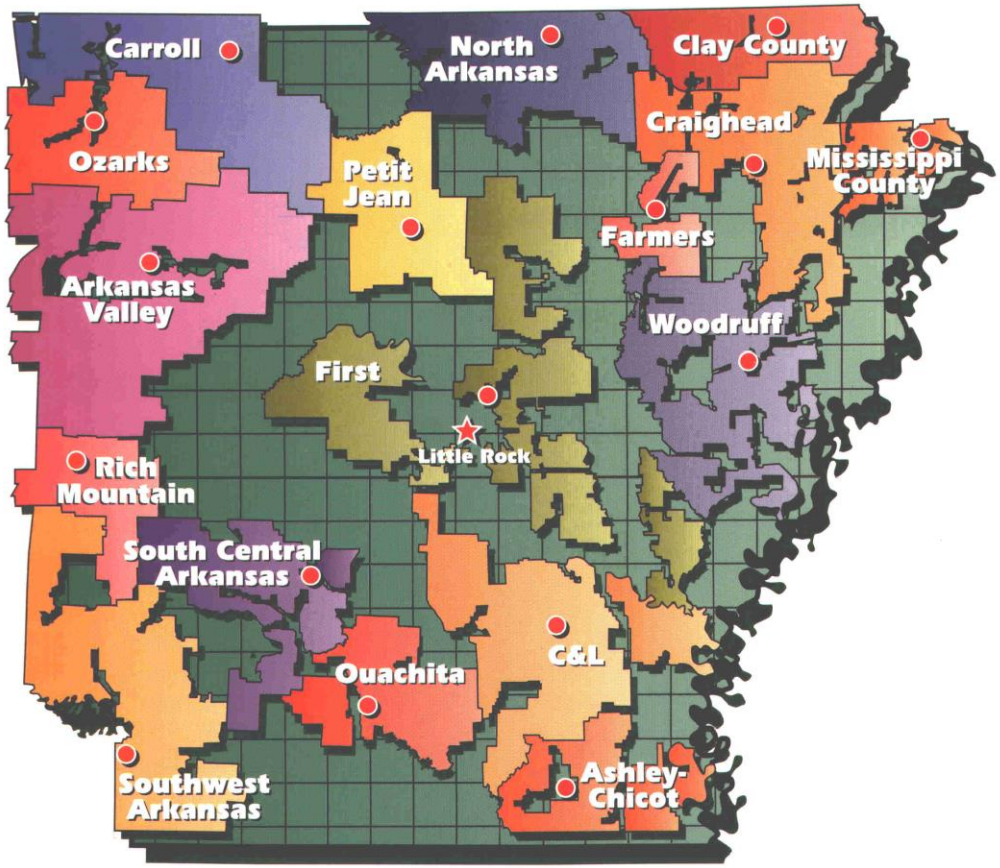
Arkansas Electric Cooperatives



Presentation to Joint Energy Committee
September 25, 2014

We Are Arkansas

Reliable
Affordable
Responsible

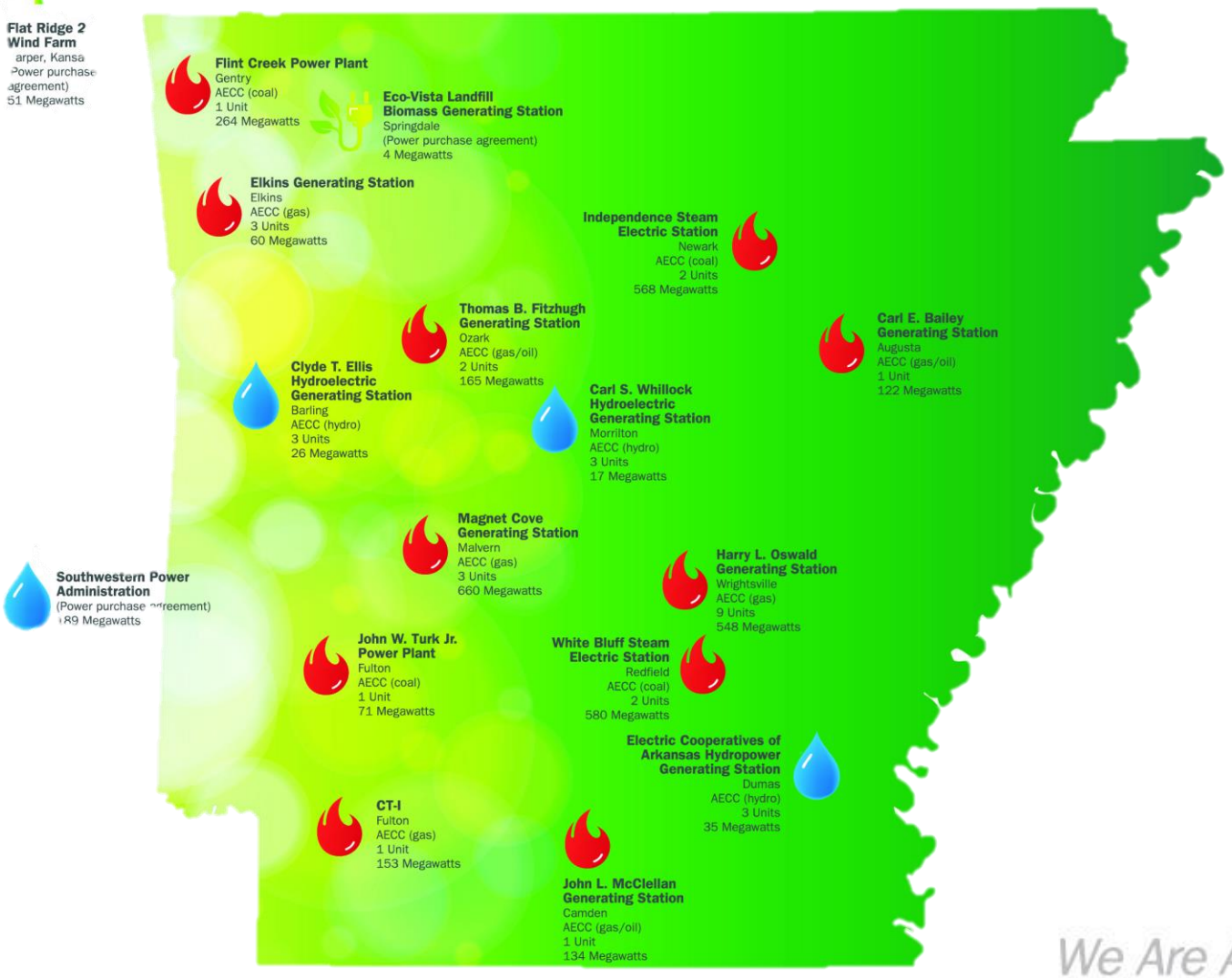
Powering Communities and

