Boston College Environmental Affairs Law Review

Volume 44 | Issue 2 Article 9

6-2-2017

Saving on Health Care While Protecting the Planet: An Examination of Massachusetts' Proposed Carbon Tax and Its Impact on the Hospital Industry

Alexandra Shalom
Boston College Law School, alexandra.shalom@bc.edu

SAVING ON HEALTH CARE WHILE PROTECTING THE PLANET: AN EXAMINATION OF MASSACHUSETTS' PROPOSED CARBON TAX AND ITS IMPACT ON THE HOSPITAL INDUSTRY

ALEXANDRA SHALOM*

Abstract: Climate change has negative implications not only for the environment, but also for human health. Human greenhouse gas ("GHG") emissions are a major contributor to climate change and therefore we must curb our behavior to save the planet and ourselves. Following the economic principle of the First Law of Demand, a carbon tax incentivizes polluters to reduce emissions by increasing the cost of emission producing goods. British Columbia has demonstrated that carbon taxes are effective mechanisms to curb GHG emissions. Massachusetts, therefore, has proposed a carbon tax to help achieve its established GHG reduction goals. In addition, the Commonwealth's proposed tax also aligns with the national goal of making health care coverage more affordable and accessible. In fact, the carbon tax's employment-based redistribution scheme is predicted to benefit hospitals by leaving them with a net financial gain. Thus, Massachusetts' proposal would simultaneously benefit two national goals: slowing global warming and minimizing health care costs.

INTRODUCTION

Global warming is the process by which the temperature of Earth's surface, the ocean, and the atmosphere increases over time.[1] Most climate change scientists agree that humans are likely a major cause of global warming.[2] Humans contribute to global warming primarily by emitting greenhouse

* Executive Note Editor, BOSTON COLLEGE ENVIRONMENTAL AFFAIRS LAW REVIEW, 2016–2017.

[1] Alina Bradford, *What Is Global Warming?*, LIVESCIENCE (Dec. 15, 2014), http://www.livescience.com/37003-global-warming.html [https://perma.cc/JPC6-TYX2] (describing global warming and its impact on global temperature trends).

[2] *Scientific Consensus: Earth's Climate Is Warming*, NAT'L AERONAUTICS & SPACE ADMIN. (Jan. 26, 2016), http://climate.nasa.gov/scientific-consensus/ [https://perma.cc/F9EU-TTX6] (listing quotes from scientific organizations and journals that agree human activity has impacted "climate-warming trends" including the American Medical Society, the American Chemical Society, U.S. National Academy of Science, and the American Physical Society).

gases ("GHGs").[3] GHGs include water vapor, carbon dioxide, methane, and nitrous oxide.[4] When released, GHGs hold heat in the Earth's atmosphere, thereby increasing the Earth's temperature.[5] Out of the many GHGs emitted by humans, carbon dioxide is the biggest contributor to global warming.[6]

The environmental impact of global warming is significant.[7] Global warming has already resulted in shrinking glaciers and rising sea levels.[8] Other long-term effects of global warming include rising temperatures, longer frost-free and growing seasons, heavier precipitation, more droughts and heat waves, stronger hurricanes, and an ice-free Arctic.[9] The amount of GHGs emitted into the atmosphere corresponds to the level of warming that occurs.[10] Thus, it is important to curb human GHG emissions to minimize global warming and its negative effects.[11]

One method for reducing GHG emissions is by implementing a carbon tax.[12] This tax is an additional cost, proportional to the amount of emissions produced.[13] A carbon tax will increase the costs of GHG emissions for everyone, including businesses.[14] Specifically, the additional cost of a carbon tax could negatively impact businesses and curb economic growth.[15] For

---

[3] *See id.*

[4] Bradford, *supra* note 1 (describing GHGs and their role in the greenhouse effect).

[5] *Global Warming 101*, NAT. RES. DEF. COUNCIL (Mar. 11, 2016), http://www.nrdc.org/globalwarming/f101.asp [https://perma.cc/P9ZM-YBMA].

[6] *See id.*

[7] *Id.* (noting that global warming is cause for great concern and listing some its negative environmental impacts).

[8] *The Consequences of Climate Change*, NAT'L AERONAUTICS & SPACE ADMIN. (Jan. 26, 2016), http://climate.nasa.gov/effects/ [https://perma.cc/4UAG-XZ8L].

[9] NEIL ADGER ET AL., INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS 17 (2007), https://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-spm.pdf [perma.cc/2BH5-4WM4] (predicting that over the next hundred years, the Earth's temperatures will rise, possibly by as much as ten degrees).

[10] Bradford, *supra* note 1.

