

Do We Need a Carbon Tax in Massachusetts?

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Introduction

What is a carbon tax? Is a Massachusetts carbon tax necessary to respond to the climate change crisis? How would such a tax affect the environment and the economy of Massachusetts? This article attempts to offer a fair presentation of the relevant facts regarding what such a tax would mean for our communities, our Commonwealth and God's creation.

What is a Revenue-Neutral Carbon Tax?

In simple terms, “the primary objective” of a carbon tax “is to promote reductions in greenhouse gas emissions and fuel use, by putting a price on carbon.”¹ Carbon dioxide and other greenhouse gases (GHGs) pollute the atmosphere and cause climate change. Carbon dioxide is the most common GHG, although methane is more harmful to the climate. A carbon tax is a means of imposing a fee on the release of carbon dioxide into the atmosphere in order to discourage the use of fossil fuels and reduce harmful greenhouse gas emissions. Also referred to as “environmental tax reform” or “carbon pricing,” the tax is added to the price of fossil fuels -- such as coal, petroleum and natural gas - - in proportion to the amount of carbon dioxide thrown off as a byproduct of their combustion.

Because taxes are seldom popular and because the topic of climate change can be contentious, conversations regarding the introduction of a carbon tax may be seen as politically risky. Science however tells us that biding our time presents far greater and more serious risks. There are many opportunities for individuals and communities to reduce their carbon footprints, however, on a larger scale, a carbon tax has been lauded as “the most cost-effective way to tackle greenhouse gas

¹ Elgie, Stewart and Jessica Mcclay. “BC's Carbon Tax Shift After 5 Years: Results – An Environmental and Economic Success Story,” *Sustainable Prosperity* (2013), p. 2

emissions”² because it *institutionalizes a financial incentive to change behaviors related to fossil fuel consumption*. For example, with an increased price on coal—a high polluting fuel—consumers will be more likely switch to cleaner (and thus cheaper) alternatives, such as natural gas or solar power.

Data gleaned from economic studies of other countries shows that taxing carbon has a strong track record of both significantly reducing GHG emissions and leading to positive economic results. This is in part because carbon taxes are often “*revenue-neutral*,” meaning that the tax “does not solely imply a net increase in taxes levied on households and the business community. A carbon tax is ‘revenue-neutral,’ *where the revenues from the tax go to reducing personal income, sales, or corporate taxes.*”³ Thus, individuals, households, and businesses generally see no net loss of income.

Environmental tax reform addresses the consequences that climate change has for our health, our land and our pocketbooks.

Why a Carbon-Tax is Necessary in Massachusetts

Reducing greenhouse gas emissions by introducing a tax on fossil fuels is imperative for many reasons, both globally and locally. In Massachusetts, the consequences of climate change are already visible. GHGs have been shown to make breathing harder and contribute to asthma, lung cancer, emphysema and chronic bronchitis.

- Massachusetts has *the fourth highest occurrence of adults with asthma in the United States*,⁴ and the American Lung Association has given Massachusetts consistently low grades when it comes to air quality.⁵
- Further, GHGs intensify seasonal allergies⁶ and increase the incidence of insect-borne illnesses

² Elgie, p. 1

³ Nystrom, Scott, and Ali Zaidi. *Modeling the Economic, Demographic, and Climate Impact of a Carbon Tax in Massachusetts*. Regional Economic Models, Inc. (REMI). 2013. p. 5

⁴ Statistics from Centers for Disease Control’s (CDC) National Asthma Control Program

⁵ <http://www.stateoftheair.org/2013/states/massachusetts/>

⁶ Bernard, S. M., Samet, J. M., Grambsch, A., Ebi, K. L., & Romieu, I. (2001). The Potential Impacts of Climate Variability and Change on Air Pollution-Related Health Effects in the United States. *Environmental Health Perspectives Supplements*, 109, 199. ISSN: 1078-0475; <http://vectorblog.org/2011/05/climate-change-a-threat-to-our-kids%e2%80%99-health/#more-2882>

such as malaria, West Nile virus and Lyme disease.⁷ Reducing our carbon emissions will help people in our own community to live longer, healthier lives.⁸

