

Summary of Missouri Energy Utility Energy Efficiency and Renewable Energy Services

The Missouri Energy Center, the state's energy office operating within the Missouri Department of Natural Resources' Outreach and Assistance Center, conducted an energy efficiency and renewable energy program survey of all Missouri electric, natural gas and steam utilities.

The survey was distributed on December 21, 2001 and requested the companies' response by January 31, 2002; however, information was received through August 2002 through follow-up contacts. This survey summary reports responses received from the companies. The Energy Center did not review program implementation information such as funding or participation.

Of those utilities responding to the statewide survey, the Energy Center identified utility-based energy efficiency, alternative and renewable energy programs and services offered by each company to their residential, commercial and industrial customers or proposed to be offered in the near future.

Table 1. Survey Summary

| Utility Type | Surveys Mailed | Responses | Percent | Energy Efficiency Programs | Percent | Alternative/ Renewable Energy Programs | Percent |
|---|----------------|-----------|------------|----------------------------|------------|--|-----------|
| Investor-owned electric and natural gas * | 16 | 7 | 44% | 7 | 44% | 2 | 13% |
| Municipal electric and natural gas * | 108 | 29 | 27% | 5 | 5% | 5 | 5% |
| Rural electric cooperatives** | 47 | 19 | 40% | 40 | 85% | 0 | 0% |
| Other -- | | | | | | | |
| Investor-owned steam | 3 | 0 | 0% | 0 | 0% | 0 | 0% |
| University of MO-Columbia | 1 | 1 | 100% | 1 | 100% | 0 | 0% |
| TOTAL | 175 | 56 | 32% | 53 | 30% | 7 | 4% |

*As of January 2002

**As of August 2002

Energy Efficiency

Of the 175 energy utilities surveyed (16 regulated investor-owned electric and natural gas utilities, 108 municipal utilities, 47 rural electric cooperatives, 3 regulated investor-owned steam and the University of Missouri-Columbia power plant) 53 or 30% responded that they offered an energy efficiency program or service to their customers. Details regarding energy efficiency, renewable energy and alternative energy programs and services are presented in Appendix I.

Investor-Owned Electric and Natural Gas Utilities

Seven (7) of 16 investor-owned electric and/or natural gas utilities offer energy efficiency program services:

AmerenUE – Ameren Energy Marketing, an affiliate of AmerenUE, and AmerenUE offers residential, commercial and industrial energy efficiency products or services to their customers in Missouri including low-income residential weatherization assistance services and energy management services to their commercial and industrial clients.

Missouri Public Service – Offers energy audit services to its residential, commercial and industrial customers and provides resource assistance to support low-income residential weatherization assistance services.

St. Joseph Power & Light Company – Promotes low-income weatherization assistance services in their service territory by providing financial assistance to the local chapter of United Way and resource contributions to Community Services, Inc., the area's low-income energy assistance program.

The Empire District Electric Company – Empire provides energy audit services to its residential, commercial and industrial customers upon request.

Great Plains Energy, Inc. (KCPL) – KCPL is a partner with Heartland for Energy Efficiency, a consortium of utilities in promoting energy efficiency services in western Missouri. The company also provides low-income weatherization assistance through local community action agencies and the City of Kansas City.

Laclede Gas Company – Offers a low-interest finance program to purchase and install insulation in homes and low-income weatherization assistance programs with the assistance of local community action agencies.

Missouri Gas Energy – MGE provides local support for low-income residential weatherization assistance and also joined with other area energy utilities to form the Heartland for Energy Efficiency (HUEE). HUEE will promote energy awareness and education initiatives for the residential market within the Greater Kansas City area. Other HUEE members include KCPL, Independence Power & Light, and Aquila (UtiliCorp). Together, the companies have donated approximately \$40,000 to support the program.

Rural Electric Cooperatives

Forty (40) of 47 rural electric cooperatives offer a variety of energy efficiency services. All 39 distribution cooperatives and 1 distribution/transmission cooperative offer energy efficiency customer service programs – automatic meter reading, residential energy audits, low-interest loan programs and financial rebates for the purchase and installation of ground-source heat pumps, air source heat pumps and high efficiency electric appliances. See Appendix 1 for additional information.