[11] *See id.* (explaining that humans contribute to global warming); *The Consequences of Climate Change, supra* note 8 (listing and describing the consequences of climate change).

[12] Brian C. Murray & Nicholas Rivers, *British Columbia's Revenue-Neutral Carbon Tax: A Review of the Latest "Grand Experiment" in Environmental Policy* 11 (Duke Nicholas Inst., Working Paper No. 15-04, 2015), https://nicholasinstitute.duke.edu/sites/default/files/publications/ni_wp_15-04_full.pdf [https://perma.cc/45R6-TMFM]; *The Carbon Tax: Impacts and Outcomes*, AON, http://www.aon.com.au/australia/thought-leadership/currency/carbon-tax-impacts-and-outcomes.htm [https://perma.cc/B4AT-QWWV].

[13] Stephen Sewalk, *Carbon Tax with Reinvestment Trumps Cap-and-Trade*, 30 PACE ENVTL. L. REV. 580, 582 (2013) (defining a carbon tax as "a tax that is levied per ton of emissions of carbon dioxide").

[14] *See FAQs,* CARBON TAX CTR., https://www.carbontax.org/faqs/ [https://perma.cc/PN8H-9R2H] (explaining that carbon taxes must increase quickly to create the desired price incentives).

[15] *See* INST. FOR ENERGY RESEARCH, CARBON TAXES: REDUCING ECONOMIC GROWTH—ACHIEVING NO ENVIRONMENTAL IMPROVEMENT 10, http://instituteforenergyresearch.org/wp-content/uploads/2009/03/Carbon_Taxes_Primer.pdf [https://perma.cc/2Q9W-2MCV] (arguing that higher energy costs will force American businesses oversea, thereby harming the economy); *The*

industries working to cut costs and reduce prices, this new tax could be problematic.[16] In particular, in the health care arena, there has been a national effort to make health care coverage more affordable and accessible.[17] With the introduction of the Patient Protection and Affordable Care Act ("ACA"), federal payment schemes for care shifted, resulting in the slowest rise in health care costs in fifty years.[18] Similarly, although the Trump administration promises to replace the ACA, the administration has stated that it shares the same goals of providing Americans with less expensive and higher quality care.[19] Within this context, a carbon tax could contradict the goal of reducing health care costs by increasing energy-related operating costs for the industry.[20]

Minimizing health care costs and slowing global warming are both national priorities.[21] In addition, global warming has adverse impacts on hu-

---

Carbon Tax: Impacts and Outcomes, *supra* note 12 (discussing how the new economic environment created by the carbon tax could pose risks for businesses).

[16] *See* WILLIAM MCBRIDE, TAX FOUND., WHAT IS THE EVIDENCE ON TAXES AND GROWTH? 1–2 (2012), https://files.taxfoundation.org/legacy/docs/sr207.pdf [https://perma.cc/S5K3-39DY] (analyzing studies on taxes and economic growth and concluding that taxes are harmful to economic growth).

[17] *Health Care That Works for Americans*, WHITE HOUSE, https://www.whitehouse.gov/healthreform/healthcare-overview [https://perma.cc/X4FZ-BPTF] (including both making health care coverage more affordable and creating better access to health care as key components of recent reforms to the health care system).

[18] *Id.*

[19] David Lauter, *Trump Lays Down a Marker to Judge His Healthcare Plan,* L.A. TIMES (Jan. 16, 2017), http://www.latimes.com/nation/politics/trailguide/la-na-trailguide-updates-trump-lays-down-a-marker-to-judge-his-1484583263-htmlstory.html [https://perma.cc/6J6H-7CBS]; *Health Care that Works for Americans, supra* note 17.

[20] MCBRIDE, *supra* note 16; NAT'L GRID, MANAGING ENERGY COSTS IN HOSPITALS 2 (2002), https://www9.nationalgridus.com/non_html/shared_energyeff_hospitals.pdf [https://perma.cc/PLS4-9FVU] (listing hospitals' energy-related operating costs including heating, lighting, ventilation, office equipment, cooling, refrigeration, and water heating); *Health Care That Works for Americans, supra* note 17.

