

# State Greenhouse Gas Programs: An Economic and Scientific Analysis

## Impact on Pennsylvania

### Pennsylvania's state legislature is considering legislation to reduce the state's greenhouse gas emissions.

State greenhouse gas programs seek to reduce man-made emissions of gases (typically carbon dioxide) thought to contribute to "global warming," a possibly destabilizing warming of the Earth's atmosphere. Pennsylvania has mandated utilities use renewable resources to generate between 0.2 and 2.0 percent of power by 2001. In 2001-02, the Pennsylvania legislature directed \$250,000 toward a study of greenhouse gas emission reduction strategies. Proposed legislation that would have required state agencies to inventory their greenhouse gases and plan to reduce emissions, and that would have required electric companies to track CO2 emission characteristics as part of a multi-pollutant program, failed to pass.

### Pennsylvania would need to reduce its greenhouse gas emissions by 23.91 million metric tons carbon equivalent (mmtce) to meet the goal set under the Kyoto Protocol.

The Kyoto Protocol, negotiated by the Clinton-Gore administration but not submitted to the U.S. Senate for approval and rejected by President George W. Bush, would have required the U.S. to reduce greenhouse gas emissions to 7 percent below 1990 levels by 2008-2012. Pennsylvania's greenhouse gas emissions totaled 76.0 mmtce in 1990. If no state actions are taken, Pennsylvania's greenhouse gas emissions are expected to reach 94.59 mmtce by 2010. Reducing emissions to 7 percent *below* 1990 levels would therefore require a reduction from baseline levels in 2010 by 23.91 mmtce.

### Pennsylvania state government would have to spend at least \$1.3 billion per year to attain this goal.

New Jersey has spent \$55 per ton to reach its greenhouse gas reduction goal of 3.5 percent below 1990 levels. Since the goal is modest and the state has been able to increase reliance on nuclear power to meet this goal, \$55/ton is likely to be the *minimum direct cost to a state government* of operating a comprehensive greenhouse gas reduction program. Multiplying the number of tons Pennsylvania needs to cut by \$55 reveals its state government would have to spend \$1.3 billion *each year* to meet the goal.

### Pennsylvania state government would also lose \$4.7 billion each year in tax revenue as a result of slower economic growth.

Reducing emissions means higher energy prices and slower economic growth. This means less revenue to state treasuries. In 1998, WEFA Inc., a respected consulting firm, produced state-by-state estimates of the impact on state budgets in the year 2010 of a *national* program to reduce emissions to 7 percent below 1990 levels. This is the minimum credible estimate since it assumes Pennsylvania's program would not have a more negative effect on the state's business climate than would a national program. Converting WEFA's estimates into 2001 dollars reveals the annual loss to the state of Pennsylvania treasury would be \$4.7 billion.



#### Pennsylvania Facts

76.0 mmtce	GHG emissions in 1990
94.59 mmtce	Projected GHG emissions in 2010
23.91 mmtce	Reduction in GHG emissions required in 2010
\$1.3 billion	State budget cost to achieve reductions
\$4.7 billion	Annual revenue loss for state treasury
\$6.0 billion	Total cost to state government
\$19.4 billion	State government 2001 revenues
30.9%	Cost of GHG program as percent of state 2001 revenues
\$5.4 billion	Annual cost of a national program to consumers and businesses
\$54.0 billion	Annual cost of a state program to consumers and businesses
4.8 million	Number of households in Pennsylvania in 2000
\$1,130	Annual cost of a national program per household
\$11,305	<b>Annual cost of a state program per household</b>

## The greenhouse gas program would consume 30.9 percent of the entire Pennsylvania state budget.

General fund revenues for the Pennsylvania state government in 2001 totaled \$19.4 billion. Combining the direct cost of the greenhouse gas program with lost revenues to the state due to slower economic growth reveals the total annual cost to the government would be \$6.0 billion. This is 30.9 percent of total state government revenues in 2001.



## A national greenhouse gas program would cost Pennsylvania consumers and businesses \$5.4 billion a year due to higher energy costs and lost wages.

The number of tons of greenhouse gas emissions that need to be cut can be multiplied by \$226, the average of 12 estimates by respected researchers and the Energy Information Administration (expressed in 2001 dollars) of the cost to reduce emissions to 7 percent below 1990 levels by 2010. This is the *minimum cost to state consumers and businesses* of a greenhouse gas program, since it assumes a Pennsylvania program would be just as efficient (in cost per mmTCE avoided) as would be a national program.

## A state greenhouse gas program would probably cost consumers and businesses in Pennsylvania *ten times* as much: \$54.0 billion.

A Pennsylvania program, like other state-only efforts, is likely to be much less efficient than a national program. States are unable to take advantage of low-cost opportunities to reduce emissions outside their borders or market-based policies that require national implementation. Moreover, for every ton of greenhouse gases Pennsylvania avoids, other states and countries would *increase* their emissions by .5 tons, a 50 percent “leakage.” Together, these estimates suggest Pennsylvania’s program would cost *ten times as much* as a national program. The most likely cost to consumers and businesses in Pennsylvania, then, would be \$54.0 billion.

## A state greenhouse gas program could cost the average household in Pennsylvania \$11,305 a year.

The likely cost of the Pennsylvania greenhouse gas program to consumers and businesses – \$54.0 billion – can be divided by the number of households in the state to reveal the cost per household of a typical greenhouse gas program. (The actual costs would vary depending on choices made by policymakers.) There were 4.8 million households in Pennsylvania in 2000, so the cost per household could be \$11,305.

### The Cost:

Reducing greenhouse gases to 7 percent below 1990 levels could cost the state government of Pennsylvania \$6.0 billion a year in direct expenses and lost revenues. The average household in Pennsylvania could lose \$11,305 a year in income.

### Is it worth it?

The benefits of reducing greenhouse gas emissions are small or nonexistent. By 2060, global warming is likely to have a small (0.2 percent of GDP) *positive* effect on the U.S. economy and a small (1 to 2 percent of GDP) *negative* effect on the global economy. The global benefits of reducing emissions today are an order of magnitude less than the cost.

### Advice to policymakers:

State legislators should oppose new efforts to cap or reduce greenhouse gas emissions because such efforts are expensive, slow economic growth, hurt the poor and elderly, and produce few if any economic or environmental benefits.

State legislators should repeal regulations and subsidies that discourage energy efficiency; encourage sequestration projects that offer additional environmental benefits; and support projects that enhance society’s ability to adapt to gradual changes in climate.

Based on Joseph L. Bast, James M. Taylor, J.D., and Jay Lehr, Ph.D., “State Greenhouse Gas Programs: An Economic and Scientific Analysis,” *Heartland Policy Study #101* (Chicago, IL: The Heartland Institute, February 2003). Copies of the 80–page study are available for \$20 each. Permission is granted to reprint or quote from this *Impact Statement* provided appropriate credit is given.

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