Empowering Members to

Improve the Quality of Their Lives

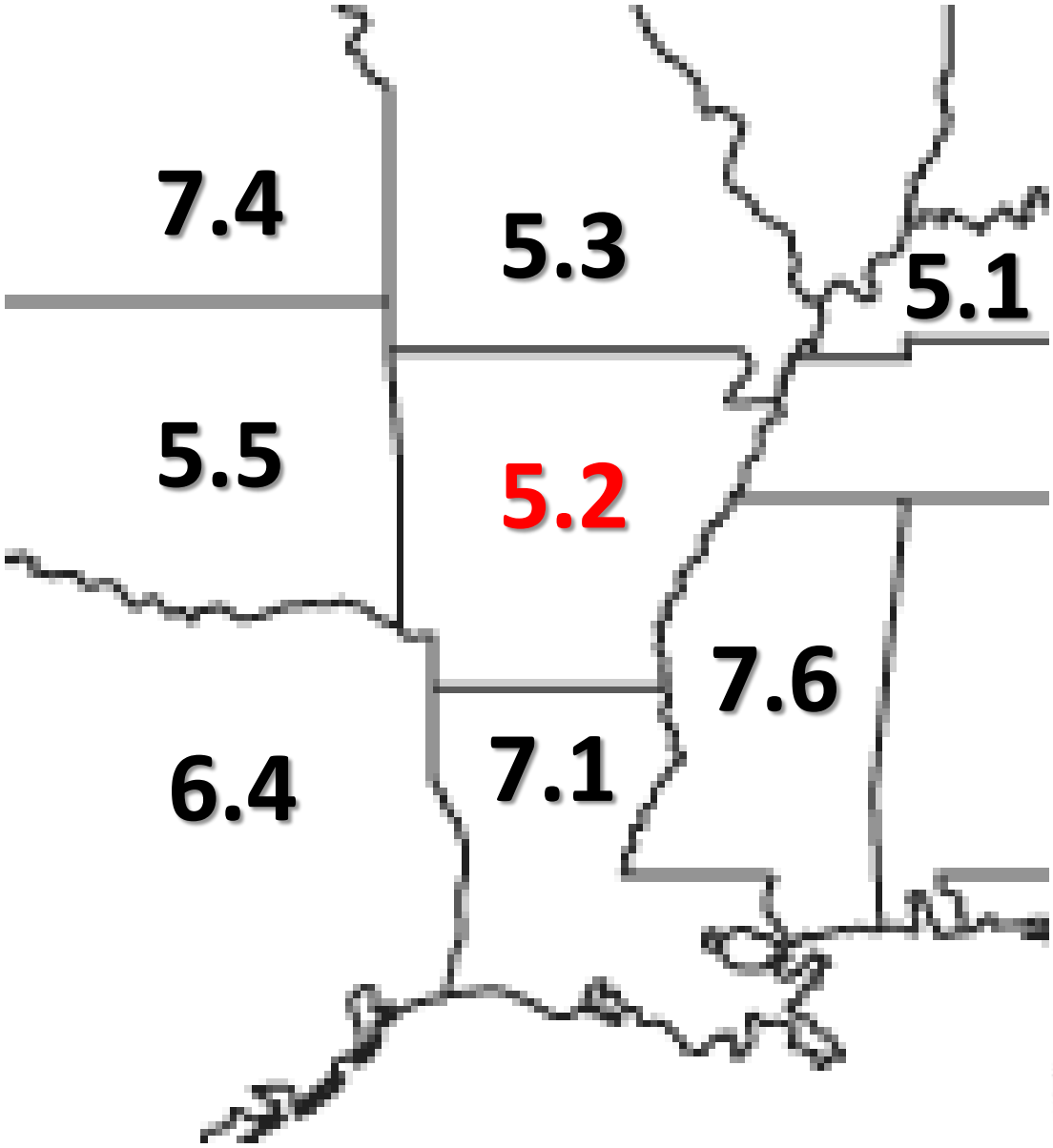
We Are Arkansas

Diversified!



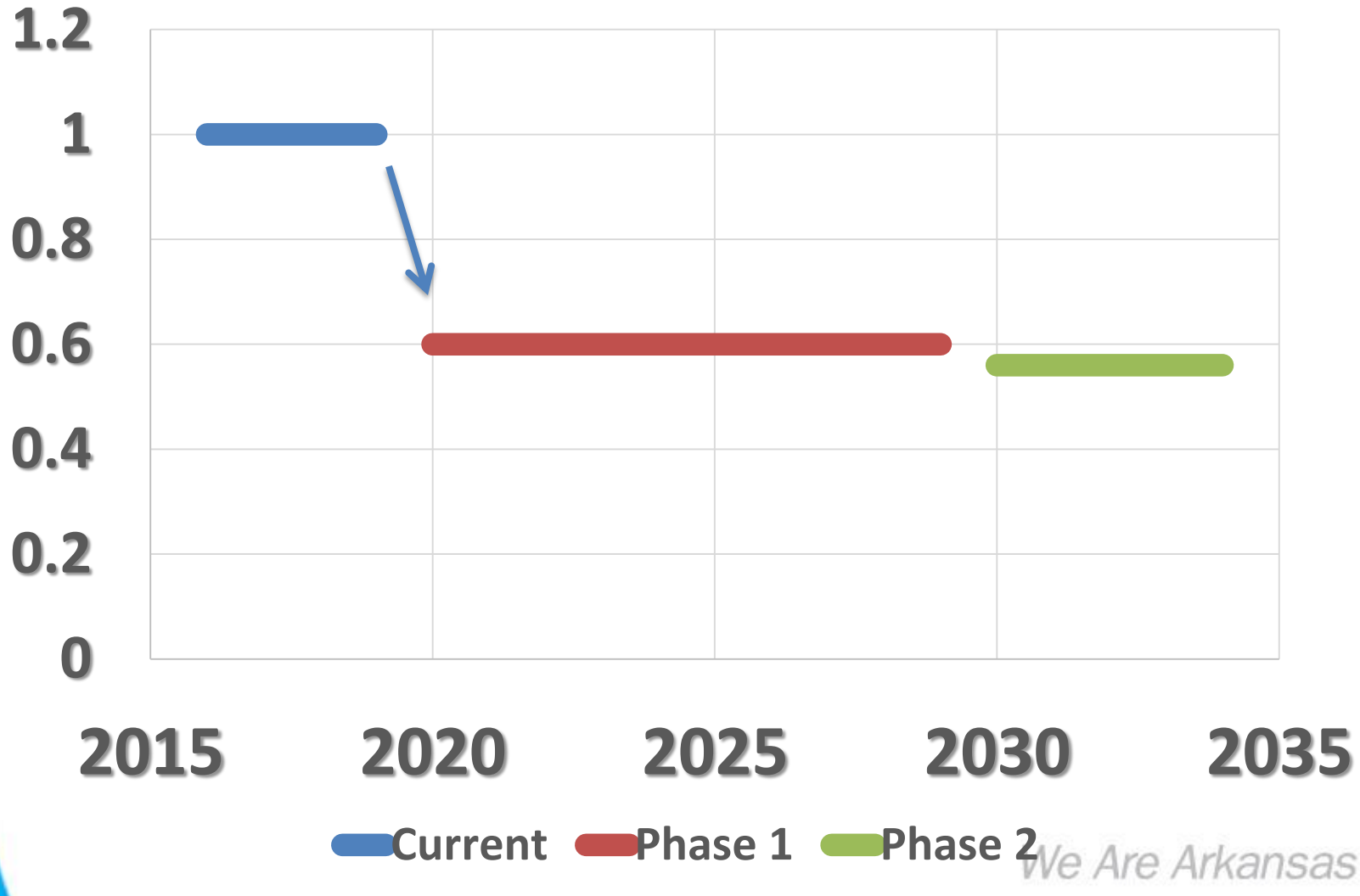
We Are Arkansas

Affordable



EPA's "Clean Power Plan"

Target Reduction "Glide Path"



