



**CLEAResult**

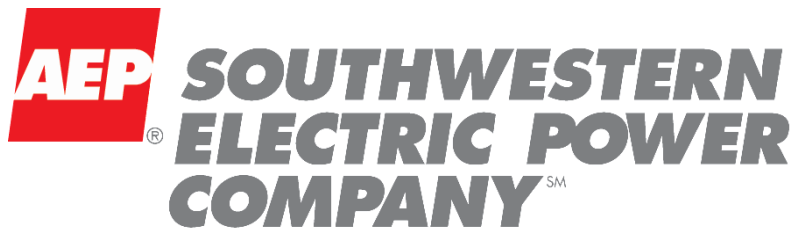
U of A – Applied Sustainability Center  
Summer Energy Academy 2014 (Municipalities)

We change the way people use energy

# Energy Efficiency Programs in Arkansas

## Implemented by CLEAResult

---



*A unit of American Electric Power*



# What is the difference between Energy Efficiency and Energy Conservation?

- **Energy efficiency** is using *less* energy to provide the *same* or *more* service.
  - Replacing *existing* light bulbs with *more energy efficient* ones is an example of Energy Efficiency.
- **Energy Conservation** is using *less* energy by *changing behavior*.
  - Turning off lightings, appliances, and electronics are examples of Energy Conservation.



# ▲ Energy Efficiency 101

---

- What is a kilowatt (kW)?
  - 1,000 watts (Power)
- What is a kilowatt hour (kWh)?
  - How many kW you use in an hour (Energy)
- Quiz:
  - A 100 watt light bulb is turned on for 3,000 hours in a year
  - How many kWh is used in that year?  
 $(100 \text{ watts} / 1,000) * 3,000 \text{ hours} = 300 \text{ kWh}$

## ▲ Energy Efficiency 101

---

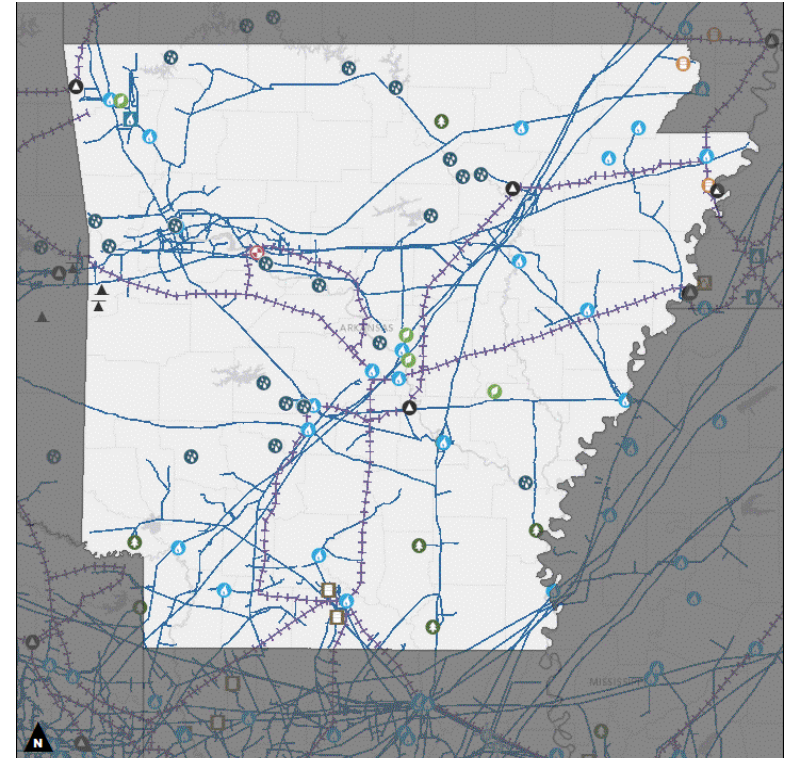
- How much would this cost on your bill?  
 $300 \text{ kWh} * .08/\text{kWh} = \$24/\text{year}$  (100 watt bulb)
- Replace it with a 23 watt CFL  
 $(23/1,000) * 3,000 = 69 \text{ kWh}$   
 $69 \text{ kWh} * .08/\text{kWh} = \$5.52/\text{year}$  (23 watt bulb)
- Savings  
 $\$24 - \$5.52 = \$18.48/\text{year}$  savings
- Simple payback w/o incentives  
Let's say a CFL costs \$4  
 $\$18.48/12 = \$1.54/\text{month}$   
 $\$4/1.54 = 2.5$  month simple payback!

