



Energy Efficiency: A Resource for EPA Clean Air Compliance and Economic Development in Arkansas

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The American Council for an Energy-Efficient Economy (ACEEE)

- ACEEE is a nonprofit 501(c)(3) that acts as a catalyst to advance energy efficiency policies, programs, technologies, investments & behaviors.
- Nearly 50 staff based in Washington, D.C.
- Focus on end-use efficiency in industry, buildings, utilities & transportation
- Other research in economic analysis; behavior; national, state & local policy.
- Funding:
 - Foundation Grants (52%)
 - Contract Work & Gov. Grants (20%)
 - Conferences and Publications (20%)
 - Contributions and Other (8%)



www.aceee.org

2015 ACEEE National Conference on Energy Efficiency as a Resource

September 20 - 22, 2015
Statehouse Convention Center
Little Rock, AR

The premiere event for examining energy efficiency as a strategic and critical utility system resource. The program content will be specifically designed to focus on the issues related to utility-sector energy efficiency policies and programs.



Who Should Attend:

- Energy efficiency program developers and administrators
- Electric & gas utilities
- State & local policy makers
- Utility regulators
- Service providers
- Energy efficiency advocates
- Market & program analysts

#ACEEE-EER

Federal Regulation of Power Plant GHG Emissions

- May 2007: The Supreme Court Ruled that EPA, under the *Clean Air Act* may regulate GHGs if they are determined to be a danger to human health
- December 2009: EPA issued its “Endangerment Finding,” which found that GHGs threaten health & human welfare.
- March 2012: *New Source Performance Standards (NSPS)* rule for new utility sources proposed under CAA 111(b).
- January 2014: *NSPS* rule for new utility sources issued.

EPA's Clean Power Plan

EPA proposing to regulate carbon emissions from existing power plants under section 111(d) of the *Clean Air Act*.

EPA has set state targets using 4 building blocks:

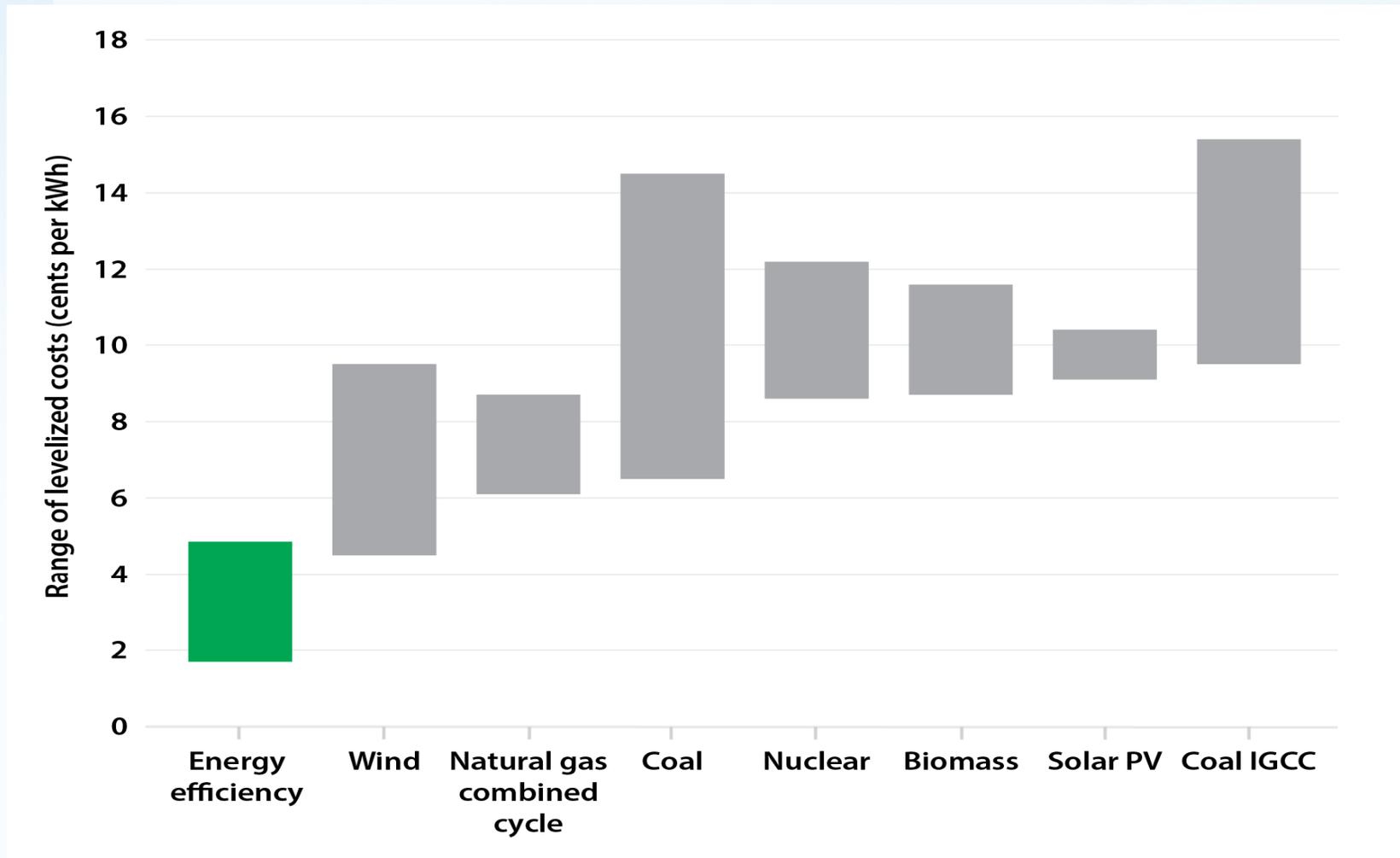
- Heat rate improvements
- Change in dispatch order
- Low-carbon generation
- Energy efficiency