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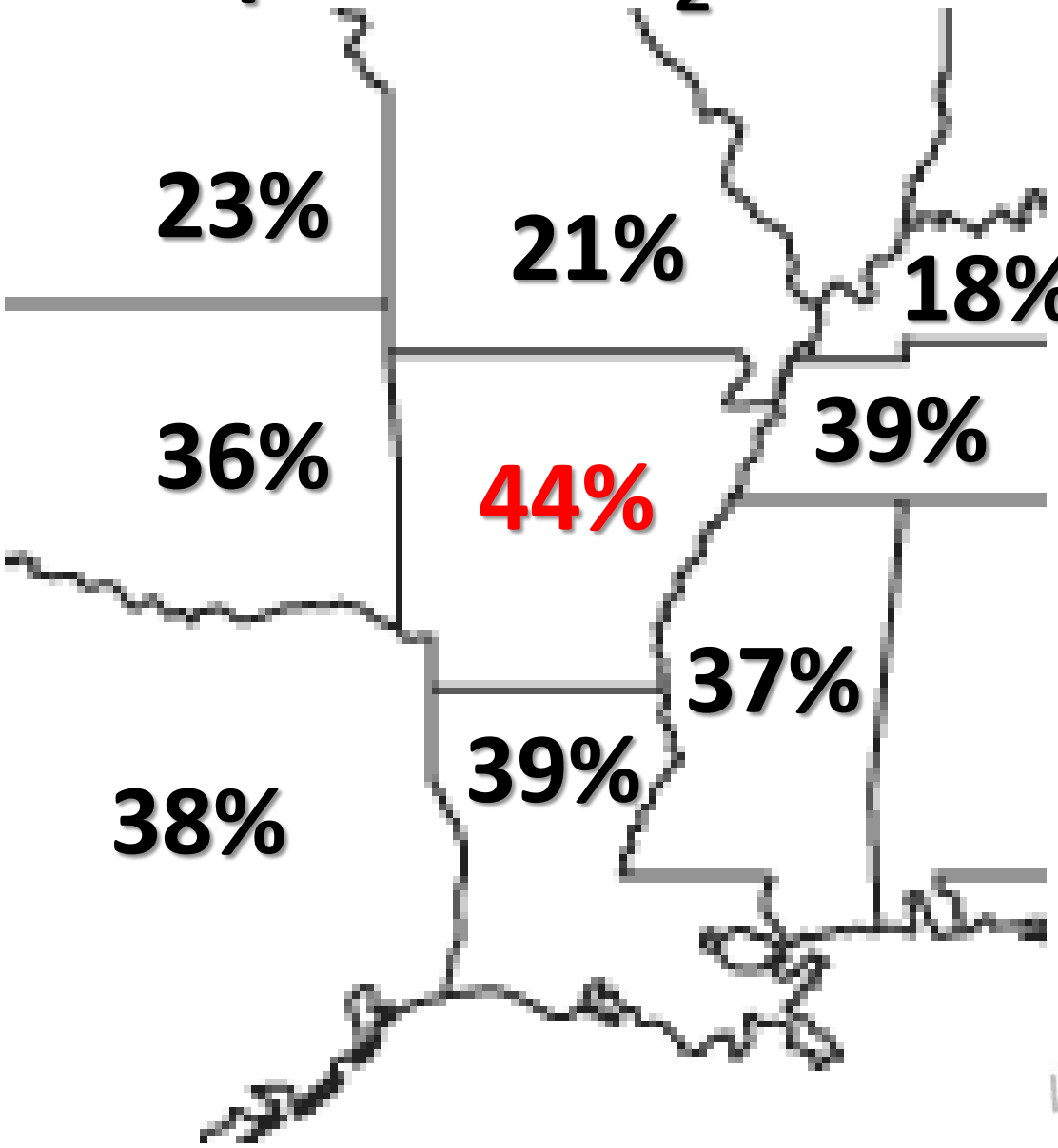
Proposed CO_2 Reductions



Blocks 1, 3 and 4:

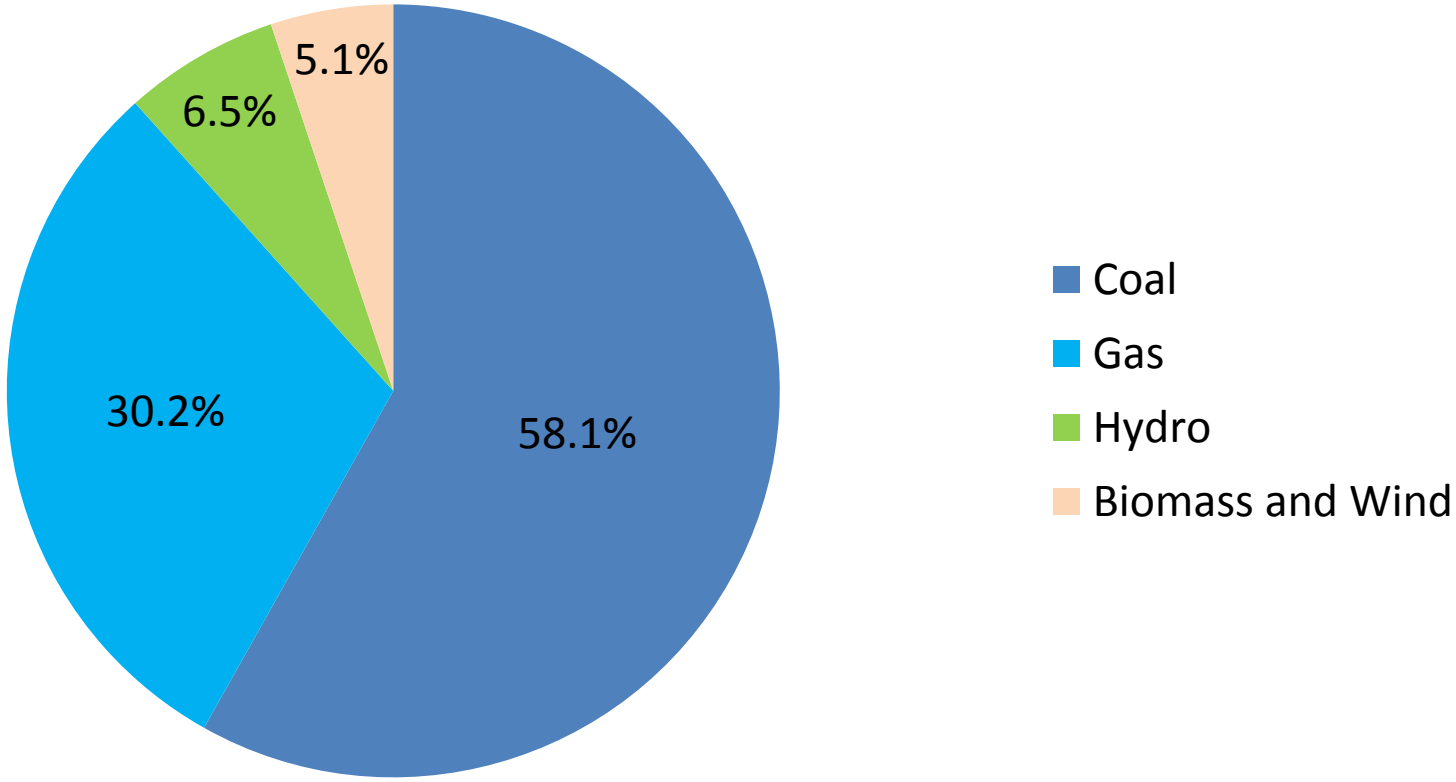
Blocks 1, 3 and 4

- Block 1 – EPA: “Improve coal plant efficiency by 6%” (not achievable)
- Block 3 – Opportunities for renewables in Arkansas are few and of limited capacity.
- Block 4 – 1.5% energy efficiency per year is extremely aggressive and burdens rate payers with additional costs for improvements.