# Why Energy Efficiency?

## Energy Consumption and Expenditures

- 2009 Consumption
  - AR Average 365 MMBTUs per person
  - U.S. Average 308 MMBTUs per person
  - U.S. Rank 17<sup>th</sup>
- 2009 Expenditures
  - AR Average \$3,655.33 per person
  - U.S. Average \$3,460.72 per person
  - U.S. Rank 24<sup>th</sup>
- AR consumes 18.5% more energy per capita than U.S. average
- AR spends 5.6% more in dollars per capita than U.S. average
- We are slightly inefficient

Data Sources: <http://energy.gov/public-services/energy-economy>  
<http://www.eia.gov/beta/state/?sid=ar>



Grey Base: Copyright ©2012 Esri, DeLorme, NAVTEQ

0 10 20 40 Miles eia

- |               |                      |  |
|---------------|----------------------|--|
| ■ Mask        | ⊕ Nuclear            | △ Petroleum Import Site                                      |
| ▲ Surface     | ● Other              | □ Petroleum Refinery   |
| ▼ Underground | ○ Other Fossil Gases | ⊠ Natural Gas Processing Facilities                          |
| ⬆ Biomass     | ○ Petroleum          | ⊠ Liquid Natural Gas Import/Export Terminals                 |
| ⊙ Coal        | ⊕ Pumped Storage     | ⊕ Natural Gas Transmission Hubs                              |
| ⊙ Geothermal  | ⊙ Solar              | ⊕ Electric Transmission Lines (345kv)                        |
| ⊕ Hydro       | ⊕ Wind               | — Natural Gas Interstate, Intrastate and Gathering Pipelines |
| ⊕ Natural Gas | ⊕ Wood               |  |

## Energy sources within Arkansas

Image Source: <http://www.eia.gov/beta/state/maps/print/AR.png>

# Benefits

---

## Participant Benefits

- Financial incentives
- Technical assistance
- Trade ally network





# CitySmart - Municipalities

---

- Program Summary

- Cities and Counties

- Incentives range between \$0.10 to \$0.14 per kWh with a total program incentive budget of \$1,600,000



- Incentive limited to 75% of the project costs
      - Currently paying ~%40 of the project costs through incentives





# CitySmart – Municipalities

---

## ■ Measures

- Lighting retrofit
- Lighting controls
- Exterior Lighting
- HVAC Replacement
- Chiller Replacement
- HVAC Controls
- VFD Motors
- Improved building design (new construction only for lighting and HVAC)
- Data Center Upgrades
- Refrigeration
- Direct Install (low flow aerators, PRSVs, CFLs, Vending Misers)
- Personal Computer Power Management (PCPM)
- Waste Water Treatment Plant (WWTP) Fan/Blower Retrofits
- WWTP Pump Retrofits

## Project Example: Lighting Retrofit (T12 to T8)



## CASE STUDY

### The City of Berryville

### PROJECT AT A GLANCE:

Annual kWh reduction:	<b>41,536</b>
Estimated annual savings:	<b>\$3,322</b>
Incentives paid:	<b>\$4,153</b>

#### THE OPPORTUNITY

The City of Berryville — a historic Arkansas city with a population of 5,356\* — is a small but thriving community that's committed to preserving its history while adopting progressive solutions. To help identify cost-effective upgrades that would reduce its annual energy consumption, Berryville leaders partnered with the staff of Entergy Arkansas' CitySmart® Program.