States need to develop plans by ~June 2016 (2017 for multistate-plans). Can include any mix of strategies that achieve targets.

Implementation Possibilities

- Up to each state whether or not to include efficiency as a compliance method.
- Two possible approaches:
 - Mass-based (cap in #tons/year)
 - Rate-based (#tons/MWh)
- Will only affect utility power plants, independent power producers & large CHP

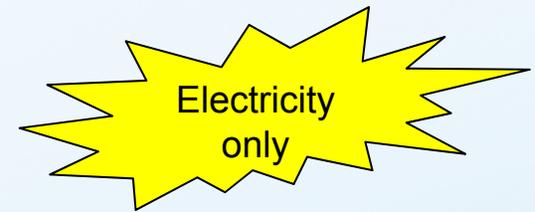
Why Include Energy Efficiency?



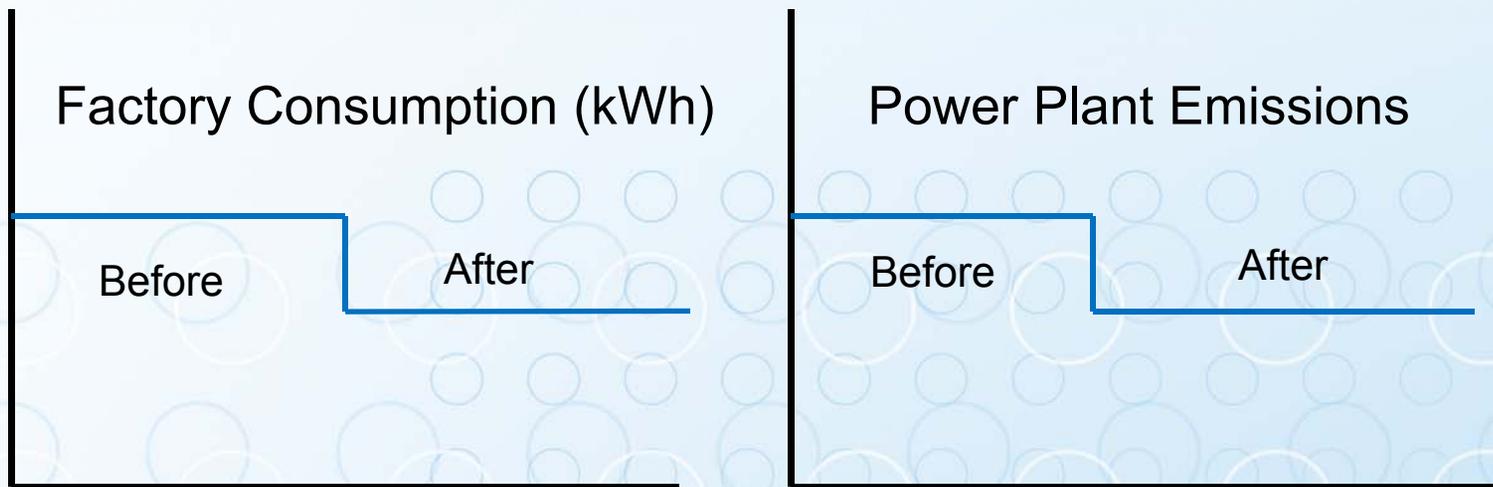
Source: Energy efficiency data represent the results from Molina 2014 for utility program costs (range of four-year averages for 2009-2012); supply costs are from Lazard 2013.