Block 2 – Major Cost Impact and Reliability Concern

- Redispatch from Coal to Natural Gas causes most of the economic impact of proposed rule.
- Redispatch will force many coal units into early retirement. Without them can the electric system stay together?

2020 Generation Mix, Base Case



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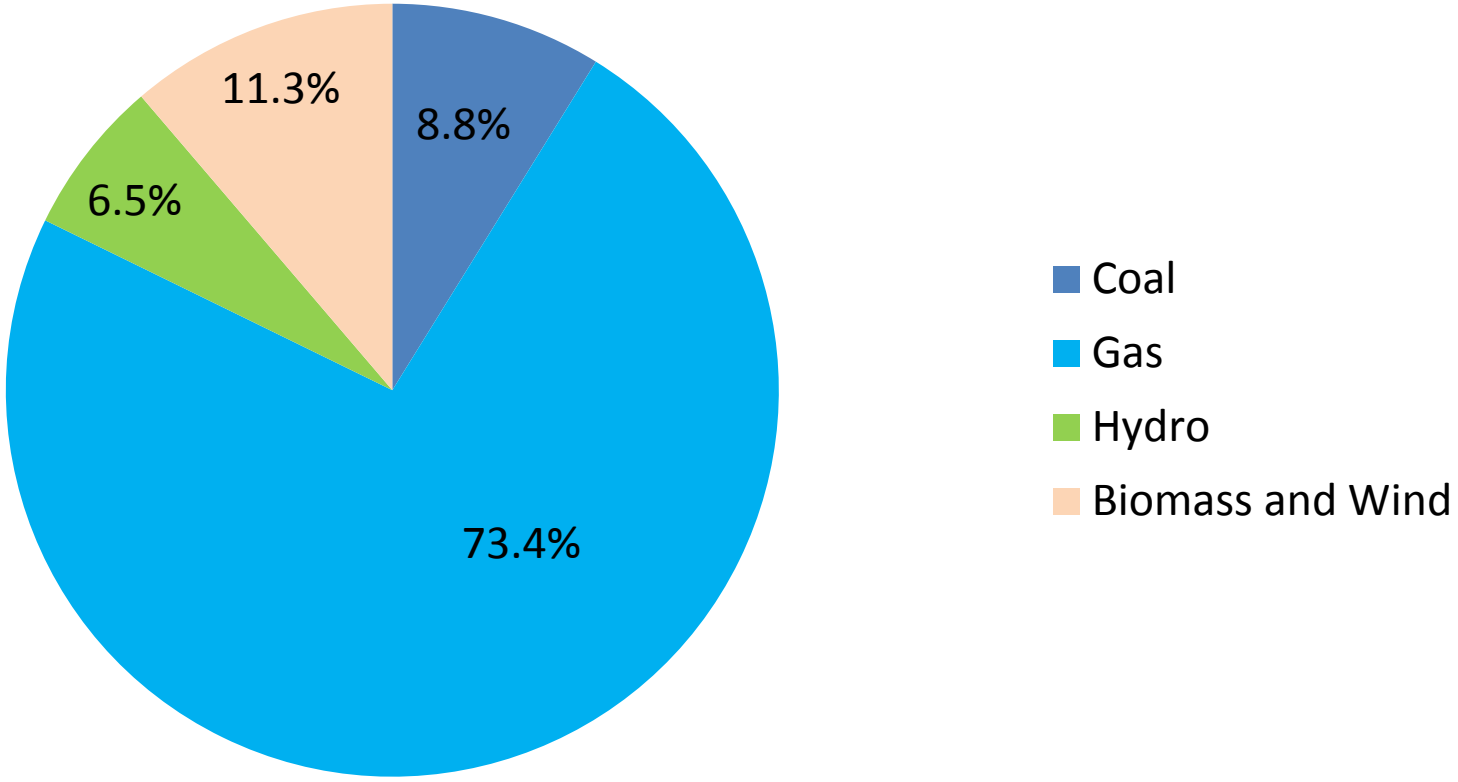
2020 Generation Mix
"EPA Scenario"



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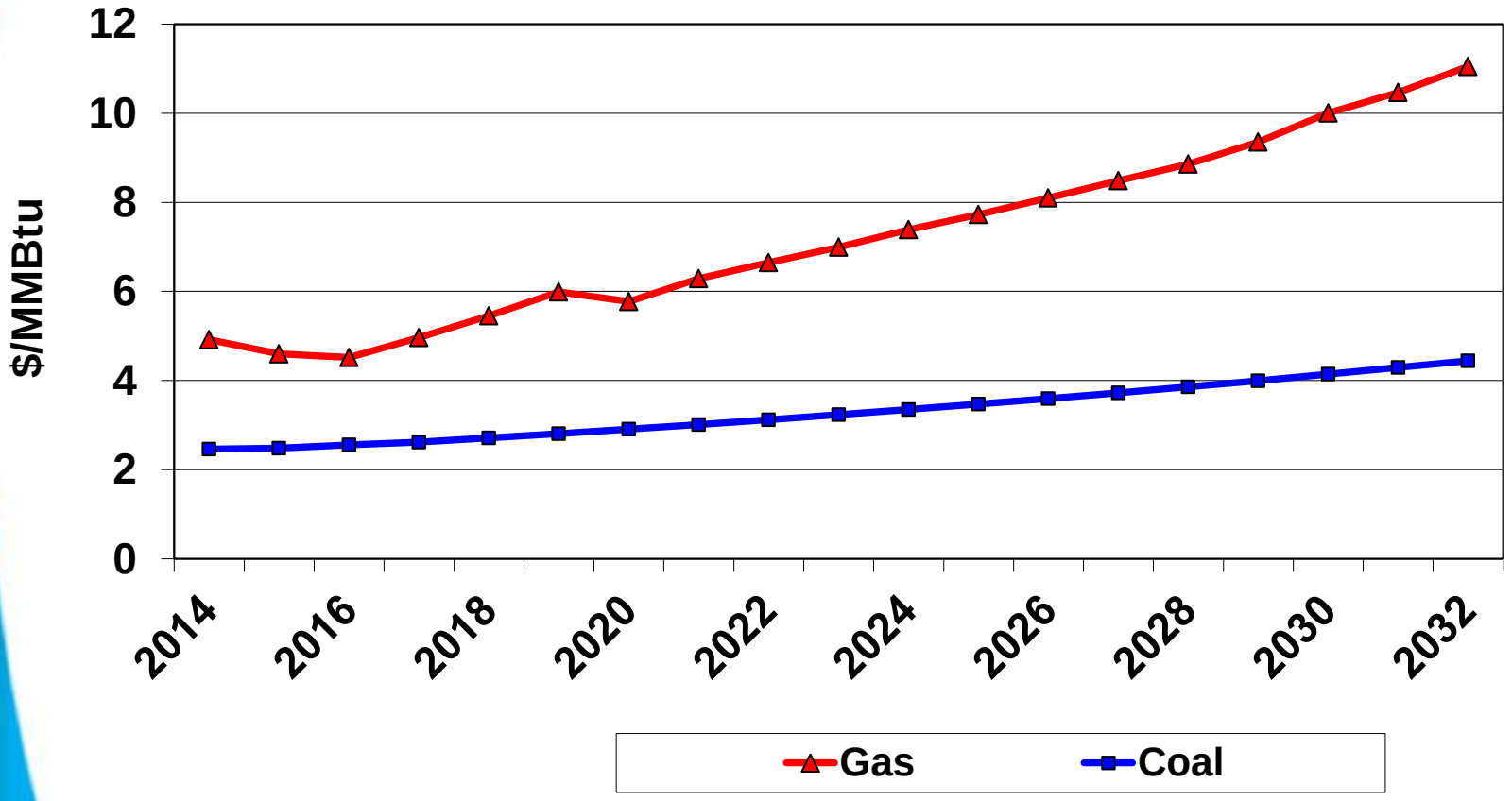
Block 2: Redispatch Coal to Gas