\*According to the 2010 census

#### THE PROJECTS

The CitySmart team worked with Berryville officials to identify opportunities to finance energy-saving projects using cash incentives from the CitySmart program. After an initial assessment, the CitySmart team recommended that Berryville upgrade the interior lighting in its municipal building, city shop, city museum, fire department and police department. Specifically, the team suggested that Berryville replace:

- T12 fluorescent lamps with high-efficiency T8s
- Incandescent bulbs with compact fluorescent lights (CFLs)

#### THE RESULTS

Berryville officials implemented the lighting upgrade recommendation from the CitySmart team, and as a result, the city received a cash incentive of more than \$4,000, reduced its annual energy consumption by 41,536 kilowatt-hours and cut its annual energy costs by \$3,322.

To learn more about the CitySmart program, visit [entergyarkansas.com/citysmart](http://entergyarkansas.com/citysmart).



A message from Entergy Arkansas, Inc. ©2014 Entergy Services, Inc. All Rights Reserved.

Questions? Contact the Energy Efficiency Solutions Center at 877-212-2420 or visit [entergyarkansas.com/citysmart](http://entergyarkansas.com/citysmart).

# CitySmart Results - Municipalities

Year	kWh Savings	kW Savings	INCENTIVES	Sum of Projects
2008	107,637.00	24.37	\$ 3,508.40	6
2009	135,347.00	12.64	\$ 1,820.09	1
2010	882,316.00	211.13	\$ 30,402.99	5
2011	1,138,930.00	172.83	\$ 24,887.96	5
2012	916,239.00	146.16	\$ 43,948.12	18
2013	1,564,045.78	344.16	\$ 144,126.80	61
2014	339,632.23	74.63	\$ 28,558.39	22
<b>Grand Total</b>	<b>5,084,147.01</b>	<b>985.93</b>	<b>\$ 277,252.75</b>	<b>118</b>

## For More Information on Entergy Arkansas CitySmart:

Walter Wills

Program Manager – CitySmart

Direct 501.221.4008

[wwills@clearesult.com](mailto:wwills@clearesult.com)



[www.entergyarkansas.com/citysmart](http://www.entergyarkansas.com/citysmart)

## **Commercial and Industrial Energy Efficiency Program (CIEEP)**

- Eligibility: All commercial and industrial customers over 50 kW demand
  - Retrofit and new construction
  - Qualifying equipment must be installed (ex. DLC listed LED fixtures)
  - *All projects require pre-inspection*
- Common measures:
  - Lighting, PC Power Management, Water Measures
- **Small Business Direct Install (SBDI) Program**
  - Eligibility: All commercial and industrial customers  $\leq 50$  kW demand
    - Must use qualified, in-network trade ally
    - Incentives payable to trade ally
    - Qualifying equipment must be installed (ex. DLC listed LED fixtures)
  - Common measures:
    - Lighting and Water Measures
- Both programs provide free technical consulting to identify and estimate energy savings

# Program Contact Information



**Greg Perkins**

EE Programs Coordinator - CIEEP

[gaperkins@aep.com](mailto:gaperkins@aep.com)

479.973.2435



**Sherry McCormack**

EE Programs Coordinator – SBDI / Residential

[slmccormack@aep.com](mailto:slmccormack@aep.com)

479.973.2404



**Ryan Parrish**

C&I Program Manager

[Ryan.Parrish@CLEAResult.com](mailto:Ryan.Parrish@CLEAResult.com)

479.935.9060

Learn more by visiting: <http://www.swepcogridsmart.com/>



## Natural Gas Incentives for Municipalities:

### No Cost Direct Install

- Aerators
- Pre Rinse Spray Valves

### Rebates for Equipment

- Furnaces \$400- \$600
- Water heaters \$50 - \$500
- Cooking Equipment \$400 - \$1500
- Boilers – rebate varies

### Custom Incentives @ \$8/ MCF saved

- Steam Traps
- HVAC controls
- Waste water Treatment Plants
- Equipment that uses natural gas
- Can be combined with participating electric utility incentives on eligible HVAC measures!





## For More Information:

---

### Sarah Amspacher

Program Manager – C&I Natural Gas Programs

Direct 501.221.4038

sampacher@clearesult.com



[www.ExcessIsOut.com](http://www.ExcessIsOut.com)



[www.centerpointenergy.com/services/naturalgas/business/rebatesforbusiness/AR/](http://www.centerpointenergy.com/services/naturalgas/business/rebatesforbusiness/AR/)

# THANK YOU!!!

Questions?