[21] Alan Neuhauser, *Obama: Climate Change an "Immediate Risk" to National Security*, U.S. NEWS & WORLD REPORT (May 20, 2015), http://www.usnews.com/news/articles/2015/05/20/obama-climate-change-an-immediate-risk-to-national-security [https://perma.cc/NTC4-HMU7] (stating that President Obama acknowledged that climate change poses "immediate risks to our national security"); *An America First Energy Plan,* WHITE HOUSE, https://www.whitehouse.gov/america-first-energy [https://perma.cc/V464-L4T5] (asserting that "protecting clean air and clean water, conserving our natural habitats, and preserving our natural reserves and resources will remain a high priority"); *Healthcare Reform to Make America Great Again*, TRUMP PENCE, https://web.archive.org/web/20170120072848/https://www.donaldjtrump.com/positions/healthcare-reform [https://perma.cc/A4YV-SX77] (advocating for repeal of the Affordable Care Act ("ACA") in order to "broaden healthcare access, make healthcare more affordable and improve the quality of care"); *Top Issues*, WHITE HOUSE, https://www.whitehouse.gov/issues [https://perma.cc/H22B-6RWD] (listing President Obama's top national issues, including climate change).

man health.[22] Warmer temperatures decrease air quality, stimulate allergens, increase the spread of infectious diseases, and cause heat-related deaths.[23] These negative health consequences of global warming are often more expensive than the cost of curbing GHG emissions.[24] As such, reducing GHG emissions and improving human health are not competing goals, rather any effort to advance one of these goals should also advance the other.[25] Controlling GHG emissions will result in the added benefit of reducing the rising cost of health care by slowing these negative and costly health outcomes related to global warming.[26] For example, Massachusetts has proposed a new carbon tax scheme and statistics demonstrate that it will leave hospitals with a lower net outflow, thereby advancing both national goals.[27]

Part I of this Note examines the development of carbon taxes generally, the specific implementation of British Columbia's tax, the United States efforts to regulate GHG emissions under the Clean Air Act, and Massachusetts' proposed tax.[28] Part II considers the dormant commerce clause as a potential legal challenge to implementing Massachusetts' proposed tax.[29] Part III discusses how the ACA has been lowering the cost of health care in the United States, hospital spending, and hospitals' energy costs.[30] Finally, Part IV evaluates the likely success of Massachusetts' proposed carbon tax

---

[22] *Health*, UNION OF CONCERNED SCIENTISTS (2011), http://www.climatehotmap.org/global-warming-effects/health.html [https://perma.cc/DCU5-L47K] (noting severe risks associated with climate change).

[23] *The Consequences of Global Warming on Health*, NAT'L RES. DEF. COUNCIL, http://www.nrdc.org/globalwarming/fcons/fcons2.asp [https://perma.cc/9FBM-UQ5V] (listing additional consequences to global warming); *Health*, *supra* note 22 (noting severe risks associated with climate change).

[24] *Health*, *supra* note 22 (stating that "the costs of coping with health risks linked to severe climate change are often higher than the costs of curbing heat-trapping emissions").

[25] *See An America First Energy Plan, supra* note 21 (noting that protecting the environment is a high priority); *Healthcare Reform to Make America Great Again, supra* note 21 (stating that providing affordable, quality care to the nation is a critical component to his plan to "Make America Great Again"); *Top Issues*, *supra* note 21 (noting that the Obama Administration tackled top national priorities with a comprehensive plan).

[26] Murray & Rivers, *supra* note 12, at 18 (noting that British Columbia's carbon tax has been successful in reducing GHG emissions); *Health, supra* note 22 (describing the health risks of rising climate temperatures).

[27] *See An America First Energy Plan, supra* note 21; *Healthcare Reform to Make America Great Again, supra* note 21; *infra* notes 247–262 and accompanying text.

[28] *See infra* notes 32–182 and accompanying text.

[29] *See infra* notes 183–213 and accompanying text. Even if the ACA is repealed, President Trump has stated that he will continue to forward goals promulgated by the ACA, including efforts to reduce the cost of health care. *Healthcare Reform to Make America Great Again*, *supra* note 21.

[30] *See infra* notes 214–261 and accompanying text. Efforts to repeal the ACA have been unsuccessful. Maggie Haberman et al., *In Major Defeat for Trump, Push to Repeal Health Law Fails*, N.Y. TIMES (Mar. 24, 2017), https://www.nytimes.com/2017/03/24/us/politics/health-care-affordable-care-act.html [https://perma.cc/H3TD-GLPF].

and its potential impact on the hospital industry and overall health care costs, and compares the proposed tax to British Columbia's model.[31]

I. COMBATING CLIMATE CHANGE

Since the 1990s, there has been a small-scale trend towards implementing carbon taxes on national, state, and provincial levels in order to lower GHG emissions.[32] These programs focus on reducing carbon dioxide ("CO2") emissions from humans because humans produce more carbon dioxide than any other GHG and therefore is a leading contributor to global warming.[33]

A carbon tax proportionally increases the cost of emitting GHGs by the amount of emissions that a good produces.[34] The government collects the tax from the coal or natural gas suppliers at the top of the supply chain and then the suppliers increase the wholesale prices.[35] Next, the tax is passed to electric producers, who subsequently raise the overall price of their carbon-producing products all the way down the production and distribution chain to the extent the market will allow.[36] For example, the government will receive the tax for petroleum products from refiners, thereby increasing the price of the product for wholesalers who in turn increase their product prices for retail customers.[37] The increased cost incentivizes polluters to reduce emissions, thereby lowering overall GHG emissions.[38] Economists argue that carbon taxes are the best way to curb GHG emissions and that these taxes have proven to be successful.[39]

---

[31] *See infra* notes 265–336 and accompanying text.