Municipal Electric and Natural Gas Utilities

Five (5) of 108 municipal electric and natural gas utilities offer services or information on energy efficiency:

Columbia Water and Light
Independence Water & Light

City Utilities of Springfield
Carrollton Municipal Utilities
City of Sikeston

These municipal utilities offer energy efficiency outreach and assistance services that include energy audits, lighting programs, load management programs, and energy education and awareness programs. See Appendix 1 for additional information.

Other

The University of Missouri – Columbia administers an internal energy conservation program for campus facilities that provides lighting audits and recommended upgrades and building energy audits that address heating and cooling improvements.

Renewable and Alternative Energy

The following summarizes utility responses to renewable and alternative energy programs and services. Of the 175 utilities surveyed, 6 or 3% offer or will offer a renewable or alternative energy program or service:

Marshall Municipal Utility – Electricity generated from pelletized paper.

Chillicothe Municipal Utility – Electricity generated from pelletized paper.

City of Lamar – Electricity generated from waste wood materials (Under consideration).

City of West Plains – Electricity generated from waste wood materials and wood gas (Under consideration).

City Utilities of Springfield – Electricity is available to its customers generated from wind generation systems located in Kansas.

Missouri Public Service Company and St. Joseph Light and Power, divisions of UtiliCorp, are offering Missouri customers wind-produced electricity from a facility jointly built with Westar Energy.

Appendix 1. Description of Energy Efficiency and Renewable/Alternative Energy Programs and Services by Individual Utility

The following presents brief summaries of the energy efficiency and renewable energy programs or services offered by those utilities responding to the utility survey:

Investor-Owned Electric and Natural Gas Utilities

AmerenUE (Electric and Natural Gas)

Low-income weatherization assistance project. In cooperation with local community action agencies, AmerenUE continues to offer weatherization assistance to low-income residential customers. Under a formal agreement with the Missouri Public Service Commission, the Office of Public Counsel and the Department of Natural Resources, the company provides funds of up to \$125,000 annually to support this energy efficiency program.

The company offers 5 programs for their commercial and industrial customers. Ameren's Abacus wireless metering information system tracks energy use by process, facility or equipment. This is an Internet-based software system allowing customers to view data in table or graphical format. The service provides customers with access to their energy use information on a daily basis and can be used by customers as a tool to monitor and manage their energy use.

A Customer Energy Exchange Internet-based notification and response system is offered for voluntary load curtailment. Customers are offered a financial incentive (\$/kWh) to reduce their energy load below established baseline levels. The program assists AmerenUE in reducing its system peak in times of system constraints and allows customers to avoid unnecessary exposure to fluctuating market prices for power during peak energy demand periods.

AmerenUE offers Internet-based (12 month or hourly usage data) access to customer energy use information. Commercial and industrial customers may access historical usage data via ameren.com and may access their account information.

A Compressed Air Program is offered to the utility's industrial customers as a referral service to a local provider of compressed air energy audits. This service provides industrial customers with a reliable source of energy efficiency assistance with compressed air use (improved efficiency for air compression motors).

AmerenUE distributes upon customer request copies of the US Department of Energy's Motor Master Plus software as part of the US DOE OIT Allied Partner Program. This service provides a tool to commercial and industrial customers that will help them make educated decisions on the procurement of energy efficient motors.

Missouri Public Service Company (Electric and Natural Gas)

Missouri Public Service Company (MPS), a division of UtiliCorp (now Aquila) offers a "do-it-yourself" mail-in residential audit. The audit includes questions that focus on the age and construction of the home, appliances used, occupancy patterns, and lifestyle variables. MPS combines the survey results with the customer's billing data to generate an audit report that is sent back to the residential customers. The report includes an estimate of energy usage by appliance and end-use, and a list and description of energy efficiency measures to be considered by the customer for possible installation and operation. Since inception of the program in April 1999, MPS has received over 9,000 audit requests.