- When it comes to land and property, climate change means rising sea levels and more frequent storms, which in turn bring flooding and shoreline erosion. By mid-century, in Greater Boston alone, **1.4 million people will be at high risk of damage to their land and property**,⁹ and beaches on the Cape and on the North and South Shores of Massachusetts will continue to see serious – and likely irreversible -- erosion.¹⁰
- Purdue and Stanford researchers warn that, by century’s end, the annual number of days with **property-damaging thunderstorms on the eastern seaboard will increase as much as 42%**.¹¹ As we know from Sandy’s impact on New Jersey and New York, hurricanes in the Northeast can be hugely destructive. Over the next 100 years, property damage from rising sea levels and more frequent storms are projected to **cost as much as \$94 billion in the Boston area**.¹²
- As the oceans warm and become more acidic, lobster, clam and oyster activity is shifting north to stay in cool water, heavily penalizing the Massachusetts fishing industry¹³. Between the late 1990s and last year, lobster landings in Buzzards Bay, just off Cape Cod, collapsed, declining from 400,000 pounds a year to 72,000.¹⁴

Reducing GHG emissions is imperative for the health and well-being of our families, and our state.

A Carbon Tax in Massachusetts?

Lawmakers in Massachusetts are currently seeking to pass legislation which would introduce a

⁷ http://www.neaq.org/conservation_and_research/climate_change/climate_change_in_new_england.php

⁸ <http://www.epa.gov/region1/airquality/piechart.html>; <http://www.stateoftheair.org/2013/health-risks/health-risks-ozone.html>; Krewski, Daniel. “Evaluating the Effects of Ambient Air Pollution on Life Expectancy.” *New England Journal of Medicine* 360; 4 (2009); Pope, C. Arden et al. “Fine-Particulate Air Pollution and Life Expectancy in the United States.” *New England Journal of Medicine* 360; 4 (2009); ACE/Clean Water Action fact sheet on “Reducing Health Impacts from Diesels”.

⁹ http://www.neaq.org/conservation_and_research/climate_change/climate_change_in_new_england.php

¹⁰ http://www.neaq.org/conservation_and_research/climate_change/climate_change_in_new_england.php

¹¹ *The New York Times*. “Study Sees Higher Risk of Storms on the Horizon” by Michael Wines, September 23, 2013

¹² http://climate-talks.net/2006-ENVRE130/PDF/CLIMB_Final_Report-print-summary.pdf

¹³ <http://www.whoi.edu/OCB-OA/FAQs>; <http://www.bostonglobe.com/opinion/columns/2013/10/11/lobster-now-pot-climate-change/Swxs8MtVUSoh84YgKwSC5O/story.html>

¹⁴ *The Boston Globe*. “New England’s Threatened Lobsters” by Derrick Z. Jackson. October 12, 2013

carbon tax in Massachusetts. *The Conroy-Barrett bill, (H.2532)*,¹⁵ sponsored by State Representative Thomas Conroy (D-Wayland) and State Senator Michael Barrett (D-Lexington), seeks to place a starting tax on carbon of \$5 per metric ton. For reference, this corresponds to an approximate tax increase of 3.5 cents per gallon of gasoline.¹⁶ The bill has 11 co-sponsors and would be the first in the nation, although Oregon and Washington are studying similar measures.