[32] WORLD BANK, PUTTING A PRICE ON CARBON WITH A TAX 2–4, http://www.worldbank.org/content/dam/Worldbank/document/SDN/background-note_carbon-tax.pdf [https://perma.cc/KSW3-U728] (stating that fifteen countries are experimenting with a carbon tax); *States,* CARBON TAX CTR., http://www.carbontax.org/states/ [https://perma.cc/7USR-BSPP] (describing carbon taxes being implemented at the state level).

[33] *FAQs*, *supra* note 14 (stating that in the United States, "carbon dioxide released by burning oil, coal and natural gas makes up 82% of total greenhouse gas emissions").

[34] Sewalk, *supra* note 13 (defining carbon tax).

[35] *FAQs*, *supra* note 14.

[36] *Id.*

[37] *Id.*

[38] *See* Sewalk, *supra* note 13 (noting that regulation is "the simplest way to reduce carbon emissions" and that " [c]arbon taxes act as a means of internalizing negative externalities")

[39] Murray & Rivers, *supra* note 12, at 14 (noting that economists have been and currently are supportive of carbon taxes); Michael J. Waggoner, *The House Erred: A Carbon Tax Is Better Than Cap and Trade* 1257 (Univ. of Colo. Law Sch., Working Paper No. 09-18, 2009), http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1489592 [https://perma.cc/9KS6-BFVN] (listing reasons why a carbon tax is preferable to a cap-and-trade system).

Taxation has been used in other fields to incentivize behavioral changes.[40] For example, governments have levied taxes on tobacco products to discourage smoking because of its extremely detrimental health consequences.[41] Studies prove that increasing the cost of cigarettes by imposing a tax is an effective strategy to reduce smoking among minors and young adults.[42] In fact, cigarette taxes are one of the most effective tools to decrease smoking across all populations.[43]

British Columbia emerged as a leader in incentivizing environmental behavior change in 2008, when it implemented the first carbon tax scheme in North America.[44] In November 2015, Canada's province of Alberta implemented a carbon tax scheme in response to the Paris Climate Conference.[45] In the United States, structured carbon taxes have also been proposed in several states, including Massachusetts, New York, and Oregon.[46] Oregon's proposed carbon tax would start at ten dollars per ton of CO2 emitted and would rise by an additional ten dollars per year until it reaches sixty dollars per ton of CO2 emitted.[47] The proposed carbon tax in New York would tax emissions starting at thirty-five dollars per ton of CO2 and rise annually by fifteen dollars per ton of CO2 to a maximum tax of one hundred eighty five dollars per ton of CO2.[48] For example, the average American car emits approximately seven tons of CO2 annually, which would thereby cost a New York car owner around $245 in the first year following implementation of the tax.[49] Sixty percent of the fund would be returned to low and moderate-income individuals and forty percent of the

---

[40] *See* Peal Bader et al., *Effects of Tobacco Taxation and Pricing on Smoking Behavior in High Risk Populations: A Knowledge Synthesis*, 8 INT'L J. ENVTL. RES. & PUB. HEALTH 4118, 4119 (2011) (discussing taxing tobacco as a way to reduce smoking).

[41] *Id.* In the United States, more than 480,000 deaths are caused annually by smoking cigarettes. *Health Effects of Cigarette Smoking*, CTRS. FOR DISEASE CONTROL & PREVENTION (Dec. 1, 2016), https://www.cdc.gov/tobacco/data_statistics/fact_sheets/health_effects/effects_cig_smoking/ [https://perma.cc/RX8E-YE55].

[42] Bader et al., *supra* note 40.

[43] *Id.*

[44] *Climate Leadership Team Report Released: Province to Begin Public Consultations in January 2016*, B.C. GOV'T NEWS (Nov. 27, 2015), https://news.gov.bc.ca/releases/2015ENV0074-001983 [https://perma.cc/4MZ4-M8HD] (describing British Columbia's pioneering of the carbon tax).

