

## **EFFECTS OF GLOBAL WARMING ON THE STATE OF NEW YORK**

### **GLOBAL WARMING WILL HURT NEW YORK**

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 cases of disease.

In New York, this could lead to a number of problems. Projections show temperature increases of about 4 degrees year-round. These higher temperatures and more frequent heat waves could increase heat-related deaths and illnesses from insect-borne diseases like malaria and West Nile virus. West Nile was detected in all but 3 of New York's counties in 2003, with over 70 human cases reported. Increased temperatures would make the state more habitable to mosquitoes that carry the virus, likely leading to increased human infections.

Temperature increases in the projected range would raise average summer temperatures in New York City to Atlanta's levels, while more than doubling heat-related deaths. Rising temperatures would also increase ground level ozone, further worsening air quality in metropolitan areas.

With substantial agricultural resources, New York is particularly sensitive to variations in the weather. The vast majority of the farmland in the state is not irrigated, relying instead on surface waters. As soil temperatures and evaporation rates rise, New York farmers may be required to invest substantial sums in irrigation systems.

While climate change could bring a 10-20% increase in precipitation, the cruel irony is that it may do more harm than good. The increased rain is likely to come in the form of more frequent intense rainfall, leading to increased flooding, eutrophication, and soil erosion.

Fish populations in the Great Lakes and other bodies will also suffer as surface water temperatures rise and oxygen supplies decrease. Lake Erie, the shallowest of the Great Lakes, would be particularly susceptible to larger and more frequent dead zones, algal blooms and summerkill. The state's recreational industry would also suffer with shortened seasons for winter sports, while the state's maple forests would retreat northward, diminishing the state's fall colors.

#### **IMPACTS ON NEW YORK**

- Increased illness from insect-borne diseases
- Reduced water quality in the Great Lakes
- Increased heat-related deaths
- Atlanta summer heat in New York City

### **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. The Act would create a market-based cap-and-trade system to reduce emissions of carbon dioxide (CO<sub>2</sub>) 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 CO<sub>2</sub> 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 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 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 carbon storage in trees and the soil.

### **ECONOMIC IMPACTS**

Estimates show that the benefits of 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 nationwide, it would generate \$250 billion worth of benefits in the form of increased energy efficiency, reduced energy expenditures and economic

#### **CLIMATE STEWARDSHIP ACT**

- Cap and Trade
- Similar program reduced acid rain by 50% at 1/10 the estimated cost
- Lowest cost solution
- Promotes renewable energy and energy efficient technologies

#### **COST-EFFECTIVE FOR THE UNITED STATES**

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

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](http://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 CSA on jobs in New York is positive. By 2015, 36,000 new jobs would be created over a business-as-usual approach, growing to almost 55,500 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. In addition, New York ranks 15<sup>th</sup> in the nation in wind energy potential. Wind potential is estimated to be over 60 billion kilowatt hours, or more than enough to power every household in the state in 2000. While the state has already begun to tap into this potential, the vast majority of wind resources remain untouched. New York has the wind capacity, experience and manufacturing infrastructure to become a natural home for a burgeoning wind industry. As the renewable energy incentives in CSA increase demand for wind power across the nation, the state could see an upsurge in the metal, machinery and other manufacturing sectors to build the necessary wind turbines and other components.

In addition, New York 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 and, in the long run, from dedicated energy crops. 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 to produce steam or electrical energy for use on the farm or sold to others. At the same time, by reducing their methane emissions, farmers could sell emission reductions in the trading market created by CSA, yielding both savings in energy costs and profits from emission credit sales.

Nationally, not all sectors of the economy would benefit. Reducing CO<sub>2</sub> and other emissions would require reduced use of fossil fuels where carbon cannot be captured, leading to economic contraction in those sectors. Increasing energy ef-

iciency, 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.

New York's 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 will free up substantial resources that can be reinvested in state and local economies.

## **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.

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.

### **IMPACTS ON NEW YORK**

- Net increase of 36,000 jobs by 2015
- Increased demand for agricultural products for bio-energy
- Fostering local production of wind power components

### **OTHER BENEFITS**

- Consumers save through energy efficiency improvements
- Wind energy could produce 62 billion kilowatt hours/year

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