EE as Emission Reduction

How it might work



Documented Energy Reduction



\$



ACEEE Assessment of role of EE in meeting 111(d)

- ACEEE undertook an analysis of how much energy efficiency could contribute toward GHG reductions nationally and toward all 50 states.
- Estimated what the cost and benefits would be to implement energy efficiency.
- ACEEE estimated EE potential in all 50 states from:
 - Energy savings target of 1.5% annually
 - Residential & commercial building codes
 - Combined heat & power
 - State appliance standards for 5 products
- ACEEE estimates conservative—some states already doing more.

Key National Findings

Energy Efficiency policies & programs already in use could reduce 2030 electricity demand by **25%**, or more, or a reduction in carbon emissions of **26%** relative to 2012:

- States can begin implementing immediately—many are already doing many of these things. Savings from this point forward count toward future targets.
- Policies aren't a guarantee (Indiana, Ohio)—even states that have taken action could benefit from a “back stop”

The economic and employment impacts of this amount of EE would be positive in all states.

Results - Electricity savings

- 925 million MWh in 2030
 - Note: this is not all EE possible, but is based on what is tested and proven in states
- Savings in 2030 are a 25% reduction relative to 2012 consumption
- 247 GW of avoided capacity
 - nearly 500 power plants

Percentage of electricity savings relative to 2012 consumption, by census region

Region	Total (all four policies)
New England	30%
Middle Atlantic	28%
South Atlantic	24%
East South Central	23%
West South Central	24%
East North Central	22%
West North Central	22%
Mountain	30%
Pacific	27%

National Costs & Economic Impacts of Energy Efficiency Path

- EE scenario costs less than generation
 - Efficiency investments required to generate 2030 savings: \$47 billion
 - Retail price of avoided electricity: \$95 billion
 - Net savings of \$48 billion
- EE Results can lower electric rates & bills for all customers
- Economic impacts
 - 17.2 billion increase in GDP in 2030
 - 611,000 jobs in 2030

What Does this Mean for Arkansas?

- Including as much energy efficiency as possible results in lowest compliance cost
- Energy efficiency can contribute to economic growth in the state by keeping energy dollars local
- Energy efficiency can maintain or create more jobs than continuing to rely on supply solutions
- Energy efficiency can increase the competitiveness of Arkansas businesses

Annual Energy Savings from Energy Efficiency in Arkansas



Energy Efficiency Can Meet More than **40%** of State Target

- EPA state target is 47% reduction
- ACEEE modeled energy efficiency measures achieve 19% reduction
- Even more efficiency opportunities are available in the state—opportunities to build on existing EE programs & look at CHP

Arkansas Annual Energy Savings by Policy (MWh's)

Policy	2020	2030
Utility EE Targets	1,860,000	8,459,000
CHP	85,000	262,000
Building Codes	317,000	1,301,000
State Appliance & Equipment Standards	63,000	88,000
State Total	2,325,000	10,100,000

Arkansas Annual Energy Savings, Utility Energy Efficiency Targets (MWh's)

Sector	2020	2030
Commercial	682,000	3,054,000
Residential	854,000	3,425,000
Industrial	704,000	3,370,000
Total	2,240,000	9,848,000

Economic impacts on Arkansas of All Energy Efficiency Policies in 2030

	2030
Net Jobs	4,790
Cumulative cost of energy savings (millions)	\$3,800
Cumulative avoided electricity purchases (millions)	\$5,900
Net GSP (millions)	\$44,600
Average cost per MWh saved	\$50.74

What Next?

Comments by stakeholders & final rule June 2015.

Challenges for Arkansas:

- Only half of state electric load covered by current EE programs
- How does the state promote CHP
- How to measure energy efficiency
- Does the state choose a rate or mass based approach
- How Arkansas works with neighbors
- Does the state join a regional group or go it alone

Concluding Thoughts

- Opportunities from the energy efficiency path:
 - Minimize the cost of compliance
 - Can reduce future energy bills for all customers
 - Grow the economy & create jobs
- Now is the time to begin planning.
- Energy efficiency makes sense even without EPA climate rule—the no-regrets response for Arkansas’s energy future.

Resources

ACEEE's state Opportunity Report: <http://aceee.org/research-report/e104>

ACEEE's CPP report: <http://aceee.org/research-report/e1401>

Template for crediting EE: <http://aceee.org/files/pdf/sip-template-0314.pdf>

Harvard Law article on legal basis of CPP:

<http://blogs.law.harvard.edu/environmentallawprogram/files/2013/03/The-Role-of-Energy-Efficiency-in-the-111d-Rule.pdf>

EPA Avert tool: <http://epa.gov/avert/>

“3N” Principles: http://www.naseo.org/Data/Sites/1/principles_3n_2014.pdf

“3N” Preamble: http://naseo.org/Data/Sites/1/media/suggested-emv-preamble-language_4-22-14.pdf

Thank you!

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