[45] CHARLES KOMANOFF & MATTHEW GORDON, CARBON TAX CTR., BRITISH COLUMBIA'S CARBON TAX: BY THE NUMBERS A CARBON TAX CENTER REPORT 4 (2015), http://www.carbontax.org/wp-content/uploads/CTC_British_Columbia's_Carbon_Tax_By_The_Numbers.pdf [https://perma.cc/X6EJ-5A58].

[46] *States*, *supra* note 32 (noting the developments among states concerning carbon taxes).

[47] *Id.* This proposed tax is more than double the tax in British Columbia. *Id.*

[48] *Id.*

[49] *See* Bill Chameides, *Picturing a Ton of CO2,* ENVTL. DEF. FUND: CLIMATE 411 (Feb. 20, 2007), http://blogs.edf.org/climate411/2007/02/20/picturing-a-ton-of-co2/ [https://perma.cc/S9BB-PWN4]; *States*, *supra* note 32.

funds would be invested in transportation, renewable energy, and climate change preparations.[50]

A. What Is a Carbon Tax?

A carbon tax aims to minimize GHG emissions by charging polluters for the amount of carbon dioxide they release into the air.[51] A carbon tax typically charges for each ton of carbon dioxide emitted.[52] Regulators incentivize emitters to choose lower GHG-emitting activities by charging for the levels of carbon dioxide produced.[53] Without a carbon tax, polluters do not directly incur any cost as a result of their emissions.[54] Polluters therefore have little incentive to reduce their emissions.[55] A carbon tax adds the cost of polluting to prices in the marketplace.[56] Then the carbon tax is passed on to consumers and forces all emitters to bear the burden of their emissions by making these emitters pay for the harm they cause.[57] This added cost to GHG emitting goods subsequently reduces consumer's use of these goods.[58] The economic principle, the First Law of Demand, suggests the same outcome; when the price of a good rises, the demand for the good responds by proportionally falling.[59]

Another scheme to reduce emissions is cap-and-trade.[60] Cap-and-trade schemes place limits on the total amount of emissions permitted in a re-

---

[50] *States*, *supra* note 32 (noting the developments among states concerning carbon taxes).

[51] WORLD BANK, *supra* note 32, at 1 (defining a carbon tax).

[52] *Id.*

[53] *Id.* (discussing incentives created by a carbon tax).

[54] Sewalk, *supra* note 13, at 583 (stating that currently carbon emitters are polluting "with no repercussions").

[55] *See id.* ("From an economic standpoint, this internalization through taxation is a justifiable reason to impose a carbon tax.").

[56] Susan Jones, *Obama Says a New Tax Is "the Most Elegant Way" to Stop Climate Change*, CNS NEWS (Dec. 1, 2015), http://www.cnsnews.com/news/article/susan-jones/obama-says-new-tax-most-elegant-way-stop-climate-change [https://perma.cc/25UP-FL5J] (quoting President Obama: "I have long believed that the most elegant way to drive innovation and to reduce carbon emissions is to put a price on it. This is a classic market failure . . . ."); *see FAQs*, *supra* note 14 (describing how a carbon tax is administered and felt all the way down the production and distribution chains).

[57] Sewalk, *supra* note 13, at 582–83 (noting that the polluters "should have to bear the costs of the harm caused").

[58] *See* WORLD BANK, *supra* note 32, at 1 (increasing the price of GHG emitting goods results in the economy shifting away from using these GHG intensive products).

[59] *Definition of "Law of Demand,"* ECON. TIMES, http://economictimes.indiatimes.com/definition/law-of-demand [https://perma.cc/WAD8-53EX] (explaining that there is a direct relationship between the price and quantity of a good or service).

[60] Denny Ellerman et al., *Emissions Trading in the United States: Experience, Lessons and Considerations for Greenhouse Gases—The Pew Center on Global Change Report, in* ZYGMUNT J.B. PLATER ET AL., ENVIRONMENTAL LAW AND POLICY: NATURE, LAW, AND SOCIETY 612, 612 (4th ed. 2010) (describing cap-and-trade principles).

gion.[61] Each emitting source in the region must have permits to cover its total emissions.[62] The regulators' goal is to place an aggregate cap on all emissions rather than limiting each source's individual level.[63] Therefore, sources can buy and sell permits from each other so long as the aggregate level of emissions remain stable, at a level below the agreed upon cap.[64]

In contrast to the cap-and-trade scheme, a carbon tax does not put a total limit on the amount of emissions that each emitting source or regulated area can produce.[65] Similarly, a carbon tax does not dictate how emissions will be reduced and rather relies on a predictable economic response to an increase in the cost of goods associated with the tax.[66] The tax, therefore, causes the market to react to the increased cost.[67] An ideal solution includes market actors reducing their GHG emissions by utilizing more environmentally friendly energy sources, thereby achieving the underlying goal of the tax.[68] For example, in Newfoundland, a study on consumer behavior in response to an excise tax that resulted in increased gasoline prices found that the tax created less demand for gasoline.[69] The evidence from the Newfoundland gasoline study indicates that individual and corporate actors will respond similarly to a carbon tax.[70]

Sometimes, alternatives to products that produce less GHG emissions are more costly to a consumer than the GHG product, even with a carbon tax.[71] For low-income consumers who cannot afford the more environmen-

---

[61] *Id.*

[62] *Id.*

[63] *See id.* at 612–13.

