

League of Women Voters of Delaware

Price on Carbon Study

Summary of Findings

2015-2016

Putting a price on greenhouse gas (GHG) emissions - called “a price on carbon” - will reduce demand for fossil fuels and is a positive step toward reducing those emissions. Pricing carbon can be done using either a carbon tax/fee or a system of cap and trade. Our study is not adequate to determine a preference. Both have been tried in many parts of the world; both can be successful.

Revenue will accrue from either system, and how that revenue is used is critical. Our work has shown that improving energy efficiency, investing in research, improving land use and transportation practices, and improving standards (such as mileage standards for vehicles) are all important. And all can be advanced more rapidly if revenue is invested in them.

Carbon Pricing and Revenue Use

Putting a price on greenhouse gas emissions - particularly those formed by burning fossil fuels - is a simple way to reduce demand and lower emissions. Most economists [agree](#) that carbon pricing is an effective way to reduce emissions, whether the [pricing mechanism](#) is via cap and trade or carbon tax - and it is [cheaper](#) than many other alternatives. [Most emissions](#) are from power plants, transportation, and industry. [Emissions have decreased](#) where carbon pricing is in effect, especially from power plants and industry, although it is difficult to determine how much of the decrease is due to carbon pricing alone.

Regional Greenhouse Gas Initiative (RGGI): Delaware is a founding member of [RGGI](#), a cooperative cap and trade system of nine Mid-Atlantic and Northeastern states to reduce CO₂ emissions from the power sector. Emissions have decreased by nearly 50% since 2009, partly because of decreased demand, but mostly because of investments of the revenue by the states in [improving energy efficiency](#). Currently RGGI calls for decreasing the CO₂ emissions cap for the region by 2.5% per year from its 2014 value from 2015 through 2020, and is discussing how to reduce the cap beyond 2020.

Transportation and Climate Initiative (TCI): Delaware is a member of [TCI](#), a group of eleven Mid-Atlantic and Northeastern states that “seeks to develop the clean energy economy and reduce oil dependence and greenhouse gas emissions

from the transportation sector.” Transportation is the sector of Delaware’s economy that produces the largest amount of GHG emissions. Would carbon pricing work in this sector? Economists show that an increased price on gasoline and diesel would have little effect on demand because the market for transportation fuels is [not very elastic](#) - meaning that when prices go up, demand doesn’t go down by a commensurate amount. However, all of TCI’s efforts need funds. Use of revenue from a price on transportation fuels would increase the effectiveness of its work.

Other Revenue Use: In addition to investing in energy efficiency and augmenting transportation options described above, improving land use practices, basic research, and adaptation strategies such as reducing losses from sea level rise and coastal storms will increasingly need funds. Some revenue can also be returned to residents via a dividend or reductions in other taxes, which [has been shown](#) to create jobs and increase GDP. However, increasingly, more and more revenue will be needed in the struggle to directly reduce GHG emissions to mitigate climate change. Currently Delaware’s Department of Natural Resources and Environmental Control (DNREC) has a program to promote clean energy vehicles by providing rebates of \$3500 for each new all-electric vehicle (EV) and \$1500 for each new plug-in hybrid vehicle purchased, as well as financial incentives for vehicle battery charging stations. The money now comes from pricing carbon emissions from electricity generation in RGGI. More could be done if there were an increasing price on the carbon in transportation fuels - especially if it could be done on a regional basis to prevent people from driving out of state to buy their gas and diesel fuel.

Other Policy Options

Other policy options that can assist carbon pricing in making the transition to a sustainable clean-energy economy are Renewable Portfolio Standards, Climate Action Plans, and Public Education and Outreach.

Renewable Portfolio Standards (RPSs)

An RPS requires that an increasing percentage of the electricity sold in a state come from renewable energy sources, such as wind power and solar - either photovoltaics (PV) or thermal solar. Delaware’s RPS requires that 25% of the electricity sold come from renewable sources by 2025, with 3.5% of that from solar PV and solid state fuel cells that use methane as a fuel - even though the methane may be produced by fracking. California and New York have each set the

RPS target of 50% renewables for electricity generation by 2050, and Rhode Island has an RPS target of 40% by 2035. Delaware can do better.

Climate Action Plans (CAPs)

A CAP is a plan by a state (or other governmental body) to reduce emissions of greenhouse gases of all types (principally carbon dioxide, methane, nitrous oxide and fluoro-chemicals) within its jurisdiction by a certain percentage and by a certain year, relative to a baseline year. In Delaware various government agencies in the [Climate Framework for Delaware](#) report urged that GHG emissions be reduced by 30% by 2030, relative to a 2008 baseline year, with no targets for later dates. The target for 2030 could be strengthened and targets set for later years, as other states have done.

Public Education and Outreach

In order for the state of Delaware to survive in the face of sea level rise and more powerful coastal storms brought on by climate change, it will be necessary for global greenhouse gas emissions to be reduced to near zero within a few decades. That will require big increases in energy efficiency and a transition away from fossil fuels to non-carbon-emitting energy sources. While Delaware's contribution to global emissions is small, it is larger than it needs to be, and Delaware could become a leader in showing that a transition to a clean energy economy is not only possible, but it can be done while improving people's health and bringing new jobs and industries to Delaware. [California's efforts](#) have shown GHG reduction can be done while still growing GDP. For that to happen will require energy and climate-literate citizens and public officials who understand both the great risks and great opportunities that we face.

For those who want to learn the basic science of climate change there is a useful overview published jointly by the British Royal Society and the U.S. National Academy of Sciences titled, [Climate Change: Evidence and Causes](#).

For Additional Detail see:

[Delaware Energy, Climate Plans and Current Climate Status](#)

[Carbon Pricing - Methods and Results](#)

[Glossary](#)

[LWVUS Climate Change Position](#)