In order to assess the viability and implications of a carbon tax, a research project was commissioned by the *Committee for a Green Economy (CGE)* and prepared by *Regional Economic Models, Inc. (REMI)*. By employing REMI PI+ – “a dynamic equilibrium model of the state economy”– in collaboration with the Carbon Tax Analysis Model (CTAM)–“an open-source model of carbon tax revenues and emissions savings”–the study sought to determine “both the economic impact and the effect on carbon dioxide emissions of a hypothetical carbon tax in the state of Massachusetts.”¹⁷

Overall, the tax achieves its goals of reducing GHG emissions while contributing to the state's economic growth. The REMI study sought to determine the extent to which a carbon tax would contribute to economic growth in the state, minimize any negative financial burdens for individuals and businesses, while also reducing the consumption of fossil fuels, thereby lowering GHG emissions.¹⁸ The resulting “analysis found that it is possible to meet these objectives if the state allocates the carbon tax revenue appropriately.” Here's how the model studied would work:

The state would introduce a \$5 tax per metric ton of carbon dioxide. That tax would then increase by \$10 per year until it reached a to-be-determined peak value.¹⁹ The REMI study ran its model based on three potential peak taxes–\$15, \$30, and \$45 per metric ton of carbon dioxide– and projected three different outcomes based on those figures.

¹⁵ See the full text and history of the bill here: <https://malegislature.gov/Bills/188/House/H2532>

¹⁶ *MassLive*. “Lawmakers Seek to Make Massachusetts 1st State with Carbon Tax,” by Andy Metzger. July 17, 2013 http://www.masslive.com/politics/index.ssf/2013/07/lawmakes_seeking_to_make_massa.html

¹⁷ REMI, p. 4

¹⁸ *Ibid*, p. 5

¹⁹ *Ibid*, p. 8

For all three scenarios, the resulting revenues from the carbon tax were divided in the following manner: the first \$100 million per year in revenue would go toward state investment in infrastructure and scientific research. The remaining revenue would be split: 50% to businesses, in the form of a reduction in corporate income taxes, and 50% to households in the form of lower income taxes and lower sales taxes.²⁰ ***For each scenario, “the impact on the state was positive and the level of carbon dioxide emissions fell.”***²¹ For example, if the tax was peaked at \$45 per metric ton of carbon dioxide, Massachusetts would see a \$10 billion increase in state GDP between 2013 and 2035 and a reduction in carbon emissions of 8 million metric tons in that same time period. Additionally, between 2,000 and 11,000 jobs would be created.²²

Why is this the case? These positive results stem in part from the fact that Massachusetts lacks oil, natural gas and associated industries. Thus, the ***state would increase GDP by up to \$450 million per year simply by lowering the consumption of fuel***, thereby lessening the amount of fuel imported from outside the state. This would keep more money local, increase spending in retail and similar sectors, and “take activity away from other states and centralize [it] in Massachusetts.”²³ Additionally, placing a higher tax on carbon provides incentive to firms with “fuel-based production” to instead depend on labor, thus creating more jobs. Sectors which already rely primarily on labor, such as healthcare, business services, computers, and electronics would experience a modest positive impact.²⁴

It is important to note a voiced concern that the tax would adversely affect lower income individuals and families because these households spend a greater percentage of their income on necessities such as heat. ***According to the REMI model, the reduction in sales tax would correct for some of this negative impact in real time, while the income tax reduction would offer additional***

²⁰ *Ibid*, p. 9

²¹ *Ibid*, p. 3

²² *Ibid*, p. 3

²³ *Ibid*, p. 11

²⁴ *Ibid*, p. 12

*alleviation of financial burdens, though only on an annual basis.*²⁵

Generally speaking, the report finds “positive net impact across all levels of education and professional standing in the state economy.”²⁶ While each individual will not receive returns directly proportionate to their personal fuel consumption,

“An important aspect of a carbon tax is its simplicity and fairness. Everybody pays the tax in proportion to their usage of fuels and therefore their emissions of carbon dioxide into the air, and everybody receives some relief from the state funds available from the carbon tax.”²⁷

The REMI study is hypothetical and does not necessarily reflect what a Massachusetts carbon tax would ultimately look like. Nonetheless, by examining the data gleaned from the REMI research project, we can begin to paint a picture of what a carbon tax might look like in Massachusetts.