MPS offers a walk-through "Class B" energy audit for its small commercial and industrial customers. The audits focus on customer energy consumption and operations and provide recommendations for efficiency improvements. The audit is performed by utility-qualified energy auditors designated by MPS and based on customer profile, may include the use of industry experts for selected types of facilities and process operations.

MPS offers a comprehensive "Class A" energy audit to its large commercial and industrial customers. The audits focus on customer energy consumption and operations and provide recommendations for efficiency improvements. Assessments are conducted by utility qualified energy auditors and may include the use of industry experts for selected types of facility and process operations. Energy systems examined by the audit include chillers, refrigeration compressors and other types of equipment.

MPS offers a low-income weatherization assistance program developed by the utility in order to provide non-profit agencies in their service territory funding for improvements made to low-income residential units. These utility funds are intended to supplement existing federal weatherization assistance funds used by these agencies.

MPS is working with Habitat for Humanity organizations in their service territory to provide incentives for energy efficient measures in Habitat homes. The utility also supports the Mid-America Assistance Coalition in offering a voluntary program for customers to provide emergency energy assistance to low income individuals. The program is called "Energy Aid" and is promoted under the company's "EnergyOneCares" theme. Energy Aid pays for utility bills or emergency repairs to vital heating equipment.

MPS is an active member of the US Department of Energy's Energy Star Program that promotes the purchase and use of high energy-efficiency consumer products such as computers, refrigerators and heating and cooling systems.

MPS has also joined with other area energy utilities to form the Heartland for Energy Efficiency (HUEE). HUEE will promote energy awareness and education initiatives for the residential market within the Greater Kansas City area. Other HUEE members include KCPL, Independence Power & Light, and Missouri Gas Energy. Together, the companies have donated approximately \$40,000 to support the program.

MPS is a member of the Midwest Energy Efficiency Alliance (MEEA) and is currently promotes the Change A Light program, providing greater lighting efficiency standards in the Kansas City area.

Missouri Public Service Company in a joint venture with Westar has constructed two 750 kW variable-speed wind turbines designed and built by Zond Development Corporation at Westar's Jeffery Energy Center located near St. Marys, Kansas and produces approximately 2.9 million kilowatt hours of electricity annually.

This is enough electricity to meet the annual power needs of more than 300 households. Each turbine is mounted on tubular towers that stand more than 170 feet high.

A portion of the power is sold to Missouri electricity customers in the Kansas City area as well as Springfield through its municipal utility system, City Utilities.

MPS's parent company, UtiliCorp United Inc., received the 2001 Missouri Governor's Environmental Excellence and Pollution Prevention Award for providing alternatively generated electric power to their customers in Missouri.

On December 17, 2001, UtiliCorp United and Florida Power and Light (FPL) Energy officials dedicated the largest wind farm ever constructed in Kansas. The FPL Energy Gray County Wind Farm near Montezuma is owned and operated by FPL Energy.

Construction of the 170 turbines at the wind farm, each about 295 feet high to the tip of the rotor, began in June and was completed ahead of schedule in late November 2001. The facility is capable of generating 110 megawatts of electricity, enough to power 33,000 homes. UtiliCorp purchases all the power produced at the wind farm.

All of the electricity from the wind farm serves UtiliCorp's WestPlains Energy customers in Kansas as well as its Missouri Public Service and St. Joseph Light & Power customers in Missouri.

St. Joseph Light & Power Company (SJLP) (Electric and Natural Gas)

St. Joseph Light & Power, a division of UtiliCorp United, is involved in two low-income residential energy assistance programs. Through the SJLP Energy Assistance Program, utility customers may contribute funds to support this project. All proceeds are provided to the United Way and distributed to area agencies to help people pay their utility bills. SJLP also works with Community Services, Inc., the local federal weatherization assistance agency. SJLP provides energy saving devices and educational tapes from product manufacturers to those participating in the program.

Laclede Gas Company (Natural Gas)

The company will soon offer a low-income weatherization assistance program in coordination with local community action agencies.