Fuel Price Forecast



Gas forecast after 2018 based on forecast from the Energy Information Administration

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Block 2: Redispatch Coal to Gas

- **Cost to AECC alone:**

  $74 million/year in 2020 increasing to $184 million in 2030

- **Likely loss of most affordable, most reliable units**
- **EPA made no attempt to consult with FERC about the rule's impacts to the reliability of the electric grid.**

SPP's Reliability Impact Study

- SPP's preliminary results indicate increased thermal overloads and low voltages due to EPA's assumed retirements
- **Summer peak cases are not solving under single contingency**
  - **Indicative of significant low voltages due to lack of reactive support**
- Remaining steps to be taken in SPP studies:
  - Continue to take steps to get all cases to solve and note what steps were required
  - Determine the amount of reactive support required to maintain reliable voltages
  - Identify the number and significance of overloads and low voltages that would have to be solved to comply with NERC Standards

SPP Reserve Margin Assessment

- SPP used current load forecasts supplied by SPP members, currently planned generator retirements, currently planned new generator capacity with GIAs, and EPA's assumed retirements
- **SPP's minimum required reserve margin is 13.6%**
- **By 2020, SPP's anticipated reserve margin would drop to 5.0%, representing a *capacity margin deficiency* of approximately 4,500 MW**
- **By 2024, SPP's anticipated reserve margin would fall to -3.8%, representing a *capacity margin deficiency* of approximately 10,000 MW**
- **Out of 14 load serving members assessed, 9 would be deficient by 2020 and 10 by 2024**

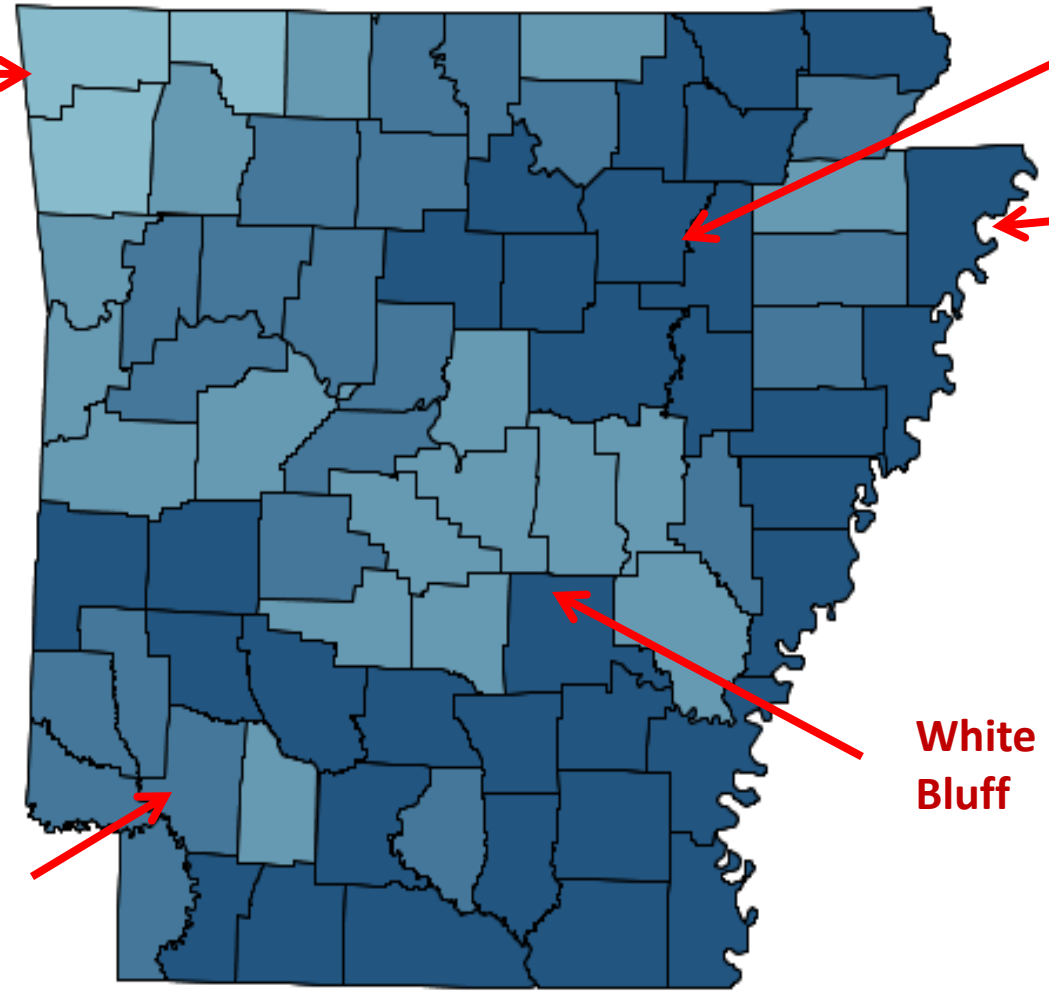
Another Impact of Redispatch

- EPA's analysis of the rule's impact assumes that 3,700 MW of Arkansas' 5,500 MW of coal capacity will be retired by 2020, the effective date of the rule.

White Bluff Plant

1,237 jobs depend on it

Unemployment rates by county, not seasonally adjusted, Arkansas May 2014



Flint Creek

Independence

Plum Point

White Bluff

Turk

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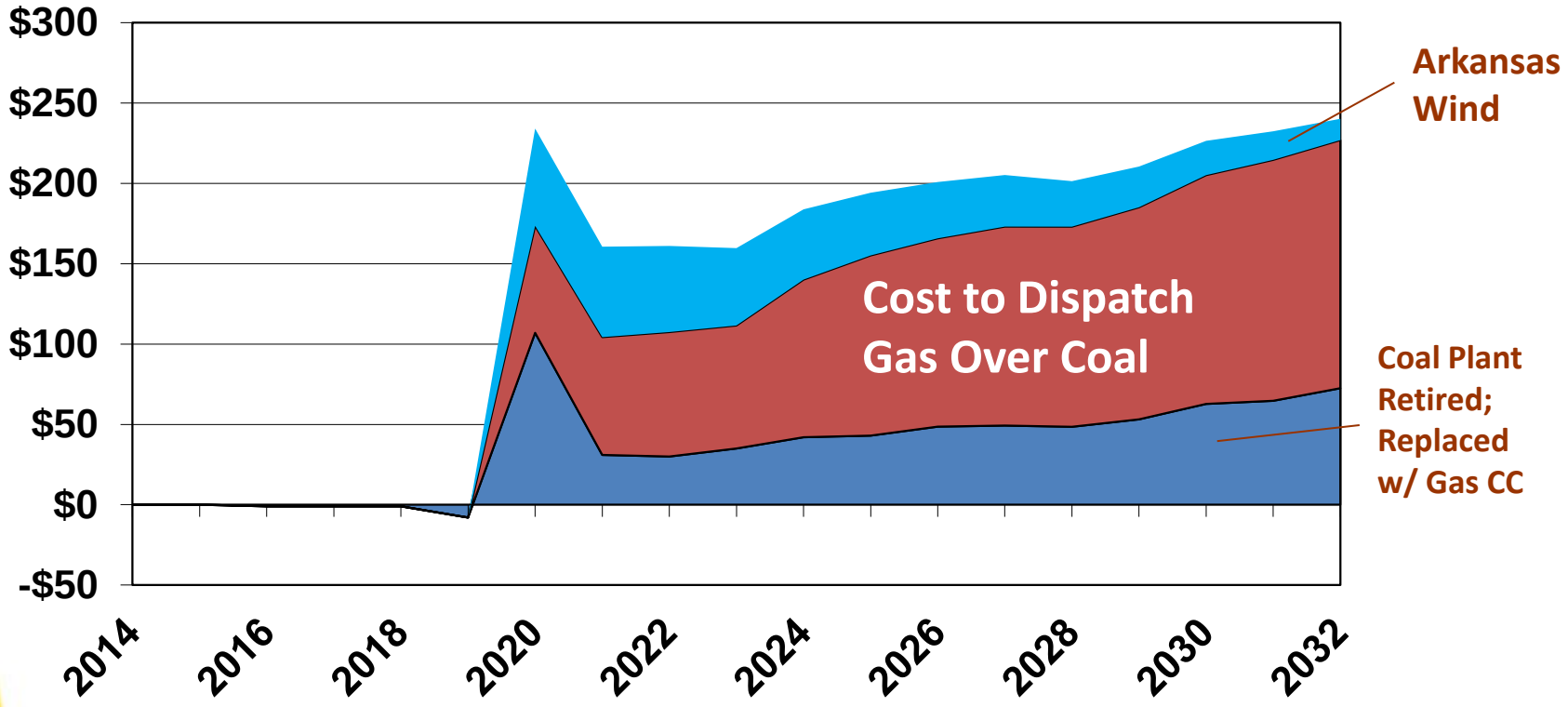
What will the ratepayer see?

