

EFFECTS OF GLOBAL WARMING ON THE STATE OF ARKANSAS

GLOBAL WARMING WILL HURT ARKANSAS

The vast majority of the world's leading scientists now agree that human activities may lead to substantial impacts on the global climate. Consensus estimates warn of an average increase in temperatures of between 2 and 10 degrees Celsius over the next century, resulting in more severe drought, rising sea levels, shifting seasons and increased disease.

In Arkansas, this could lead to a number of problems. Projections show temperature increases of 2-3 degrees year-round. These higher temperatures and more frequent heat waves could increase

IMPACTS ON ARKANSAS

- More frequent heat waves
- Increased illness from insect-borne diseases
- Intense rainfall causing soil erosion
- Eastern farmlands at risk

heat-related deaths and illnesses from insect-borne diseases like malaria and West Nile virus. With substantial agricultural resources, Arkansas is particularly sensitive to changes in climate. Water systems in the state are already feeling the pressure of increased demand, as wells need to be dug deeper and the need for irrigation increases. While climate change could bring increased rain to the state, with models predicting a 25% increase in summer precipitation, the cruel irony is that it may do more harm than good. Intense rainfalls would help recharge the state's water supply, but would also lead to increased soil erosion and flooding, a particular problem for eastern farmlands, much of which sit on floodplains.

THE "CLIMATE STEWARDSHIP ACT"

The Climate Stewardship Act (CSA), introduced in the Senate by Senators McCain and Lieberman, and in the House by Representatives Gilchrest and Olver, is based on a similar and highly successful program implemented by the Clean Air Act which has led to large reductions in acid rain-causing pollution with a minimum of economic costs. The Act would create a market-based cap-and-trade system to reduce emissions of carbon dioxide (CO₂) and other heat-trapping gases from electricity generators and other large industrial and commercial sources, covering 85% of the nation's emissions.

Under a cap-and-trade system, a fixed number of emissions allowances (permits) are distributed to emitters. One permit allows the holder to emit one metric ton of CO₂ or an equivalent amount of other gases. Companies that

can run their business without using all their allowances can sell their surplus to companies whose actual emissions exceed their allowances. Under such a system, emissions are reduced by those who can do so at the lowest cost, thus minimizing economic impacts. Cap-and-trade systems, such as the one proposed in the Act, make reducing pollution a potential source of profit for companies, giving them an incentive to devise new and even cheaper ways to cut their emissions.

CLIMATE STEWARDSHIP ACT

- Cap and Trade
- Similar program reduced acid rain by 50% at 1/10 the estimated cost
- Lowest cost solution
- Protects rural electric co-ops

Beginning in 2010, the CSA would cap emissions at their 2000 levels. To help meet this target, the Act contains flexible mechanisms allowing covered entities to meet their reduction targets through a variety of ways, including investments in clean energy projects outside the U.S., international trading of emission credits and storage of carbon in trees and soil.

ECONOMIC IMPACTS

Estimates show that the benefits of the CSA would outweigh its costs by a ratio approaching 2:1. While the Act's provisions would impose about \$150 billion (net

COST-EFFECTIVE FOR THE UNITED STATES

- \$250 billion benefits at cost of \$150 billion
- 500,000 new jobs by 2015

present value) in emissions reduction costs, it would generate \$250 billion worth of benefits nationwide in the form of increased energy efficiency, reduced energy expenditures and economic growth through 2025. Nationwide, the Act would create over 500,000 jobs by 2015. Our analysis of the job impacts is based on research from the Tellus Institute (www.tellus.org), a nonprofit research and consulting organization, which studied the effect of the Act's cap-and-trade program as well as energy efficiency and other technology incentive programs that would be funded through the Act.

