Vol. XI
No. 5

MECEP choices
Maine Center for Economic Policy
IDEAS FOR SHARED PROSPERITY

June 7, 2010

CLIMATE CHANGE: MAINE MAKES THE CASE FOR FEDERAL ACTION NOW

by Tom Tietenberg

A tide gauge in Portland has been monitoring sea level since 1912. It indicates a sea level rise of about 7.32 inches during the last century. Due to climate change, however, the Maine coast has a 50% chance of experiencing a 22-inch sea-level rise by 2100. In the event of a 100-year storm, landmarks like Walker's Point would be underwater.[1]

The ecological damage caused by an accelerated sea-level increase and the subsequent economic cost would be substantial. At the same time, there will be costs associated with moving away from fossil fuels. So, we have a choice to make: do we act now to reverse this trend or wait and do nothing?

Imperatives for Acting Now

Since the consequences of increasing emissions can be long lasting, waiting to take action would ultimately necessitate making much deeper subsequent cuts in emissions, which would cost more. It is also much more expensive to concentrate more drastic cuts in the future than it is to start now, which can allow us to spread the costs over time. In other words, early action is much cheaper than delaying.

Considering the lingering skepticism of climate change, one approach to making decisions in the face of uncertainty is to assess the costs of being wrong. Even if the scientific predictions of climate change were ultimately proven wrong, reforming our energy system will result in many green jobs, cleaner air, and lower dependence on imported oil. We would have lost little. On the other hand, if the scientists are right and we fail to take action, the damages would be enormous and in some cases

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Scott Cowger, Maple Hill Farm B&B, Hallowell

A national climate policy that helps the state to grow more efficient, competitive and energy independent would level the playing field and provide the basis for a more secure and prosperous future for Maine.

irreversible. The costs of waiting (should action ultimately prove necessary) is much greater than the costs of acting now (should action ultimately prove unnecessary).

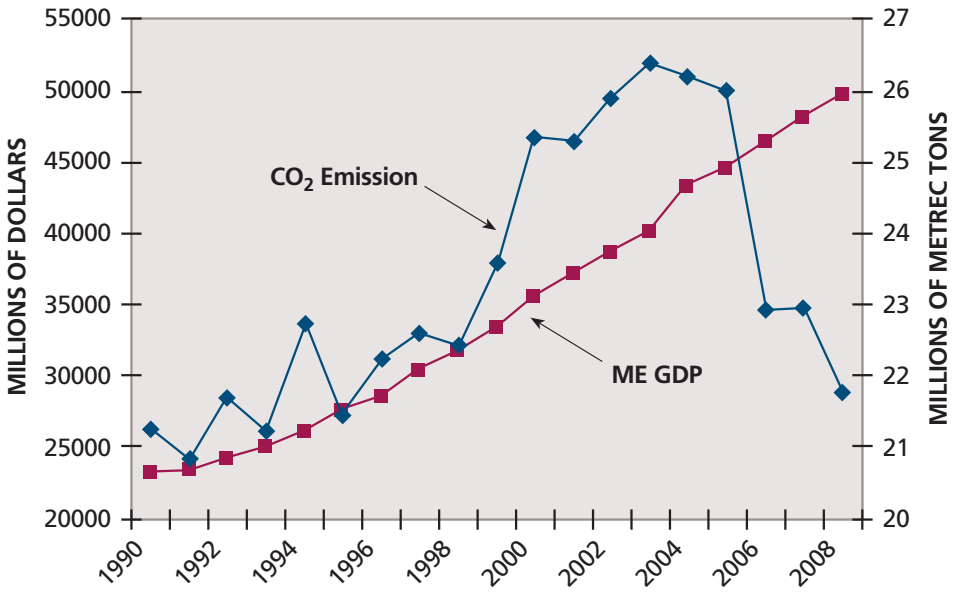
Recently, more businesses are calling for a cap-and-trade policy on carbon. Their motivation is clear. Choosing the right energy investment depends crucially on whether carbon is priced or not. Businesses do not want to invest millions of dollars now only to have to pursue a different solution later. Creating a stable regulatory framework helps reduce investment uncertainty for business.