[64] *Id.* at 612 ("Each source covered by the program must hold permits to cover its emissions, with sources free to buy and sell permits from each other.").

[65] CTR. FOR CLIMATE & ENERGY SOLS., OPTIONS AND CONSIDERATIONS FOR A FEDERAL CARBON TAX 1–2 (2013) [hereinafter OPTIONS AND CONSIDERATIONS FOR A FEDERAL CARBON TAX], https://www.c2es.org/docUploads/options-considerations-federal-carbon-tax.pdf [https://perma.cc/SM4H-BESX] (noting differences between a cap-and-trade scheme and a carbon tax in terms of limiting total emissions).

[66] *See id.* (stating that "a carbon tax sets the price and lets the market determine the environmental outcome").

[67] *Id.*; Jones, *supra* note 56 (quoting President Obama: "if you put a price on [carbon], then the entire market would respond").

[68] *See* OPTIONS AND CONSIDERATIONS FOR A FEDERAL CARBON TAX, *supra* note 65 (discussing behavioral changes as a result of a carbon tax, which will in turn lead to emission reductions).

[69] Nicholas Rivers, *Will Consumers Respond to a Carbon Tax?*, MACLEANS (Dec. 29, 2016), http://www.macleans.ca/economy/economicanalysis/will-consumers-respond-to-a-carbon-tax/ [https://perma.cc/77PZ-V9YF].

[70] *Id.*

[71] Renee Cho, *For Climate Change, Carbon Pricing Is No Silver Bullet*, COLUM. UNIV. EARTH INST.: STATE OF THE PLANET (July 18, 2016), http://blogs.ei.columbia.edu/2016/07/18/for-climate-change-carbon-pricing-is-no-silver-bullet/ [https://perma.cc/KWD3-JY2X].

tally safe product, the carbon tax is an ineffective incentive.[72] In addition, some alternatives may harm the environment in different ways.[73] For example, the search for inexpensive alternatives in the United States has fueled investment in fracking, an oil-extraction method that emits the GHG methane.[74] Thus, science and economics experts suggest incrementally introducing carbon taxes while simultaneously investing in alternative energy resources to help balance this particular risk.[75]

A carbon tax generates revenue, which has many potential uses.[76] British Columbia's carbon tax aims for revenue neutrality by paying back the collected revenue to households and businesses.[77] Alternatively, the government could use the funds for general spending or investing in environmentally friendly resources.[78]

B. Global Efforts to Combat Climate Change

The World Climate Conference of 1979 serves as the first example of many international efforts aimed at minimizing climate change.[79] One effort to reduce GHG emissions that has been consistently considered since then is an effort to reduce emissions by putting a price on CO2 emissions.[80] Levying a tax on CO2 emissions forces people to internalize the social cost of environmental damage caused by GHGs.[81] The most common approaches for adding the social cost to the price of fossil fuels are through cap-and-trade systems and carbon tax schemes.[82] A carbon tax causes the price of GHG emission-producing goods to factor in the social cost of emitting

---

[72] *Id.*

[73] *Id.*

[74] *Id.*

[75] *Id.*

[76] *See* Rivers, *supra* note 69 (discussing different ways revenues could be used by the government).

[77] Murray & Rivers, *supra* note 12, at 2, 6 (discussing revenue neutrality and stating it does not increase government revenue because a revenue neutral tax redistributes funds back to businesses and households through tax-cuts and direct transfers).

[78] OPTIONS AND CONSIDERATIONS FOR A FEDERAL CARBON TAX, *supra* note 65, at 1–2.

[79] *Background on the UNFCCC: The International Response to Climate Change*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/items/6031.php [https://perma.cc/LG9C-MQ75] (outlining the history of the international community's response to climate change).

[80] OPTIONS AND CONSIDERATIONS FOR A FEDERAL CARBON TAX, *supra* note 65, at 1–2 (describing various approaches to reduce GHG emissions).

