

COST CONSIDERATIONS WITH THE EPA CLEAN POWER PLAN

ADEQ/APSC Stakeholder Meetings
on Clean Power Plan

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EXECUTIVE SUMMARY

▶ COAL POLLUTION

- ▶ The costs of inaction are great and must be avoided.
- ▶ The 19 Arkansas power plants = 41 million tons of carbon in 2013.
Five(5) coal plants accounted for 85% of the carbon pollution (36 million).
Three oldest = 49 yrs old in 2030.

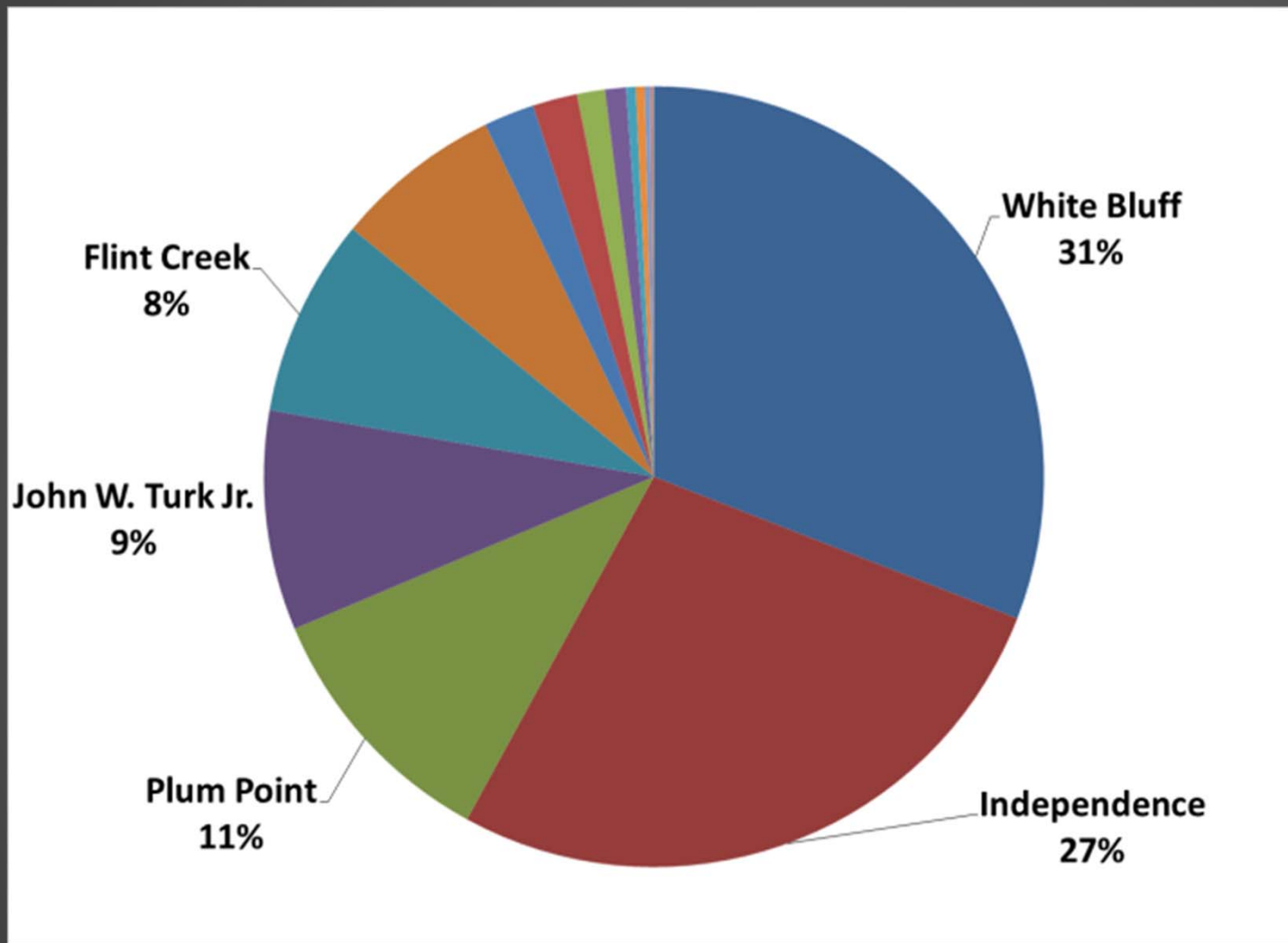
▶ RENEWABLE ENERGY

- ▶ Recent PPA's in neighboring states: wind at 2 c/kwh, solar at 5 c/kwh

▶ ENERGY EFFICIENCY

- ▶ Boosting EE programs saves consumers money through avoided electricity spending. Offsets power production at 5c/kwh.
- ▶ EE and RE can reduce \$650M/annual costs to import out-of-state coal

ARKANSAS – LARGEST 5 SOURCES ARE COAL PLANTS



Coal plants account for 85% of AR power plant carbon emissions.