Finally, consider competitive advantages on a local level. Maine is rich in renewable energy, i.e. biomass, tidal, and wind. Access to these sources could provide a competitive edge for Maine businesses as long as the energy playing field is level. Right now we must compete against states fueled by coal. Since coal does not have to bear the costs of the ecological and human health damages it causes, it is artificially cheap and puts Maine at a competitive disadvantage. Transitioning to a new energy future by forcing all fuels to bear their full cost, as a cap-and-trade policy would do, levels the playing field, helps businesses to compete and keeps jobs in Maine.

Why Cap-and-Trade?

Pricing carbon with a cap-and-trade policy starts by setting a limit or a cap on overall emissions of greenhouse gases – normally multiple gases, not just carbon. Next, allowances are allocated to companies by either auction or "gifting" (free of charge) on the basis of eligibility criteria. Emitters must surrender one allowance for every ton of carbon dioxide equivalent (CO_2-e) emitted at end of the year. Companies can trade their allowances, so any source emitting less than authorized can sell its extra allowances and gain from cutting pollution, whereas a source emitting more than authorized would have to buy more allowances to make up the difference or pay a severe financial penalty for noncompliance.

Maine Gross Domestic Product Grows As State Cuts Carbon Emissions



Source: U.S. Bureau of Economic Analysis, Maine Department of Environmental Protection.

We have been using cap-and-trade to control pollutants like sulfur oxide and nitrogen oxide since the mid-1970s, so we have a lot of experience working with this kind of system. One distinct advantage with cap-and-trade is that the government sets and enforces compliance with the goal, but it leaves businesses with the responsibility and flexibility to meet their emission requirements in the most cost-effective way. Empirical studies consistently indicate that, compared to a traditional regulatory approach such as mandated emissions standards, moving to cap-and-trade could reduce costs of achieving the desired reductions by 30% to 80%.

Our Experience in the Northeast

The Regional Greenhouse Gas Initiative (RGGI), initiated in the Northeast, is the first mandatory, market-based effort in the United States to reduce greenhouse gas emissions. Taking effect on January 1, 2009, RGGI regulates electric power units that generate at least 25 megawatts and burn more than 50% fossil fuel. To date, ten northeastern and mid-Atlantic states have joined, including Maine with these six plants: Florida Power and Light (Falmouth), Calpine (Westbrook), Rumford Power (Rumford), Verso Paper (Androscoggin, Bucksport), and Casco Bay Energy (Veazie).

RGGI aims to stabilize emissions until 2014 and then to reduce CO_2 emissions 10% by 2018. In contrast to previous programs, which relied almost exclusively on gifting, RGGI auctions off most allowances in a sealed-bid system with the revenue returned to the states. In fact, Maine

auctions off all its allowances with proceeds deposited in Maine's Energy & Carbon Savings Trust (to be subsumed into the Efficiency Maine Trust in July) and dedicated to targeted efficiency measures. The Trust has received nearly $17 million from seven auctions totaling 6.3 million allowances.[2] This cap-and-trade feature is a model for comprehensive federal legislation.

RGGI has helped position Maine households and businesses for less future dependence on foreign oil and lower vulnerability to fluctuating oil prices. Energy efficiency investments reduce energy costs while creating jobs both directly and indirectly. When a company hires Maine workers to install more energy efficient equipment or to convert to a renewable source of energy (erecting a wind turbine or installing a pellet stove, for example), those jobs illustrate direct effects. The indirect effects are felt when we spend money on local energy instead of sending money to foreign countries to purchase oil. Currently, 76 cents out of every dollar spent on heating oil leaves Maine and much of it leaves the country.[3] So investing in energy resources in Maine keeps money in the local economy and helps create and retain local jobs.

Federal Policy and Evaluation

Three main bills are now under consideration in Washington. The Waxman-Markey bill passed by the House is large and comprehensive. In the Senate, there is a bill co-sponsored by Senator Maria Cantwell and our own Senator Susan Collins, and the latest one by Senators John Kerry and Joseph Lieberman.

All three bills contain similar emission reduction goals. Waxman-Markey and Kerry-Lieberman have relatively stronger caps, while Cantwell-Collins may need future Congressional action in order to achieve the same level of carbon reductions.

Waxman-Markey initially gifts 85% of carbon allowances but transitions over time to 100% auction. Most gifted allowances will benefit customers, not shareholders. The bill includes complementary policies to promote clean energy and energy efficiency.