[81] *See id.* (noting that the costs associated with climate change "are not currently included in the market prices of goods that emit greenhouse gases"). Social costs are externalities that are not typically included in the cost of a good. *See id.* (describing social costs and noting that the social cost of GHG emissions is the environmental damage caused by climate change, which is not typically accounted for in the price of fossil fuels).

[82] *Id.* (outlining common approaches to combat climate change).

GHGs, thereby resulting in consumers reducing their intake in response to the increased price.[83] Economists agree that carbon tax schemes are more effective than cap-and-trade systems in reducing GHG emissions.[84] Some experts prefer carbon taxes because carbon taxes are less complicated and faster to implement, they have clearer goals and higher transparency, they are more uniformly applied, and a carbon tax is less susceptible to corruption than cap-and-trade.[85]

The international community accepts that GHG emissions add to the global warming crisis.[86] In 1992, countries joined the United Nations Framework Convention on Climate Change ("UNFCCC"), an international treaty that aims to minimize global warming.[87] The UNFCCC recognizes that climate change is a problem, and its goal is to stabilize GHG emissions.[88] The UNFCCC categorizes industrialized countries as Annex I countries and charges these nations with setting an example by drastically cutting their GHG emissions.[89] In addition, the UNFCCC created a fund managed by the Global Environment Facility to support developing countries in their efforts to minimize GHG emissions.[90] To monitor international progress, the UNFCCC requires Annex I countries to submit an inventory of national GHG emissions each year, which encourages compliance.[91]

The signatory countries later decided that the UNFCCC was not strong enough to reduce emissions.[92] In 1997, countries negotiated the Kyoto Pro-

---

[83] *Id.* (stating that "reductions will come from consumers . . . changing their behavior").

[84] Murray & Rivers, *supra* note 12, at 2 (stating that economists often prefer revenue-neutral carbon taxation and describing reasons for such); Waggoner, *supra* note 39, at 1257 (listing reasons why a carbon tax is preferable to a cap-and-trade system); *Do Economists All Favour a Carbon Tax?*, THE ECONOMIST: FREE EXCHANGE (Sept. 19, 2011), http://www.economist.com/blogs/freeexchange/2011/09/climate-policy [https://perma.cc/EV8T-E698] (explaining economists are often proponents of carbon taxes because it is an economic model).

[85] *Putting a Price on Carbon: An Emission Cap or a Tax?*, YALE ENV'T 360 (May 7, 2009), http://e360.yale.edu/feature/putting_a_price_on_carbon_an_emissions_cap_or_a_tax/2148/ [https://perma.cc/2BS6-ZBPM] (summarizing the viewpoints economic, environmental, and academic experts).

[86] *Scientific Consensus: Earth's Climate Is Warming*, *supra* note 2 (quoting the Intergovernmental Panel on Climate Change: "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic greenhouse gas concentrations").

[87] *Background on the UNFCCC: The International Response to Climate Change, supra* note 79.

[88] United Nations Framework Convention on Climate Change art. 3, May 9, 1992, S. TREATY DOC NO. 102-38 (1992), 1771 U.N.T.S. 107.

[89] *Id.* at art. 4.

[90] *Id.* at arts. 11, 21 (describing the system of grants and loans established under the United Nations Framework Convention on Climate Change ("UNFCCC")).

[91] *Id.* at art. 12 (describing the protocol required of Annex I countries).

[92] *Background on the UNFCCC: The International Response to Climate Change*, *supra* note 79.

tocol, which came into effect in 2005.[93] Connected to the UNFCCC, the Kyoto Protocol intended to commit parties to meet specified reduction levels in three phases.[94] In contrast to the UNFCCC, the Kyoto Protocol binds industrialized nations to the international goal of stabilizing GHG emissions.[95] The Kyoto Protocol includes reporting and verification procedures as well as a compliance system for its signatory nations.[96] Although the Kyoto Protocol is binding, it does not penalize countries for missing emission targets.[97] Rather, the agreement only contains transparency guidelines to encourage compliance.[98] Similar to the UNFCCC, the agreement lays out two different sets of requirements, one for industrialized nations and another for developing countries.[99]

Despite these international efforts, GHG emissions continue to threaten the environment.[100] As such, the international community periodically meets in an effort to tackle global climate change.[101] In 2015, world leaders came together again at the Paris Climate Conference and 122 countries have

---

[93] Kyoto Protocol to the United Nations Framework Convention on Climate Change, art. 25, Dec. 10, 1997, 2303 U.N.T.S. 148 [hereinafter Kyoto Protocol]; *Kyoto Protocol,* U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/kyoto_protocol/items/2830.php [https://perma.cc/CSS9-DXDV].

[94] *See* Kyoto Protocol, *supra* note 93, at art. 25.