Laclede offers a program designed to provide low-interest loans to qualified residential customers to finance the purchase and installation of insulation. The program offers payment terms of up to seven and one-half years. A portion of the program is funded through rate-base. Initiated in 1981, the company has issued over 9,000 loans.

Energy Wise Dealer Program -- This program provides financing through authorized HVAC contractors for the purchase and installation of energy-efficient natural gas heating and gas or electric cooling equipment and other natural gas appliances. A portion of the program cost is rate-based. Since May 1997, the program has issued about 2,500 loans.

Missouri Gas Energy (Natural Gas)

MGE offers a low-income residential assistance program and provides \$340,000 annually to local community action agencies to administer the program. Partners include the City of Kansas City, Community Services, Inc., Economic Security Corporation, Missouri Valley Human Resources, and Ozark Area Community Action Corporation.

MGE has also joined with other area energy utilities to form the Heartland for Energy Efficiency (HUEE). HUEE will promote energy awareness and education initiatives for the residential market within the Greater Kansas City area. Other HUEE members include KCPL, Independence Power & Light, and Missouri Public Service. Together, the companies have donated approximately \$40,000 to support the program.

Kansas City Power & Light Company (Great Plains Energy) (Electric)

KCPL has joined with other area energy utilities to form the Heartland for Energy Efficiency (HUEE). HUEE will promote energy awareness and education initiatives for the residential market within the Greater Kansas City area. Other HUEE members include Independence Power & Light, MGE, and UtiliCorp. Together, the companies have donated approximately \$40,000 to support the program.

The Empire District Electric Company (Electric)

Upon request, Empire provides a walk through energy audit service for their residential, commercial and industrial customers to identify opportunities to improve energy use.

Municipal Utilities

Carrollton Municipal Utilities (Electric)

Administers an outreach and education program for 5th and 6th grade students regarding energy conservation tips and safety topics through videotapes and hard-copy handouts.

Chillicothe Municipal Utilities (Electric)

The utility is reducing its use of fossil fuel by using pelletized paper processed at a local sheltered workshop to fuel its electric generation system. The system provides a relatively inexpensive fuel source and reduces the amount of waste to the local landfill, as dedicated municipal waste is recycled at the utility's electric generation facility.

Columbia Water and Light (Electric)

Columbia Water and Light offers several energy efficiency and renewable energy services to its customers. Among those services include a Junior High School Calendar contest held annually to encourage students to design artwork promoting energy efficiency and renewable energy. Calendars are provided to Water and Light customers.

Columbia also installs and operates direct load control devices on central air conditioners to reduce summer peaking demands.

A commercial and industrial load shedding program provides reduced rates to commercial/industrial customers to voluntarily reduce electric demands during summer peak periods.

Customers under the Large General service agreement or industrial service rate that have at least 500 kW of load that can be interrupted by Columbia Water and Light are eligible for the Interruptible Service Rate. Customers on this rate have a contracted firm demand charge.

The Water and Light department manages the City of Columbia's Government access channel. The utility hosts a segment every two weeks covering a variety of energy-related topics including outside water conservation tips to attic insulation requirements:

Energy audits are available to residential, commercial and industrial customers. A variety of systems are used depending upon the customer type.

Columbia is a participating member of the American Public Power Association's Tree Power program. The program encourages the use of shade trees to help cool buildings during summer months, reducing air conditioning demand.

A low-interest loan program is available to all electric customers, for energy efficient improvements such as insulation, HVAC upgrades and heat pumps.

Distributed Generation is currently under consideration by Columbia. DG provides customers with back-up power in the event of a power outage or other emergency and also provides the utility with peaking capacity as needed.

Columbia Water and Light hosts Saturday Science which allows three different groups of 8th grade science students to spend a Saturday morning learning how science applies to the world of electric utilities. Students spend 4 hours discovering how electricity is produced and distributed, how water is treated or how insulation affects home energy efficiency.

The Energy Challenge for Columbia Public Schools is a multi-faceted program that allows users to determine where and how well their energy is being used within their homes. The program is designed as a curriculum supplement for the 9th grade natural sciences program in the schools. It consists of a computerized energy audit, and

classroom presenters that talk about ways in which they can remedy some of the energy problems in their homes.