The *Conroy-Barrett bill, (H.2532) proposes* using the first \$100 million dollars raised by a carbon tax to pay for Central Artery debt and transportation improvements. Although most revenues would be offset by tax reductions it would not be completely revenue neutral. According to Rep. Conroy, “Mike [Barrett] and I are very flexible about amending this bill. We sort of tossed it out there as a template.”²⁸ The ongoing conversation regarding the distribution of revenue and other aspects of the bill is one that you are encouraged to get involved in! A carbon tax that more fully embodies simplicity and fairness might be modeled on the revenue-neutral system in place in British Columbia since 2008.

Looking to our Canadian Neighbors –

Revenue-Neutral Carbon Tax a Success in British Columbia

In 2008, British Columbia (BC) became the first province in Canada to implement a carbon tax. With the primary objective of achieving a substantial reduction in GHG emissions by taxing fossil fuel

²⁵ *Ibid*, p. 9

²⁶ *Ibid*, p. 17

²⁷ *Ibid*, p. 9

²⁸ State House News Service, July 17, 2013, http://www.masslive.com/politics/index.ssf/2013/07/lawmakes_seeking_to_make_massa.html

use,²⁹ BC imposed a carbon tax which “applies to almost all fossil fuel use in the province, including gasoline, diesel, propane, natural gas, and coal.”³⁰ The tax started at \$10 per metric ton of carbon dioxide and increases by \$5 per year until it reaches a peak rate of \$30 per metric ton. The results so far have been impressive: BC has seen a 17.4% reduction in fuel consumption per person, *per capita fuel consumption has declined by nearly 19% more than in the rest of Canada*,³¹ and *per capita emissions of GHG decreased by 10%*.³²

Carbon pricing in BC followed the revenue-neutral model. The government “imposed a price on the use of carbon-based fuels, with *all the revenues going to fund corresponding cuts in other taxes*.”³³ Consequently, *BC residents now pay the lowest income taxes in all of Canada*.³⁴ On a broader economic scale, “there is no evidence at this point that [the carbon tax] is harming BC's economy,”³⁵ a fact which is consistent with the experience of several European countries that have undertaken a carbon tax and have seen either neutral or slightly positive economic impacts.³⁶ Further, BC has the added benefit of “building a low carbon economy” which is less reliant on fossil fuels and therefore well-positioned to participate in global shifts toward alternative energy and to be less vulnerable to the unpredictable price variability of fuel.³⁷

“Carbon tax' has become a four-letter word in Canadian federal politics.”³⁸ *Nonetheless, in its sixth year, “the carbon tax [in BC] now enjoys bipartisan support, and a 64% public approval rating – remarkable for a tax.*”³⁹ The tax further enjoys widespread support from economists,

²⁹ Elgie, p. 4

³⁰ *Ibid*, p. 1

³¹ *Ibid*, p. 2

³² *Ibid*, p. 4

³³ *Ibid*, p. 1

³⁴ *Ibid*, p. 6

³⁵ *Ibid*, p. 5

³⁶ Ekins, Paul. 2007. “COMETR WP 4: The Effects of ETR on Competitiveness: Modelling with E3ME.” *Competitiveness Effects of Environmental Tax Reforms (COMETR)*: Publishable Final Report to the European Commission, by Andersen, Mikael S. et al. Aarhus: National Environmental Research Institute. <http://www.dmu.dk/Pub/>

³⁷ Elgie, p. 6

³⁸ *Ibid*, p. 1

³⁹ *Ibid*, p. 6

environmentalists, and business leaders.

Conclusion

There are two more important reasons we need a carbon tax in Massachusetts—one legal the other moral. First, without one we are unlikely to reduce carbon dioxide emissions in Massachusetts 25% by 2020 as required by the *Global Warming Solutions Act of 2008*. Secondly, the harm to human health and property caused by climate change falls most heavily on the poor and those least responsible for it. Passage of a revenue-neutral carbon tax – that doesn't increase the tax burden on the poor -- will help us to meet *our moral responsibility to protect creation and to protect the most vulnerable of our brothers and sisters!*

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