

EFFECTS OF GLOBAL WARMING ON THE STATE OF NEW HAMPSHIRE

GLOBAL WARMING WILL HURT NEW HAMPSHIRE

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 New Hampshire, this could lead to a number of problems. Projections show temperature increases of 4-5 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, which was first detected in both birds and humans in New Hampshire in 2003. Increased temperatures would make the state more habitable for mosquitoes that carry the virus, likely leading to increased infections.

A temperature increase in this range would raise average summer temperatures in Nashua up to New York City's summertime levels. Given the state's agricultural and forestry resources, New Hampshire is particularly sensitive to changes in climate. Warmer temperatures would force a northward migration of the state's hardwood forests. This could eliminate sugar maples from the state, with the attendant economic losses in the syrup industry, and in tourism, as the state's fall colors would diminish with the maple population. Additionally, increased temperatures could also deprive state forests of their natural defense against various pests currently unable to winter in the state. Rising temperatures could also cause serious adverse impacts on New Hampshire dairy farmers who may find it necessary to install costly air conditioning units to protect their livestock. Cold-water fish populations, such as brook and rainbow trout, would diminish, and lobster populations are likely to migrate further northward in search of suitable habitat.

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 that has led to large reductions in acid rain-causing pollution with a minimum of economic costs. 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.

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 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.

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

The benefits of the CSA 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 nationwide, it would generate \$250 billion worth of benefits 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, a nonprofit research and consulting organization (www.tellus.org), 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 New Hampshire is also positive.

CLIMATE STEWARDSHIP ACT

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

IMPACTS ON NEW HAMPSHIRE

- More frequent heat waves
- Increased illness from insect-borne diseases
- Elimination of maple trees
- New York summer heat in Nashua

COST-EFFECTIVE FOR THE UNITED STATES

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

By 2015, more than 2,400 new jobs would be created over a business-as-usual approach, growing to almost 4,000 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, manufacturing and other industries.

IMPACTS ON NEW HAMPSHIRE

- Net increase of 2,400 jobs by 2015
- Dairy farms benefit by converting waste to energy & emission reduction credits
- Increased demand for agricultural and forest waste

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 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.

New Hampshire 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.

In addition, New Hampshire 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. The state would also benefit from increased demand for cellulosic ethanol, which can be produced from agricultural and forestry wastes. Additionally, the state has excellent potential for biomass electricity, with enough resources to provide power to over 80% of New Hampshire's homes. The state's many dairy farms stand to gain as well, by using anaerobic digesters to handle their livestock waste.

Digesters can convert the waste to bio-gas, which can be used

OTHER BENEFITS

- Consumers save through energy efficiency improvements
- Biomass electricity could serve 80% of New Hampshire's homes

to produce steam or electrical energy for use on the farm or sold to other users. At the same time, by reducing their methane emissions, farmers could sell their emission reductions to covered emitters, yielding both savings in energy costs and profits from emission credit sales.

New Hampshire has a history of environmental leadership, pioneering efforts to address acid rain and air toxics, and was among the first states to regulate carbon emissions from electricity generators. Under the Clean Power Act of 2002, New Hampshire generators are on track to meet emission reduction targets well below those in the CSA. As a result, New Hampshire has a head start on the rest of the nation in reducing carbon emissions. Were the CSA to become law, this would translate directly into an economic advantage for the state, as local producers will have had several years of experience in developing more efficient production practices.

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 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 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.

E2: ENVIRONMENTAL ENTREPRENEURS

111 Sutter Street, 20th Floor
San Francisco, CA 94104
TEL (415) 875-6100 FAX (415) 875-6161
www.e2.org

REDEFINING PROGRESS

1904 Franklin Street, Suite 600
Oakland, CA 94612
TEL (510) 444-3041 FAX (510) 444-3191
www.redefiningprogress.org
info@redefiningprogress.org