Columbia offers a free infrared thermography to its industrial rate customers four times each year or as required. This service covers all demand-side electric infrastructures – power distribution, load centers, motor control centers, control cabinets, manufacturing equipment, boilers, air compressors, HVAC and research and development. A pilot program, Power Quality Assistance, will soon start offering recommendations to improve energy use to the utility's industrial customers. Both services are/or will be offered to residential and commercial customers.

Independence Water & Light (Electric)

Independence offers an on-site residential energy audit that examines energy usage and provides general recommendations to improve energy use.

The utility also offers information about energy conservation and renewable energy through pamphlets, newspaper and other forms of media.

A Key Accounts Program offers large commercial and industrial customers with services to increase the energy efficiency of their operations.

Energy conservation kits consisting of weatherization materials, compact fluorescent lamps and other energy saving items are provided at no charge to selected low-income residential customers.

A residential electric water heater, heat pump and air conditioner rebate program is offered by the utility to encourage the purchase and installation of high efficiency equipment.

City of Lamar (Electric)

Lamar is examining the potential for alternative electric generation through a cooperative project with O'Sullivan, a wood product manufacturer. The utility is considering building and operating a 5 to 10 MW combined-cycle generator using waste saw dust which is currently disposed at their local landfill.

Sikeston (Electric)

Sikeston is a member of the national Tree Power Program. This is a public power (municipal) project that promotes tree planting in their community as an energy conservation and environmental awareness effort.

City Utilities of Springfield (Electric and Natural Gas)

City Utilities offers its WindCurrent program to customers as an opportunity to invest in renewable energy through an agreement to purchase 100 kWh blocks of wind-generated electricity at \$5.00 each per month in addition to the monthly metered electric service. The wind energy is produced at Westar's Jeffrey Energy Center noted earlier. Since October 2000, City Utilities had 139 participants with a total of 251 blocks sold.

The Home Sense Energy Audit assists City Utilities' customers in reducing energy and water use and increasing comfort by pinpointing air leaks with a blower door test, conducting a complete house evaluation and providing a list of house specific cost-effective retrofit measures.

Other

University of Missouri – Columbia Campus Power Plant (Electric)

The University of Missouri – Columbia administers an internal energy conservation program for campus facilities that provides lighting audits and recommended upgrades and building energy audits that address heating and cooling improvements. The program focuses on measures that reduce energy consumption by 1% per year through efficiency improvements with a simple payback of five years or less.

Municipal utilities - Energy efficiency and renewable energy activities

| Municipal Utility | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|-------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
| Carrollton | | | | | X | | | | | | | | | | | |
| Chillicothe | X | | | | | | | | | | | | | | | |
| Columbia | | X | X | | X | | X | | X | X | | X | X | | | X |
| Independence | | | | X | X | | X | | | | X | | | X | X | |
| Lamar | | X | | | | | | | | | | | | | | |
| Sikeston | | | | | | | | | | | | | | | | X |
| Springfield | | | | | | X | X | X | | | | | | | | |

1. Alternative generation - biomass fuel used
2. Alternative or/distributed generation - studying potential
3. Commercial energy audit
4. Commercial customer assistance - other
5. Education and information programs
6. Green pricing offerings
7. Home energy audit
8. Home energy audit - blower door
9. Interruptible service rates - commercial
10. Load control - AC
11. Low-income assistance
12. Low interest loans
13. Peak load reduction - commercial/industrial
14. Rebates -- heat pump
15. Rebates -- other (water heater, AC, etc.)
16. Tree planting program

1. Automatic Meter Reading
2. Distributed Generation -- Fuel Cell Installed
3. Heat Pump -- Sizing
4. Heat Pump -- Dual Fuel
5. Heat Pump -- Installed
6. Home Energy Audit
7. Home Energy Audit -- Blower Door
8. Home Energy Audit -- Infrared Camera
9. Home Energy Rating
10. Insulation Installation
11. Low-Income Weatherization Assistance
12. Load Control -- Air Source Heat Pump
13. Load Control -- Air Conditioning
14. Load Control -- Ground Source Heat Pump
15. Load Control -- Water Heater
16. Low Interest Loans
17. Rebates -- Ground Source Heat Pump
18. Rebates- Air Source Heat Pump
19. Rebates -- Other (Water Heater, Dual Fuel, etc.)