Like the nation as a whole, our analysis shows that the net impact of the Act on jobs in Arkansas is positive. By 2015 over 4,300 more new jobs would be created over a business-as-usual approach, growing to 7,000 new jobs by 2025. The gains would be spread throughout the state's economy, and while the utility sector could suffer some

job losses statewide, these would be more than offset elsewhere through growth in construction, metals and other industries. In addition to these benefits, Arkansas stands to gain in a number of other ways. For example, methane is a potent greenhouse gas, about 23 times more potent than CO₂. Chicken and hog farms produce a substantial amount of waste, which can release methane into the atmosphere. Anaerobic digestion processes can convert animal waste to bio-gas which, in turn, can be used to produce steam or electric energy for use on the farm or sale to others. At the same time, by reducing their methane emissions, chicken and hog farmers could sell their emission reductions to covered emitters, yielding both savings in energy costs and profits from emission sales. We estimate Arkansas could create over \$2 million in emission sales by converting animal waste into useful energy.

IMPACTS ON ARKANSAS

- Net increase of 4,300 jobs by 2015
- Chicken and hog farms benefit by converting methane to electricity & make over \$2 million from emission reduction credits

Nationally, not all sectors of the economy would benefit. Reducing CO₂ and other emissions would require reduced use of fossil fuels where carbon cannot be captured, leading to economic contraction in those sectors. Increasing energy efficiency, while providing substantial benefits to both residential and commercial energy consumers, leads to reduced demand for electricity, posing some costs on that sector as well. Overall, however, these costs are more than offset by gains in other sectors, like construction, which would see a substantial increase in demand for new projects spurred by the increased implementation of renewable energy and energy-efficient technologies. The manufacturing sector would also see increased employment with increased demand for energy-efficient machinery and renewable energy components.

Arkansas' consumers also stand to benefit from the CSA. The energy efficiency provisions included in the Act will generate substantial savings in the form of reduced energy expenditures. While energy prices will increase moderately as a result of the pollution reduction requirements in the Act, these costs will be offset by reduced consumption and rebates of revenue raised by allowance sales. These rebates are targeted to those households that can least afford energy cost increases. Energy savings for households and businesses will free up substantial resources that can be reinvested in state and local economies.

OTHER BENEFITS

- Consumers save through energy efficiency improvements
- Cleaner air through cleaner, more efficient electricity generation

There are some non-economic benefits as well. While Arkansas currently does not have a substantial air quality problem, more than half of the electricity consumed in the state comes from coal-fired power plants, located mostly in-state. Coal-fired power plants emit fine particles, which trigger respiratory illnesses and increase mortality rates, and sulfure dioxide and nitrogen oxides, both of which are known precursors of acid rain, which can damage forests, water and wildlife both within the state and across state borders. Coal-fired power is also a substantial source of mercury, a known human neurotoxin. The CSA would help advance cleaner, more efficient power production, such as renewable energy and clean coal technologies like coal gasification (IGCC) with carbon capture and storage. Such technologies will reduce global warming pollution as well as address these other environmental problems that tend to disproportionately affect the poor, very young, elderly and sick.

DON'T UNDERESTIMATE ENTREPRENEURIAL INNOVATION

As the Climate Stewardship Act is debated, a handful of naysayers will undoubtedly claim that doing anything to reduce global warming pollution will be economically disastrous. A close look at these dire predictions will reveal that they have little merit. For example, one such prediction is based on a 1998 study of the Kyoto Protocol, a substantially different and more stringent proposal than the Climate Stewardship Act. The study was written by the same "hired guns" that produced the roundly discredited report claiming to show enormous economic benefits from opening the Arctic National Wildlife Refuge to oil drilling. Not surprisingly, both these studies were funded by the oil industry.

Studies predicting economic disaster from environmental protection invariably underestimate the ability of American businesses to innovate. When the Clean Air Act Amendments were debated in 1990, industry lobbyists predicted that the law would turn America into a third rate economic power. Not only have businesses survived the Clean Air Act, but we have thrived, finding new ways to address old problems. Our leaders need to have confidence in our ability to innovate rather than trying to hide from problems. We have done it before, and we will do it again, but only if clear standards and appropriate incentives are established by legislation such as the Climate Stewardship Act.

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