Increase in Annual Residential Cost, Effect of Clean Power Plan: "Primary Scenario"

Increase in Annual Cost to Homeowners of $150 to $250



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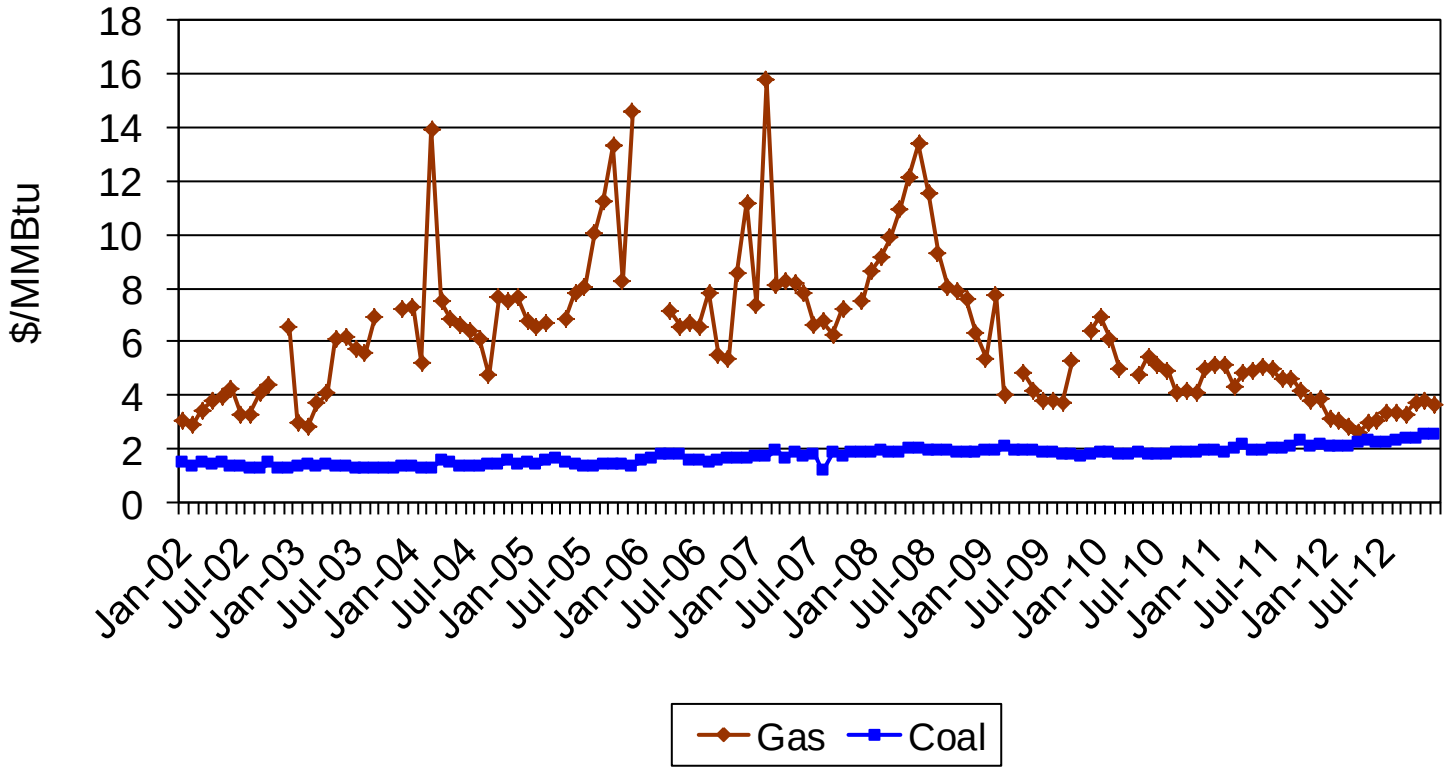
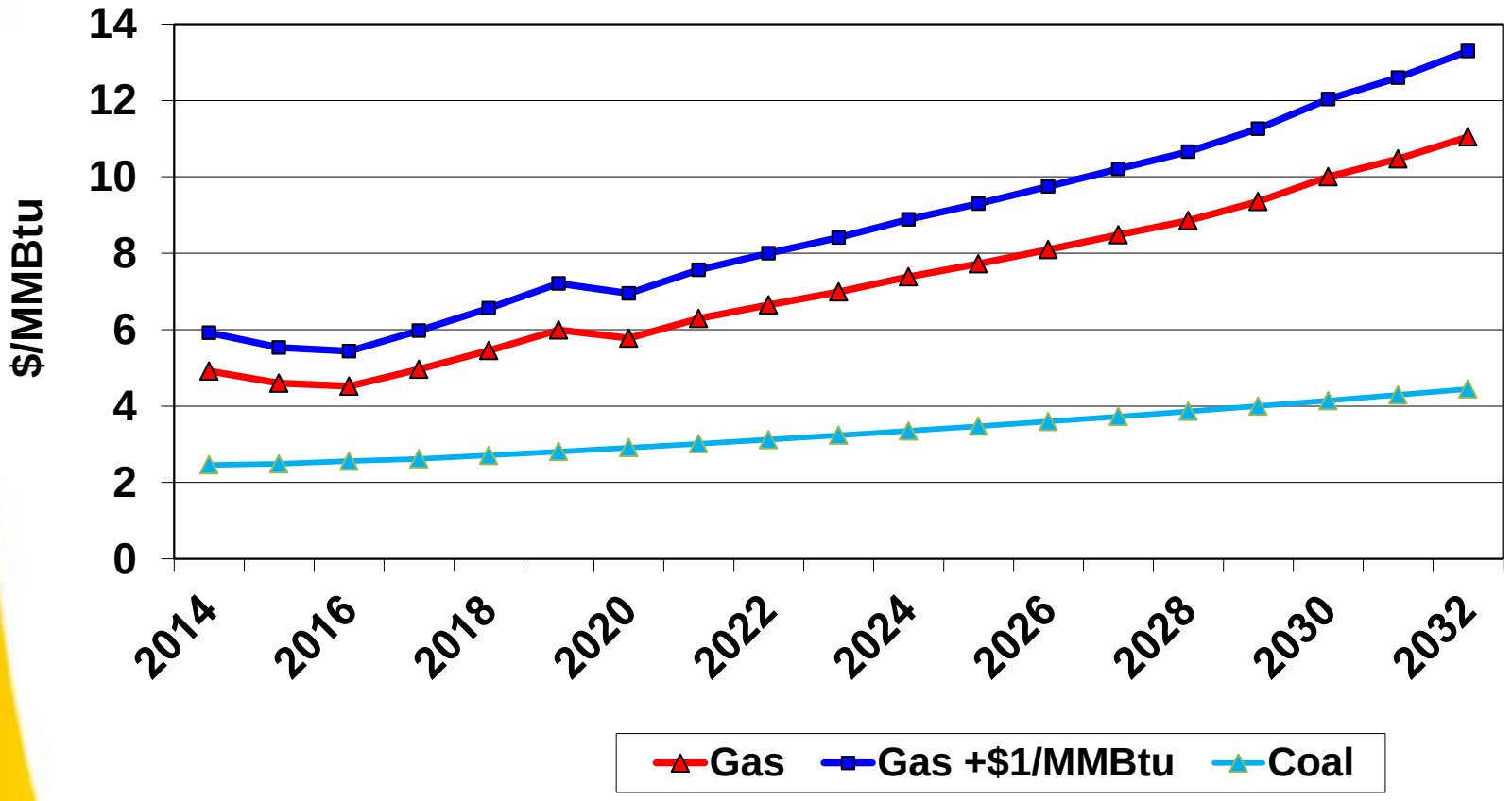
Historical Gas and Coal Costs for AECC Owned Plants



