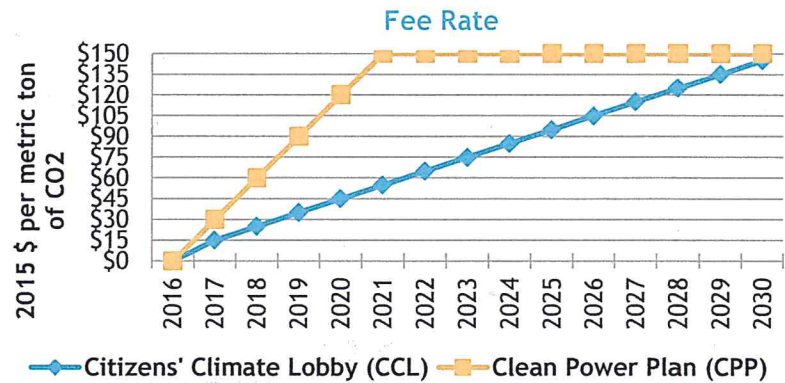


The Economic, Demographic, Fiscal, and Emissions Implications of a Carbon Fee in Arkansas

This study is focused on **how a carbon fee in Arkansas would help it comply with the strictures of the EPA's Clean Power Plan (CPP) to reduce the carbon dioxide emitted from existing power plants.** It examines the potential economic, demographic, fiscal, and emissions impact of a fee on carbon dioxide in Arkansas.

The final rule has explicitly allowed a carbon fee as a means of complying with the Clean Power Plan (p. 899). If states do decide to adopt a carbon fee as their compliance mechanism, they will also need to put forward a back-up option in case their primary plan does not result in the promised emissions reductions... A carbon fee could match or even exceed the EPA's emission reduction targets as supported by data from the Energy Information Agency (pp. ES-5, MT-34).

In order to perform a sensitivity analysis and cap the theoretically unlimited number of rates and scenarios, we have focused on two rate algorithms. The first is the rates favored by CCL in their proposed national legislation. The rate begins at **\$15 per metric ton** of carbon dioxide in the first year followed by a gradual **escalation of \$10 per year** through at least the 2030s. It culminates at \$145 per metric ton in 2030 here (the sunset of this analysis). The second line is for a rapid escalation of the carbon fee, starting at **\$30 per ton and \$30 per year thereafter**, until it plateaus at \$150 per ton in 2021. Its figures derive from internal testing on what rates of consumer carbon fees in the electricity sector **would lead to full compliance with all the CPP interim goals in the state of Arkansas.**

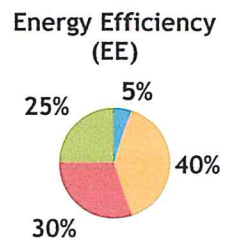
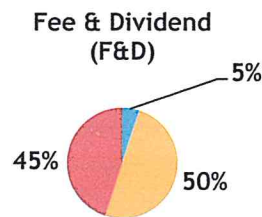


*Clean Power Plan (CPP) signifies fee rate \$30/ton with \$30/escalation rate which complies with all Clean Power Plan interim goals.

The revenues from the carbon fee simulations examined a dividend system to households and employers as well as a second choice to send 25% of the funds to energy efficiency programs in the early years to help with CPP compliance. **All cases increase the total number of jobs and the size of the economy in Arkansas—mostly by reducing imported fossil fuels and through the encouragement of a more labor-intensive industry mixture and added income to households.** The carbon fee also reduces emissions by discouraging the consumption of fossil fuels. All scenarios under examination comply with the goals of the CPP by 2030, and one of them, **below in lime green**, manages all the intermediate goals.

Revenue Recycling

- **Administration and Overhead** – An assumed 5% cost to the state for the collection of the fee and the redistribution of the funds back into the state economy
- **Rebates to Households** – Monthly checks or direct deposits to individuals and households in Arkansas to rebate revenues back to the public
- **Rebates to Employers** – Similar to the rebate to households though paid to employers in the state (either public sector or private sector, nonprofit and for profit alike) either as a monthly rebate check or through the state tax system
- **Energy Efficiency Programs** – Funds appropriated by the state towards various energy efficiency programs to further reduce energy demand and emissions



The F&D case always follows the distribution on the left. The EE case follows the distribution of the funds on the right from **2017 to 2021 before transitioning into the distribution from the F&D case from 2022 forward—four total of 2x2 (rates, recycling).**

Fee Coverage

	F&D	EE
CCL	Case (1)	Case (2)
CPP	Case (3)	Case (4)

The rates (on the y-axis, the row headers) and the revenue recycling options (on the x-axis, the column headers) combined create four cases. Their numbers are 1, 2, 3, and 4 above, and the colors (from blue to green) stay consistent through the rest of this report.

