ENVIRONMENTAL ENTREPRENEURS

REDEFINING PROGRESS

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EFFECTS OF GLOBAL WARMING ON THE STATE OF FLORIDA

GLOBAL WARMING WILL HURT FLORIDA

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, leading to more severe drought, rising sea levels, shifting seasons, and increased disease.

In Florida, this could lead to a number of problems. Projections show temperature increases of 3-4 degrees Fahrenheit year-round. Higher temperatures and more frequent heat waves could increase heat-related deaths and illnesses from insect-borne diseases like malaria, West Nile virus, and dengue fever. Warmer conditions would also increase the frequency algal blooms along the coast, damaging fish populations with adverse impacts both on human health and on local economies. Sea levels could rise 18-20 inches along the Florida coast with substantial impacts on human populations and ecologically sensitive areas including the Everglades and Big Cypress Swamp. Coastal beaches and wetlands would be threatened, and drinking water supplies would be exposed to increased salt water contamination Coastal areas could also face increased damages during hurricanes and other severe weather events as higher sea levels increase the danger form storm surges. Higher temperatures would also increase the already high rate of evaporation in the state, putting increased stress on water systems that already face increasing and competing demands from drinking water needs, agriculture, and ecosystems.

IMPACTS ON FLORIDA

- More frequent heat waves
- Increased illness from insect-borne diseases
- Increased damages from hurricanes
- Rising sea levels

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 in the Clean Air Act, which has led to large reductions in acid rain-causing pollution with a minimum of economic costs. The CSA 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 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 it at the lowest cost, thus minimizing economic impacts. Cap-and-trade systems make reducing pollution a potential source of profit for companies, giving them an incentive to devise new and cheaper ways to cut 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 various flexible mechanisms allowing companies 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 the 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 present value) in emissions reduction costs nation-wide, it would generate $250 billion worth of benefits in the form of increased energy efficiency, reduced energy expenditures and economic growth through 2025. Nationwide, we estimate that the Act would create over 500,000 jobs by 2015. Our analysis is based on research from the Tellus Institute (www.tellus.org), a nonprofit research and consulting organization, 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
- 500,000 new jobs by 2015

Like the nation as a whole, our analysis shows that the net impact of the Act on jobs in Florida is also positive. By 2015 over 29,000 more new jobs would be created over a business-as-usual approach, growing to almost 46,000 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 and other industries.

Florida stands to gain in other ways as well. The state has substantial capacity for biomass production, including agricultural wastes and dedicated feedstocks. With a potential capacity of nearly 14 billion kilowatt hours per year, this would be enough to supply power to about 1.3 million households. In addition, Florida uses more oil for electricity generation than any other state, accounting for 20% of generation compared to a national average of about 3%. With high oil prices, the cost of producing electricity for Florida's homes and businesses is rapidly increasing and is highly dependent on world oil markets. The CSA would promote programs to help diversify electricity sources, helping shield the state's economy from volatile swings in oil prices.

IMPACTS ON FLORIDA

- Net increase of 29,000 jobs by 2015
- Consumers benefit from energy efficiency improvements

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 and manufacturing, which would see a substantial increase in demand spurred by the increased use of renewable energy technologies and energy-efficient buildings and equipment. The manufacturing sector would also see increased employment with increased demand for energy-efficient equipment.

The CSA will also create incentives to accelerate the deployment and development of electricity generation from gasifying coal (integrated gasification combined cycle, IGCC) combined with technologies that capture the CO2 and store it permanently in geologic repositories. While IGCC is a proven and available technology and has been shown to be substantially cleaner than conventional coal-fired power plants, it has yet to gain significant market share. Current government policies are inadequate to deliver economically attractive systems. To accelerate the deployment of IGCC and further development of carbon capture and storage systems, along with the jobs they can create, in the time frame needed to address global warming, we must adopt reasonable, binding measures to limit global warming emissions. Only then will the private sector have a business rationale for prioritizing investment in this area.

OTHER BENEFITS

- Potential revenue from biofuels
- Cleaner air through more efficient electricity generation

Florida's 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 from the revenue raised by allowance sales. Energy savings for households and businesses will free up substantial resources that can be reinvested in state and local economies.

While Florida currently does not have a substantial air quality problem, about 60% of the electricity generated in the state comes from oil and coal-fired power plants. These power plants emit fine particles, which trigger respiratory illnesses and increased mortality rates, and sulfur dioxide and nitrogen oxides, known precursors of acid rain, which can damage forests, water and wildlife. 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 IGCC. Such technologies will reduce global warming pollution and address these environmental problems.

DON'T UNDERESTIMATE ENTREPRENEURIAL INNOVATION

As the CSA 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 is based on a 1998 study of the Kyoto Protocol, a substantially different proposal than the CSA. 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. 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. 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. Climate change is a problem that needs to be addressed. Our leaders need to have confidence in our ability to innovate.

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