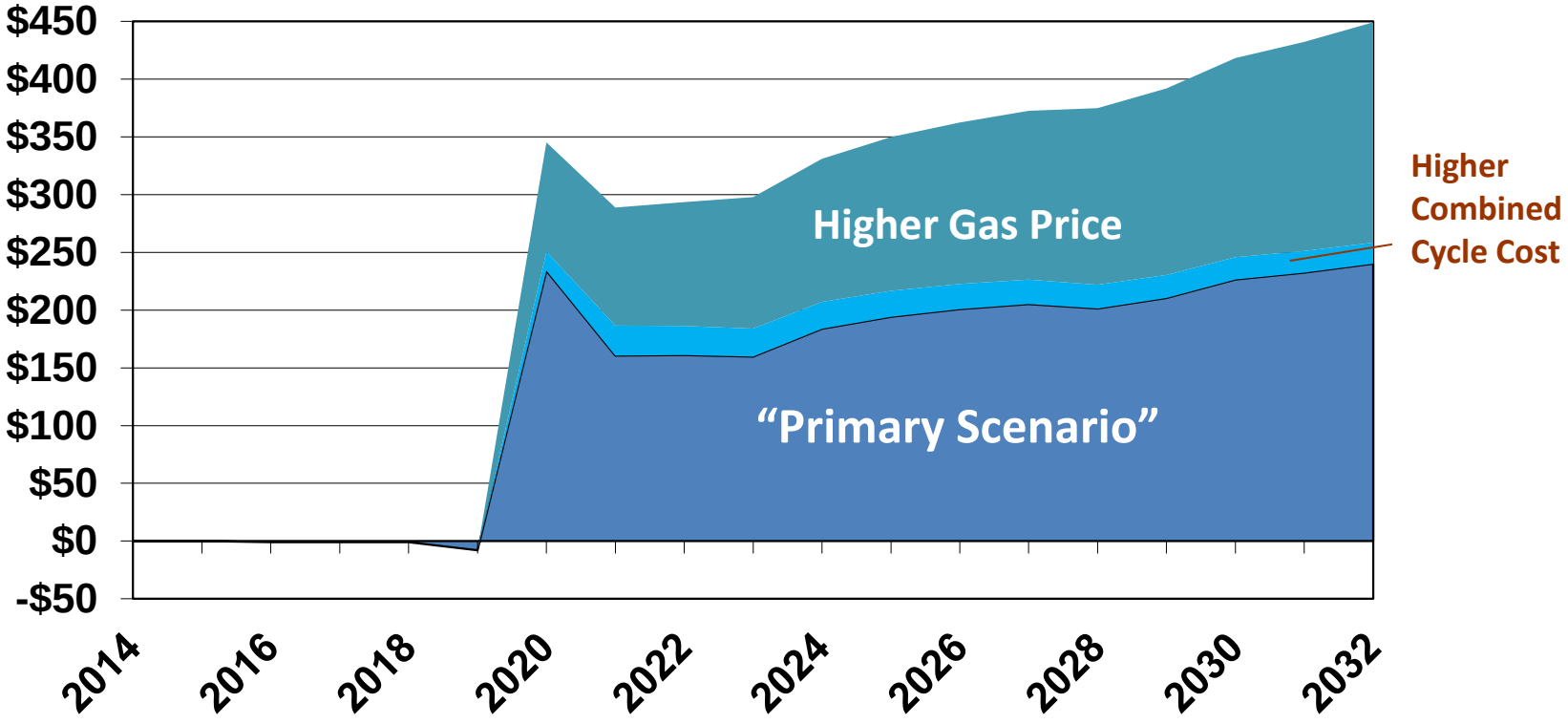
Fuel Price Forecast: Sensitivity Case



Base case gas forecast after 2018 based on forecast from the Energy Information Administration