Employment

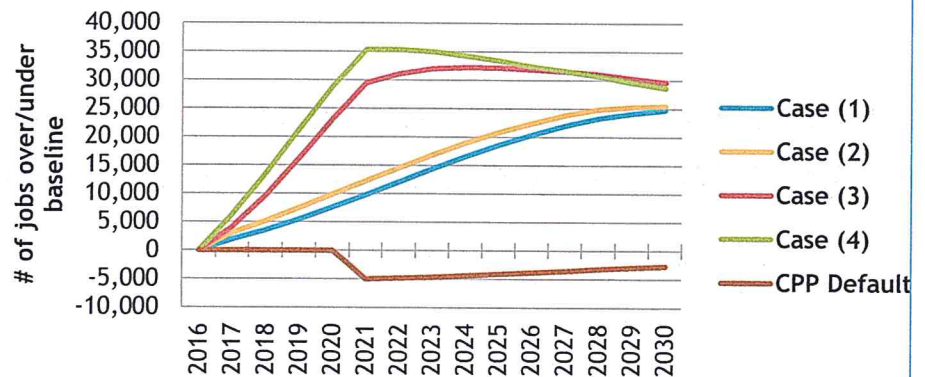
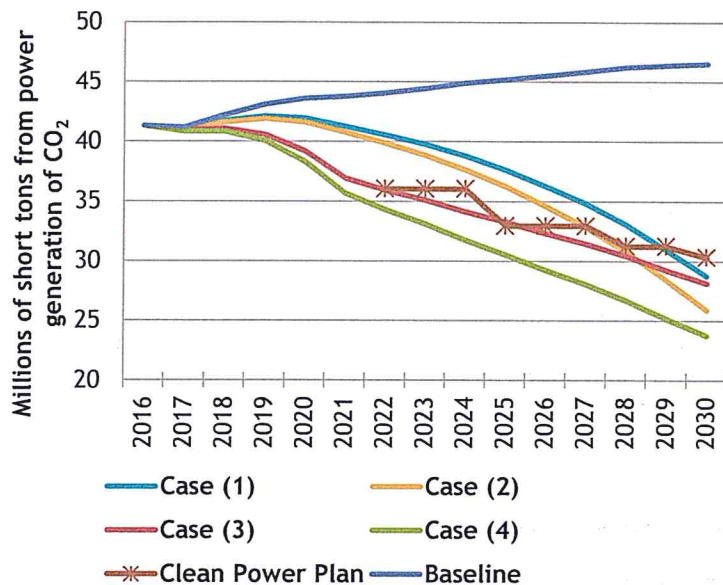


Figure 1.1 – All carbon fee cases (the blue down to green, not including brown) show a net increase in the number of jobs in the state. The default 10% increase in electricity prices has a slightly negative influence on the Arkansas state economy.

Carbon Dioxide Emissions (from electricity demand)

Figure 1.24 – This result looks only at emissions from power generation implied by electricity demand in the state to meet the Clean Power Plan. The cases and baseline are in their usual colors while the CPP limits are in brown with asterisks.



For the mass-based target, the final rule for Arkansas requires the targets graphed on the brown line.¹ Absent any policy on carbon dioxide emissions, Arkansas follows the general curve of the WSC region again in this sector. All policy designs cause a reduction in emissions, though not all comply with the intermediate requirements of the CPP. Case (1) and case (2) comply with the final goals in 2030, reducing emissions below 30.3 million short tons in the last year. Case (3) comes close to hitting all of the intermediate targets, though it does exceed the goal for 2025 without any ramping of the goals between 2024 and 2027. The green line for case (4), conversely, does meet all the intermediate goals and the final mass-based rule under the CPP for the Natural State. The above presumes that demand for electricity in the Arkansas region

is the best proxy for emissions from the state, that price elasticity is an adequate tool for the prediction of demand from the AEO baseline, and that reducing demand for electricity from Arkansas' households and businesses would reduce stack emissions in this manner. The emissions reductions here would be considerable but could be the topic for future power modeling.

¹ <<http://www3.epa.gov/airquality/cpptoolbox/arkansas.pdf>>

Main Take Aways

Economic

- 20,000 to 30,000 additional jobs over the baseline scenario
- Increased GSP and real disposable personal income (RDPI)

Emissions

- Reduction of 20 to 30 million metric tons per year total
- Power emissions approach or are below CPP regulations

Budgetary

- \$500 million to \$1 billion in the first year, \$4 billion long-term
- Monthly rebate to households and employers over \$200 per month

Demographic

- The long-term population of the state increases with fee
- Attracted by stronger labor market and availability of dividends

- A strong economy and environmental quality are not mutually exclusive functions
 - In fact, when understood as “mundane” fiscal policy, environmental measures might have some positive effects across the economy
 - **Reduced fossil fuel imports**
 - **Encouragement of localized, labor-intensive industries**

The Arkansas chapter of Citizens Climate Lobby (CCL) engaged with Regional Economic Models, Inc. (REMI) in Washington, DC to perform this work.

3 | Summary of The Economic, Demographic, Fiscal, and Emissions Implications of a Carbon Fee in Arkansas

Email cclofark@gmail.com for more information

