ENVIRONMENTAL ENTREPRENEURS

REDEFINING PROGRESS

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EFFECTS OF GLOBAL WARMING ON THE STATE OF TENNESSEE

GLOBAL WARMING WILL HURT TENNESSEE

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 over the next century, leading to more severe drought, rising sea levels, shifting seasons, and increased disease.

IMPACTS ON TENNESSEE

- More frequent heat waves
- Increased illness from insect-borne diseases
- Intense rainfall causing soil erosion and flooding

In Tennessee, 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 heat-related deaths and illnesses from insect-borne diseases such as malaria and West Nile virus. In Memphis, which has been particularly susceptible to heat-related deaths, a temperature increase in this range could increase fatalities by 60%. Human cases of West Nile Virus have already been reported in all regions of the state. Increased temperatures would make the state more habitable for mosquitoes that carry the virus, likely leading to increased infections. With substantial agricultural resources, Tennessee is particularly sensitive to changes in climate. The majority of farmland in the state is not irrigated, so that increased soil temperatures and evaporation could require Tennessee farmers to invest substantial resources in irrigation systems. This increased pressure on surface water supplies may come at the same time that water resources may be shrinking. Additionally, increased temperatures could increase the frequency and intensity of heavy rainfalls leading to increased flooding and soil erosion, which is already a problem in parts of the state.

THE "CLIMATE STEWARDSHIP ACT"

The Climate Stewardship Act (CSA), introduced by Senators McCain and Lieberman is based on a similar and highly successful program implemented in 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 and other heat-trapping gases from electricity generators and other large industrial and commercial sources.

Under a cap and trade system, a fixed number of emissions allowances are distributed to emitters. One permit allows the holder to emit one metric ton of carbon dioxide 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 it at the lowest cost, thus minimizing economic impacts. Cap-and-trade systems, such as the one proposed by McCain and Lieberman, 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 and going forward, the Act would cap emissions at their 2000 levels. However, emissions could increase up to 15% beyond the cap if companies purchase "offsets" from other sources, such as "sequestration" credits from farms which increase carbon storage in soils and vegetation.

ECONOMIC IMPACTS

The benefits of the Act outweigh its costs by a ratio approaching 2:1. While the Act's provisions would impose about $150 billion in emissions reduction costs, it would generate $250 billion worth of benefits nation-wide in the form of increased energy efficiency, reduced energy expenditures and economic growth through 2025 (net present value). Nationwide, we estimate that the Act would create over 100,000 jobs by 2015. Our analysis is based on research at the Tellus Institute—a non-profit research and consulting organization (http://www.tellus.org)—which studied the impact of the Act's cap-and-trade program as well as energy efficiency programs that would be funded by the Act.

COST-EFFECTIVE FOR THE UNITED STATES

- $250 billion benefits at cost of $150 billion
- 100,000 new jobs by 2015

Like the nation as a whole, a preliminary analysis shows that the impacts for Tennessee are also largely positive. While the utility and coal mining sectors together would suffer losses of about 300 jobs statewide, these would be more than offset elsewhere, leading to a net increase in employment of about 2000 jobs. The gains would be spread throughout the economy; though the construction and metals industries would particularly benefit.

Nationally, not all sectors of the economy would benefit. Reducing carbon dioxide and other emissions would require reduced use of fossil fuels, 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 energy efficient technologies. The manufacturing sector would also see increased employment with increased demand for energy efficient machinery and renewable energy components like wind turbines.

IMPACTS ON TENNESSEE

- 2,300 new jobs in construction, metals & other sectors (but 300 jobs lost in coal and utilities)
- Increased demand for agricultural products for bio-energy
- Consumers save through energy efficiency improvements

Tennessee consumers stand to benefit from the Act as well. 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. Energy savings for households and businesses free up substantial resources that can be reinvested in state and local economies.

There are other, non-economic benefits as well. All of Tennessee's major cities as well as the Great Smoky Mountains National Park have a substantial air quality problem. There are a number of factors contributing to this, many of which would be reduced under the CSA. Emissions from both on and off road vehicles would be reduced through greater fuel efficiency and cleaner burning fuels promoted by the act. About two-thirds of the state's electricity currently comes from coal-fired power plants located in the state. Coal-fired electricity results in emissions of sulfur dioxide and nitrogen oxides, both of which are known precursors of fine particles, which trigger respiratory illnesses and increased mortality rates, and 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.

OTHER BENEFITS

- Cleaner air through reduced burning of coal
- Biomass electricity could serve 67% of Tennessee's homes

By reducing Tennessee's reliance on coal, the Act can help reduce these other problems as well.

In addition, Tennessee stands to gain in a number of other ways. For example, the CSA would allow covered entities to buy emissions allowances from forest and agricultural carbon sinks, which could provide an economic boost to the state's agricultural and forestry sectors. Tennessee also has abundant resources for celluosic ethanol, mainly from agricultural and forestry wastes in the immediate future and dedicated energy crops in the long run. Additionally, the state has excellent potential for biomass electricity, with enough resources to provide power to about two-thirds of Tennessee's homes. The CSA would boost incentives nationwide for renewable fuel production, providing a boost to Tennessee agriculture.

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. Some are already making the rounds with their dire predictions. A close look at these predictions will reveal that they have little merit. For example, one such prediction is based on a 6 year-old 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 (ANWR) 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 to solve new problems. We do this every day in reaction to global and local business conditions. Our ability to innovate is what makes the American economy the strongest in the world. 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. Climate change is a problem that needs to be addressed. 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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