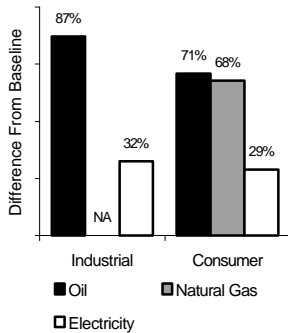


Global Warming: The High Cost of the Kyoto Protocol Impact on Hawaii

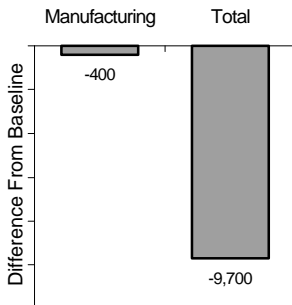
Energy Prices

Hawaii manufacturers would see natural gas prices approximately double.



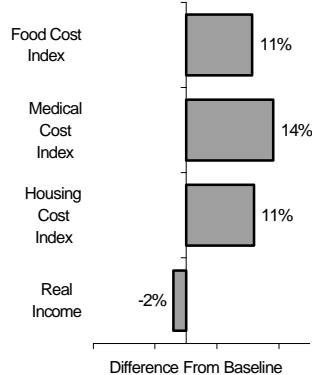
Employment

Hawaii would lose 400 manufacturing jobs.



Consumer Income and Prices

The cost of housing, medical care, and food would rise while incomes would fall.



In December 1997, the Clinton Administration agreed to the Kyoto Protocol, an international treaty that would legally bind industrialized countries to reduce their greenhouse gas emissions. US emissions would be limited to 7% below 1990 levels by late next decade. Meeting this goal would be a daunting task, as carbon emissions from the energy sector are expected to exceed the Kyoto goal by more than 37%. WEFA estimates that to achieve the Kyoto goal would require a carbon permit fee of \$265 per metric ton added to energy prices, resulting in:

- A hike in gasoline prices of nearly 65 cents a gallon
- A doubling of electricity and energy prices for consumers and businesses

The Kyoto Protocol Would Slow Economic Growth and Cost US Jobs

The Kyoto Protocol is supposed to be an international agreement, but 134 of 160 negotiating nations said that the US and other industrialized countries should bear the entire burden. China and India were particularly emphatic, saying that they will never participate in a global effort to reduce greenhouse gas emissions. If key developing nations continue to exempt themselves from the Kyoto Protocol, WEFA estimates that by 2010 the US would:

- Lose 2.4 million jobs
- See a 3.2% drop in U.S. annual output (GDP)
- Lose \$300 billion annually, or more than total expenditures on elementary and secondary education

Hawaii Would Lose 9,700 Jobs and \$329 Million in Tax Revenue

While developing nations would get a free ride under the Kyoto Protocol, state and local economies would not. Implementing the agreement would raise energy costs and slow economic growth. In 2010, WEFA estimates that Hawaii would:

- Lose 9,700 jobs, including 400 manufacturing jobs
- See an unemployment rate as high as 8.2%
- Lose \$329 million in tax revenue, reducing the state's ability to provide social services when the need for such services would be increasing

The Kyoto Protocol Is Not the Only Option

WEFA's analysis shows severe economic consequences for US consumers if the Kyoto Protocol is implemented. Only near-term catastrophic global climate change would justify imposing these costs on US businesses and consumers. As global warming may be gradual and largely due to natural forces, a better strategy to alleviate this potential global threat may be the use of longer-term opportunities, such as:

- Expanding voluntary efforts to limit greenhouse gas emissions
- Supporting scientific research and educational programs on climate
- Investing in the development and deployment of new technologies

Business Impacts: Hawaii

Four-hundred manufacturing jobs would be lost by 2010, as Hawaii companies become less competitive in international markets.

Hawaii's manufacturing sector would be harmed. Manufacturing employment would decline by 2.9% (400 jobs) in Hawaii by 2010 relative to the baseline forecast, while the national average would fall 3.3%. The competitive position of manufacturers located in the state would be eroded due to rising costs, especially relative to non-participating developing countries. Industrial electricity prices would rise 32% by 2010 relative to the baseline (i.e., the price level without an emissions-reduction policy). Hawaii has a high concentration of apparel producers, which would see large declines in exports.

Industrial electricity prices would be 32% higher than baseline levels in 2010.

Energy Prices

Sharp increases in fuel and electricity prices would be felt across the nation. Industrial firms in Hawaii would be burdened in the global competition for markets with price increases of 32% for electricity by 2010 versus baseline levels.

Real gross state product would fall by 2.8% in 2010 relative to the baseline.

Output

Imposition of carbon permit fees would significantly impact the overall level of output as well as the composition of output in the state. Real gross state product would fall 2.8% below the baseline in 2010. Hardest hit among the industries in the state would be manufacturing, as apparel makers experience increased cost of power and move jobs from the state. Real output in the manufacturing sector would fall by 3.8% in 2010. Manufacturing losses would cause producers to reduce their purchases of labor and purchased inputs of services. Sharply higher energy prices would shift Hawaii toward an even greater reliance on service industries.