Rural Electric Cooperatives

Energy Efficiency Service or Program

| Cooperative | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 |
|-------------------------------|---|---|---|---|---|---|---|---|---|----|----|----|----|----|----|----|----|----|----|
| Atchison-Holt | * | | | | | * | | | | | * | | | | | | * | * | * |
| Barry | | | | | | | | | | | | | | | | | | | |
| Barton County | | | | | | | | | | | | | | | | * | | | |
| Black River | * | | | * | | * | | | | | | * | | | * | * | * | * | * |
| Boone | * | | | * | | * | | | | | | | | | * | * | * | * | * |
| Callaway | | | * | | | * | | | | | | | | | | | | | * |
| Central Missouri | | | | | | * | | | | | | | | | | | | | * |
| Citizens Electric Corporation | * | | * | | | * | | * | | | | | | | | | * | * | * |
| Co-Mo | | | | | | * | | | | | | | | | | * | * | * | * |
| Consolidated | * | | | * | | * | | | | | | | | | | * | * | * | * |
| Crawford | * | | | * | | * | | | | | | | | | | * | * | * | * |
| Cuivre River | * | | | * | | * | | * | | | | | | | | * | * | * | * |
| Farmers' | * | | | * | | * | | | | | | | | | | * | * | * | * |
| Gascoage | | | | * | | * | | * | | | | * | | | | * | * | * | * |
| Grundy | * | | | * | | * | | | | | | | | | | * | * | * | * |
| Howard | | | | * | | * | | | | | | | | | | * | * | * | * |
| Howell-Oregon | | | | * | | * | | | * | | | | | | | * | * | * | * |
| Intercounty | | | | * | | * | | * | | | | * | | | | * | * | * | * |
| Laclede | | | | * | | * | | * | | | | | | | | * | * | * | * |
| Lewis County | | | | * | | * | | * | | | | | | | * | * | * | * | * |
| Macon | | | | * | | * | | * | | | | | | | * | * | * | * | * |
| Missouri | | | | * | | * | | * | | | | | | | * | * | * | * | * |
| New-Mac | * | | | * | | * | | * | | | | | | | * | * | * | * | * |
| North Central | * | | | * | | * | | * | | | | | | | * | * | * | * | * |
| Osage Valley | * | | | * | | * | | * | | | * | | * | * | * | * | * | * | * |
| Ozark | * | | | * | | * | | * | | | | | | | * | * | * | * | * |
| Ozark Border | | | | * | | * | | * | | | | | | | * | * | * | * | * |
| Pemiscot-Dunklin | | | | * | | * | | * | | | | | | | * | * | * | * | * |
| Platte-Clay | * | | | * | | * | | * | | | | | | | * | * | * | * | * |
| Ralls County | | | * | | | * | | * | | * | | | | | * | * | * | * | * |
| Sac Osage | | | | * | | * | | * | | | | | | | * | * | * | * | * |
| SEMO | | | | * | | * | | * | | | | | | | * | * | * | * | * |
| Se-Ma-No | | | | * | | * | | * | | | | | | | * | * | * | * | * |
| Southwest | | | * | | | * | | * | | | | | | | * | * | * | * | * |
| Three Rivers | * | | * | | | * | | * | | | | | | | * | * | * | * | * |
| Tri-County | | | | * | | * | | * | | | * | | * | * | * | * | * | * | * |
| United Electric | * | | | * | | * | | * | | | * | | * | * | * | * | * | * | * |
| Webster | | | | * | | * | | * | | | * | | * | * | * | * | * | * | * |
| West Central | | | | * | | * | | * | | | * | | * | * | * | * | * | * | * |
| White River Valley | * | | | * | | * | | * | | | * | | * | * | * | * | * | * | * |