR® Freezer

Annual kWh Saved: 67
Winter Demand Savings: 0.01
Summer Demand Savings: 0.01
Lifetime of Savings: 12 years
Installation Rate: 100%

Measure: ENERGY STAR® Refrigerator

Annual kWh Saved: 100
Winter Demand Savings: 0.01
Summer Demand Savings: 0.01
Lifetime of Savings: 12 years
Installation Rate: 100%

Measure: ENERGY STAR® Heat Pump Water Heater

Annual kWh Saved: 2,200
Winter Demand Savings: 0.51
Summer Demand Savings: 0.20
Lifetime of Savings: 13 years
Installation Rate: 100%

Measure: Appliance Recycling

Annual kWh Saved: 696
Winter Demand Savings: 0.07
Summer Demand Savings: 0.10
Lifetime of Savings: 7 years
Installation Rate: 100%
TRC: 2.01

Measure: CARES

Annual kWh Saved: 4,731
Winter Demand Savings: 1.44
Summer Demand Savings: 0.72
Lifetime of Savings: 15 years
Installation Rate: 100%
TRC: 1.34

Measure: ENERGY STAR® Manufactured Home

Annual kWh Saved: 11,947
Winter Demand Savings: 2.88
Summer Demand Savings: 0.51
Lifetime of Savings: 15 years
Installation Rate: 100%
TRC: 4.09



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