Cantwell-Collins auctions off 100% of the allowances, while allocating 75% of the revenue to households on a per capita basis. It reserves the remaining revenue at the federal level for energy efficiency and renewable energy.

Kerry-Lieberman auctions more allowances than Waxman-Markey and awards much of the revenue to households as does Cantwell-Collins. Allocation of allowances transitions from partial gifting to 100% auctioning by 2035. Like Waxman-Markey, the proposal has provisions to promote clean energy and benefit consumers. In contrast to the other two bills, it includes more nuclear energy development, offshore drilling, and a different mix of cap-and-trade with technology policies.

The estimated costs of these policies are roughly similar. A recent Congressional Budget Office analysis of Waxman-Markey can be used to gauge the magnitude of these costs. It indicates that the bill's annual costs by 2020 would be approximately $175 per household, about 0.2% of households' after-tax income. This figure does not include the rebates many households will receive for offsetting their increased energy cost. This refutes the misguided fear that cutting greenhouse gas emissions would bankrupt our economy. In fact, all the estimates suggest that rather than taking a dive, economic activity would grow somewhat more slowly than the status quo. It is important to note that these projections do not account for the health and environmental benefits from lower carbon emissions.

In terms of who bears the costs, due to the many rebates and mandates for consumer benefits, these policies are expected to be progressive. Lower income households, with a disproportionately high energy cost to income ratio, would benefit from implementation of climate policy, as their rebates would exceed their expenditures. Higher income people, who consume much more energy, would pay more in higher energy costs than they receive in rebates.

Maine's Progress and Challenges

What has been the experience in Maine over time? As demonstrated in the chart on the opposite page the State has already been quite successful in reducing carbon without harming the economy. To put that figure into context, the national bills seek to reduce carbon emissions by 17-20% over 2005 by 2020. Remarkably, Maine already achieved a 17% reduction from 2005 levels by 2008 (12 years earlier than the goal). The rising trend of the gross state product as shown in the chart is not mainly due to the recession. In fact, Maine has achieved significant carbon reduction through fuel substitution and energy efficiency initiatives.

Looking forward, the new triennial (2011-13) plan of the Efficiency

Maine Trust sets out a specific program to reduce nearly 300,000 tons of CO_2 emissions annually by the third year, the equivalent of removing 52,000 cars from circulation, and to save consumers nearly $840 million in energy costs, while creating jobs and increasing Maine's gross state product by $1 billion.[4]

Some Maine businesses – for example, the pulp and paper industry – face especially high energy costs. Fortunately, public funds (including RGGI funds) have been an important complement to private investments in promoting both energy efficiency and alternative energy use for the entire spectrum of energy users in Maine, including pulp and paper. These investments have allowed all classes of users to cut energy costs, enabling businesses to become more competitive.

One potential future challenge is that national legislation may preempt (and consequently eliminate) the RGGI program. Eliminating RGGI would also eliminate an especially beneficial revenue source for energy imporvements in Maine. Fortunately, the national bills set money aside for energy efficiency and renewable resources to be administered by the states. Only time will tell whether the amount involved and the process for distributing it allows Maine to continue its early successes.

Leading ahead of the curve, Maine has already positioned itself strategically by developing new energy while reducing energy costs and dependency. Our experience demonstrates that current action can be cost effective and makes the case for federal action now. A national climate policy that helps the state to grow more efficient, more competitive, and more energy independent would level the playing field and provide the basis for a more secure and prosperous future for Maine.

About the Author

Tom Tietenberg, the Mitchell Family Professor of Economics, Emeritus from Colby College, is the author of *Environmental and Natural Resource Economics*, one of the best selling textbooks in the field, and *Emissions Trading*, one of the most widely cited books in the tradable permits literature. Elected President of the Association of Environmental and Natural Resource Economists (AERE) in 1987-88, he has consulted on environmental policy with the United Nations, the World Bank, the InterAmerican Development Bank, the Agency for International Development and the Environmental Protection Agency, as well as several state and foreign governments.

Endnotes

1. This article is adapted from a speech Professor Tietenberg gave to E2Tech on March 18, 2010.
2. www.rggi.org
3. "Maine Voices: Climate bill needed to fix what ails us", by Rep. John Hinck and Jackson A. Parker, Portland Press Herald, May 4, 2010.
4. www.efficiencymainetrust.org/

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