Increase in Annual Residential Cost Potential Effect: Sensitivity Case

Potential Increase in Annual Cost to Homeowners of $280 to $450



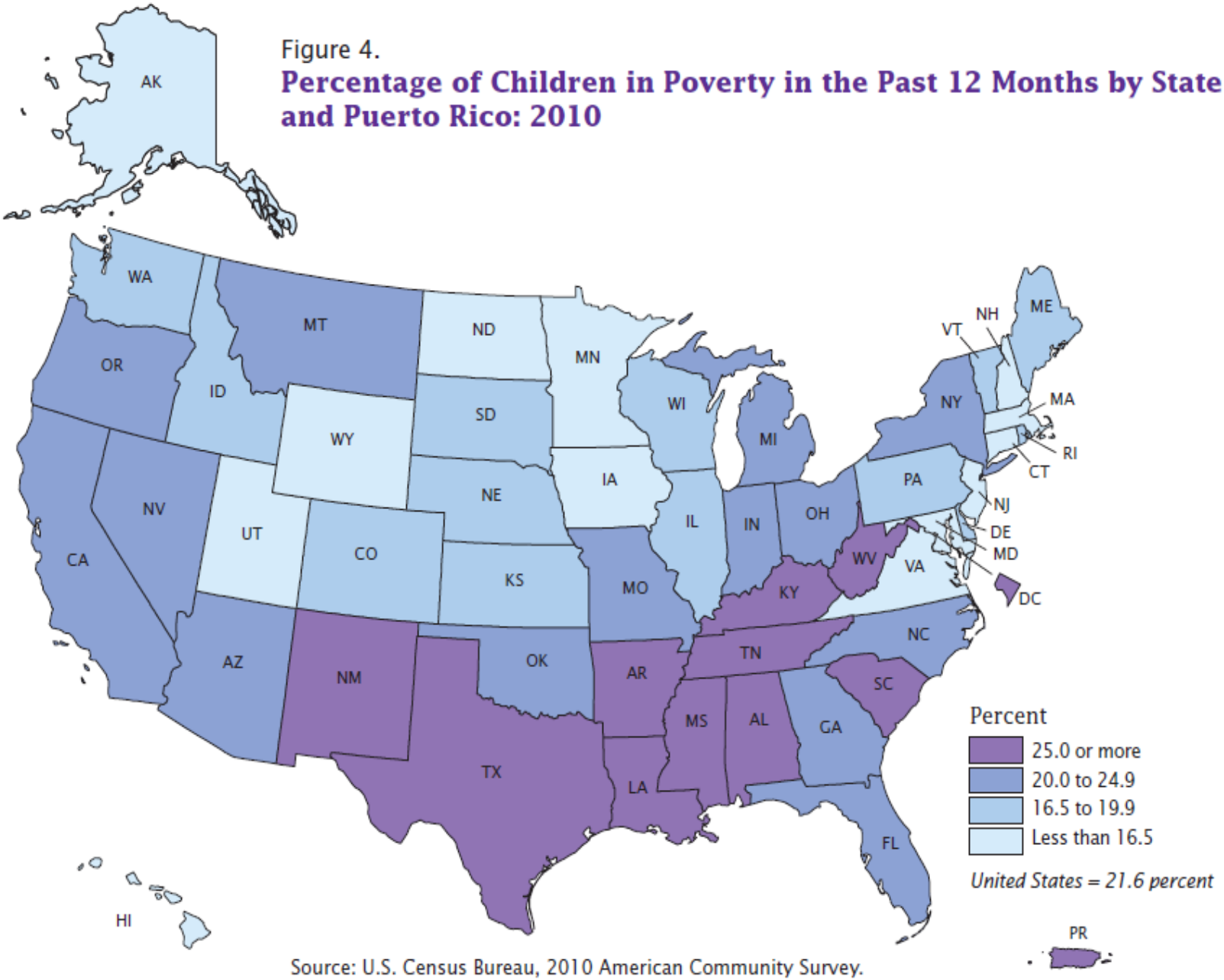
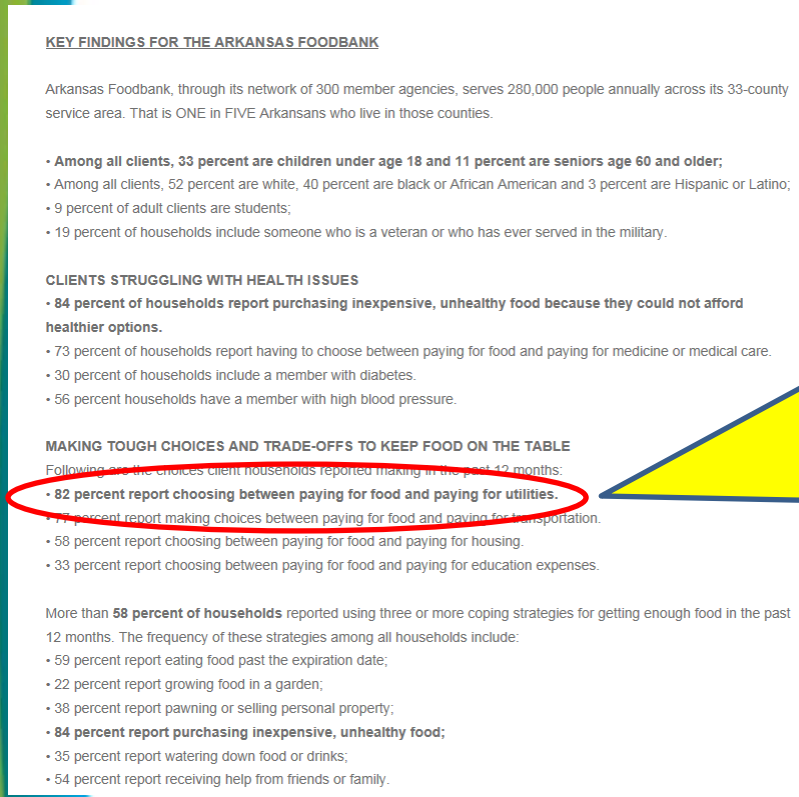


Figure 4.
Percentage of Children in Poverty in the Past 12 Months by State and Puerto Rico: 2010
AK
HI
WA
OR
CA
NV
ID
MT
WY
UT
AZ
CO
NM
ND
SD
NE
KS
OK
TX
MN
IA
MO
AR
LA
WI
IL
MS
MI
IN
KY
TN
AL
OH
WV
GA
FL
SC
NC
VA
PA
NY
MD
DE
NJ
CT
RI
MA
VT
NH
ME
DC
PR
Percent
25.0 or more
20.0 to 24.9
16.5 to 19.9
Less than 16.5
United States = 21.6 percent
Source: U.S. Census Bureau, 2010 American Community Survey.

Hunger in Arkansas



KEY FINDINGS FOR THE ARKANSAS FOODBANK

Arkansas Foodbank, through its network of 300 member agencies, serves 280,000 people annually across its 33-county service area. That is ONE in FIVE Arkansans who live in those counties.

- **Among all clients, 33 percent are children under age 18 and 11 percent are seniors age 60 and older;**
- Among all clients, 52 percent are white, 40 percent are black or African American and 3 percent are Hispanic or Latino;
- 9 percent of adult clients are students;
- 19 percent of households include someone who is a veteran or who has ever served in the military.

CLIENTS STRUGGLING WITH HEALTH ISSUES

- **84 percent of households report purchasing inexpensive, unhealthy food because they could not afford healthier options.**
- 73 percent of households report having to choose between paying for food and paying for medicine or medical care.
- 30 percent of households include a member with diabetes.
- 56 percent households have a member with high blood pressure.

MAKING TOUGH CHOICES AND TRADE-OFFS TO KEEP FOOD ON THE TABLE

Following are the choices client households reported making in the past 12 months:

- **82 percent report choosing between paying for food and paying for utilities.**
- 77 percent report making choices between paying for food and paying for transportation.
- 58 percent report choosing between paying for food and paying for housing.
- 33 percent report choosing between paying for food and paying for education expenses.

More than **58 percent of households** reported using three or more coping strategies for getting enough food in the past 12 months. The frequency of these strategies among all households include:

- 59 percent report eating food past the expiration date;
- 22 percent report growing food in a garden;
- 38 percent report pawning or selling personal property;
- **84 percent report purchasing inexpensive, unhealthy food;**
- 35 percent report watering down food or drinks;
- 54 percent report receiving help from friends or family.

Choices client households reported making in the past 12 months:

- **82 percent report choosing between paying for food and paying for utilities.**

- **Source: Hunger In Arkansas Report – Arkansas Food Bank**

http://www.arkansasfoodbank.org/hunger-overcomers/press-room/press-releases

Conclusions & Recommendations

AECC recommends that Arkansas comment to EPA that:

- The 910 lbs CO2/MWh target set for Arkansas is excessive - and inequitable. A higher target is justified and needed to avoid unnecessary adverse impacts to Arkansas.
- The proposed “glide path” requires almost all reductions be made by 2020, too quickly, and needs to be phased in.
- States and RTO’s need more time to develop the mechanisms and agreements required to move away from least cost dispatching to environmental dispatching.
- Reliability of natural gas supply must be considered as well as the time necessary to permit and construct additional pipeline capacity. FERC must be involved to determine overall reliability impacts to the electric and natural gas systems.