Mean age in 2030 of 3 oldest plants = 48.8 years

CLIMATE CHANGE COSTS OF INACTION

- ▶ Average temperatures have risen in most states since 1901, with 7 of the top 10 warmest years on record occurring since 1998.
- ▶ Large federal taxpayer exposures, for example (per year):
 - ▶ \$20B Congressional Disaster Appropriations
 - ▶ \$10B National Flood Insurance Program
 - ▶ \$4B to 20B Federal Crop Insurance Program
- ▶ *\$300 per capita for 2012 federal weather/climate payments*
- ▶ Climate and weather disasters in 2012 cost the American economy more than \$100 billion.
- ▶ Carbon rule climate & health benefits worth an estimated \$55-\$93 billion per yr in 2030. This includes avoiding 2,700-6,600 premature deaths & 140,000 -150,000 asthma attacks in children
- ▶ Outweigh the annual costs of \$7.3 billion to \$8.8 billion in 2030.

1978



1978

SWEPCO's Flint Creek Station becomes first coal fired plant in AR



2014



2014

SWEPCO's Flint Creek Station still burning coal...after 37 years



...2020?, 2030?, 2040?, 2050?, ...



DRAFT - SUBJECT TO REVISION - NOT
OFFICIAL POSITIONS

ONE IDEA: GRADUALLY PHASE OUT COAL PLANTS ON 40TH YEAR – INSERT CLEAN ENERGY

	40 Years Operational	Phase Out Coal & Replace w/ 100% Clean Energy		Phase Out Coal & Replace w/ 50% Clean Energy, No More than 50% NG	
		CO2 Reduction	Cumulative CO2 Reduction	CO2 Reduction	Cumulative CO2 Reduction
Flint Creek 1	2018	3,329,489	3,329,489	2,330,643	2,330,643
White Bluff 1	2020	6,308,388	9,637,877	4,415,871	6,746,514
White Bluff 2	2021	6,218,310	15,856,187	4,352,817	11,099,331
Independence 1	2023	4,795,695	20,651,882	3,356,987	14,456,318
Independence 2	2024	6,160,584	26,812,466	4,312,409	18,768,726
Plum Point		4,326,892		3,028,825	21,797,551
Turk		3,687,004		2,580,903	24,378,454

41-45% cut = 16.5-18.0 M reduction from 2012

EPA CPP is gradual: compliance phased-in starting in 2020, interim based on 2020-2029 average

RENEWABLE ENERGY ECONOMICS

1. Maximizing the amount of zero pollution renewable energy Arkansas brings onto the grid maximizes the emissions reductions benefits for the carbon rule.
2. Some recent PPA's in neighboring states for renewable energy:
 - a. Xcel/SPS Wind with Next Era Mammoth – 1.9 cents/kwh
 - b. Xcel/SPS Wind with Next Era Palo Duro – 2.1 c/kwh
 - c. Xcel/SPS Wind with Infinity Roosevelt – 2.0 c/kwh
 - d. Austin Energy Solar with Recurrent – 4.9 c/kwh
 - e. EPE Solar with First Solar Macho Springs – 5.7 c/kwh

compare to EIA costs in 2020-2030 for coal and gas

RENEWABLE ENERGY ECONOMICS

1. Arkansas spends \$650 million/year (2012) to import WY coal.
2. In the 15 years from 2015 through 2030, that's roughly \$9.75 billion from Arkansas families and businesses leaving the state.
3. Arkansas ranks #14 out of all the states with \$98 annual per capita spending on importing coal from other states.
4. **Public Service Oklahoma/AEP, 2014 Wind Contracts of 600 MW –**
 - ▶ **With these long-term [PPAs] we're adding a significant amount of wind energy, bringing more diversity to our fuel mix, and doing so at a price that will provide substantial savings for our customers - Stuart Solomon, PSO/AEP President and CEO**

ENERGY EFFICIENCY ECONOMICS

From ACEEE (2014)

Net Jobs	4790
EE Cumulative Costs (millions)	3,800
EE Cumulative Savings from avoided electricity purchases (millions)	5,900
Average costs per MWh saved	5.1 c/kwh

Any analysis of EE costs that fails to account for cumulative savings from avoided electricity purchases, and also T&D savings, labor cost savings is flawed.

Similarly, RE analyses should account for both low electricity prices and also the opportunity benefits of keeping ratepayer dollars closer to home.

CONCLUSIONS

1. Costs of inaction on climate change are great with Americans already spending \$300 per person per year on federal disaster programs.
2. Five large AR coal plants are responsible for 85% of the state's power plant carbon emissions. Average age of oldest three 49 years in 2030
3. Arkansas ranks near the top in terms of per capita spending to import coal from other states, at nearly \$100 per person per year.
4. Renewable energy is available at or below coal and NG variable generations costs, in the 2 to 5 cents/kwh range.
5. Boosting energy efficiency programs will conserve resources and save Arkansas families and businesses money at or below 5 c/kwh.
6. Sierra Club stands ready to work with all interested parties on a path forward that makes sense for customers, protects workers, families and businesses, and also gets significant carbon reductions.