Hawaii would lose 9,700 jobs by 2010 relative to the baseline, with manufacturing bearing the brunt of losses.

Employment

Total employment is projected to fall 9,700 jobs below the baseline in 2010. The decline would be largest in manufacturing jobs. Within this classification, the largest declines would be in non-durables, particularly apparel and textiles. The largest decline in percentage terms outside of manufacturing would occur in transportation and utilities.

Real wages and salaries in manufacturing would decline by 1.6% in 2010 versus the baseline projection.

Wages & Salaries

Wages and salaries would fall under the imposition of a carbon permit fee. Rising costs must be offset by lower real wages as economies attempt to retain their competitive position. In Hawaii, real manufacturing wages would decline by 1.6% in 2010 relative to the baseline. Real private non-manufacturing wages would fall 1.8% below the baseline forecast.

Consumer Impacts: Hawaii

Limiting greenhouse gas emissions would cost each state resident \$255 of their real annual disposable income by 2010.

If the Kyoto Protocol were implemented, consumers would be squeezed by slower increases in income and the rising costs of basic necessities and other goods and services. Due to the severe loss of employment under the Kyoto Protocol, real personal income in Hawaii would decline. Meanwhile the cost of energy to consumers would increase dramatically. Prices of home heating oil, natural gas, and electricity would rise along with the costs of non-energy goods and services such as medical care, food, and housing. The cumulative result would be a continued erosion of consumers' purchasing power.

Real personal income would fall by 2% compared to the baseline in 2010.

Income

Real income growth would slow along with the loss of jobs. Wages in manufacturing are higher than in most nonmanufacturing industries and the accelerated shift of economic activity and jobs towards service industries would further reduce income growth. By 2010, relative to the baseline forecast real disposable income per capita would decline by \$255, and real total personal income would decline by 2.0%.

Residential energy prices would increase by at least 29% in Hawaii relative to the baseline.

Energy Prices

Residential consumers would face a substantially higher energy bill under the proposed measure. Residential prices for energy would rise significantly above baseline levels in 2010: natural gas (68%), electricity (29%) and home heating oil (71%). The price of motor gasoline would also increase 42% relative to the baseline.

Housing prices would be 11% higher by 2010 relative to the baseline.

Housing

Housing prices are also projected to increase faster under the carbon abatement scenario. Housing prices would increase by 11% more than they would in the baseline projection. In Hawaii, housing prices would escalate at a higher rate than the national average reflecting the in-migration projected for the state due to the less severe loss of employment opportunities.

Medical costs would rise by 14% relative to the baseline in 2010.

Medical Expense

Under the carbon abatement scenario, a comparable set of medical services would cost 14% more relative to the baseline projection. Higher medical care prices would lower purchases and the health of the average consumer would suffer as a result.

Food costs would be 11% higher in 2010 than in the baseline.

Food

Under the carbon limit scenario, food prices would be 11% higher than the baseline in 2010. Because food is a necessity, there would be little decline in the amount purchased per household. Therefore, most households would bear the total increase in food costs.

Government Impacts: Hawaii

Hawaii tax revenues would be reduced by \$329 million and the unemployment rate would approach 8.2% in 2010.

Hawaii would face a possibly significant decline in tax revenue associated with the imposition of policies aimed at meeting the Kyoto Protocol target. Federal, state, and local tax revenues could decline 8.4% below baseline projections in 2010. This has significant implications for public policy, which would be exacerbated by the possibility of increased unemployment. Specifically, Hawaii's unemployment rate is expected to approach 8.2% in 2010. With increases in unemployment and decreases in revenue, the state would be confronted with a daunting problem: how to provide support for its unemployed workers.

Gross State Product

Real output in Hawaii would fall by \$1.2 billion relative to the baseline in 2010.

Adopting carbon emission limits would put Hawaii at risk of losing \$1.2 billion real dollars of output in 2010 relative to the baseline projection. In percentage terms, the state stands to lose approximately 2.8% of its potential output, as economic growth slows. The manufacturing sector would suffer the most severe decline in real output, but the nonmanufacturing sector also would lose \$1.1 billion in real output in 2010 versus the baseline.

Tax Revenues

Tax revenues would fall by 8.4% in 2010.

As a result of the imposition of a global agreement to limit carbon emissions, real tax revenues in Hawaii would fall 8.4% below the baseline projection in 2010. As a percentage of gross state product, baseline tax revenues would be 9.1%. This assumes no changes in tax policy in Hawaii. If taxes were raised to offset the projected loss of tax revenues, its competitiveness relative to other states would decline and further reduce economic activity in the state.

Unemployment and Net Migration

The unemployment rate would rise to 8.2% in the carbon abatement scenario in 2010.

As a consequence of implementing the Kyoto Protocol, Hawaii is projected to lose nearly as many jobs on a percentage basis as the US average. Migration from the state would not increase because the state's loss of employment is less than the national average. This results in an increase in the number of unemployed workers. For Hawaii, the unemployment rate is expected to increase from the 1996 level of 6.4% to 6.6% in the baseline projection in 2010. If the Kyoto Protocol were fully implemented, the unemployment rate in Hawaii would reach 8.2% in 2010.