[95] *Id.* at art. 3. (targeting industrialized nations because, due to the past 150 years of industrialization, these nations are primarily responsible for high GHG emission levels).

[96] *Id.* at art. 6 (establishing that the parties of the Kyoto Protocol may establish guidelines for verification and reporting); *Making Those First Steps Count: An Introduction to the Kyoto Protocol*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://unfccc.int/essential_background/kyoto_protocol/items/6034.php [https://perma.cc/NA7Y-6NPQ] (describing mechanisms instituted by the Kyoto Protocol).

[97] *Outcomes of the U.N. Climate Change Conference in Paris*, CTR. FOR CLIMATE & ENERGY SOLS., http://www.c2es.org/international/negotiations/cop21-paris/summary [https://perma.cc/ZSN2-DAQ5] (explaining that transparency requirements in the Paris agreement mandate countries submit information necessary to track their progress in emission reductions in order to provide flexibility for countries with varying capacities); *Paris Climate Agreement: All You Need to Know*, CNBC (Dec. 13, 2015), http://www.cnbc.com/2015/12/13/paris-climate-agreement-all-you-need-to-know.html [https://perma.cc/H2MF-PRKH].

[98] *Outcomes of U.N. Climate Change Conference in Paris*, *supra* note 97.

[99] *Paris Climate Agreement: All You Need to Know*, *supra* note 97 (explaining that expectations to reduce emissions are higher for developed countries whereas developing countries are merely encouraged to reduce emissions).

[100] *The Consequences of Climate Change*, *supra* note 8 (listing future and long-term effects of global climate change); *Paris Climate Agreement: All You Need to Know*, *supra* note 97 (noting that international efforts to reduce GHG emissions are occurring).

[101] *Background on the UNFCCC: The International Response to Climate Change, supra* note 79 (listing the international community's response to climate change since 1979); *Information Hub Overview*, U.N. FRAMEWORK CONVENTION ON CLIMATE CHANGE, http://newsroom.unfccc.int/cop21parisinformationhub/2015-un-climate-change-conference-information-hub [https://perma.cc/TD6L-GTLC] (describing the international community meeting at the Paris Climate Conference).

ratified the subsequent agreement.[102] At the Paris Climate Conference, leaders again agreed to the long-term goal of limiting global warming by setting new GHG emission reduction targets.[103]

C. British Columbia Successfully Reduces Greenhouse Gas Emission with Its Carbon Tax

In 2008, British Columbia implemented a carbon tax, which has jumpstarted a downward trend in per capita CO2 emissions.[104] The carbon tax applies only to sales made within the province, and the seller generally collects the tax from the purchaser when a sale is made.[105] The seller is then responsible for reporting its sales and paying the carbon tax.[106] For example, an individual purchasing gas at a gas station will pay the vendor a tax based on the amount of fuel purchased.[107] The vendor subsequently reports sales to the government and pays the tax onward to the government.[108]

British Columbia's carbon tax was the first of its kind in North America.[109] The tax covers approximately seventy-five percent of the GHG emissions in the province, including fossil fuel combustion from materials such as gasoline, diesel, natural gas, and coal.[110] British Columbia's carbon tax applies uniformly to emissions from fossil fuel combustion.[111] Certain activities, however, are exempt from the tax.[112] These exempt activities include exporting fuels, purchasing fuels used by planes and ships traveling to the region, purchasing non-fossil fuel emissions produced from industries including agriculture, forestry, landfills, and industrial processes, and emitting methane from fossil fuel production or transmission.[113] A unique feature of the tax is that none of the exemptions are industry-specific.[114]

---

[102] *Information Hub Overview*, *supra* note 101.

[103] *Paris Climate Agreement: All You Need to Know*, *supra* note 97 (noting that "countries agreed to set national targets for reducing greenhouse gas emissions every five years").

[104] KOMANOFF & GORDON, *supra* note 45, at 2 (documenting emissions reductions of GHGs).

[105] B.C. MINISTRY OF FIN., FUEL SELLERS: MOTOR FUEL TAX ACT AND CARBON TAX ACT, 6–7 (2016), http://www.sbr.gov.bc.ca/documents_library/bulletins/mft-ct_001.pdf [https://perma.cc/UB47-2D62].

[106] *Id.*

[107] *See id.*

[108] *See id.*

[109] *Climate Leadership Team Report Released: Province to Begin Public Consultations in January 2016*, *supra* note 44.

[110] Murray & Rivers, *supra* note 12, at 4 (listing the GHG emissions covered by the tax).

[111] KOMANOFF & GORDON, *supra* note 45, at 4 n.3 (noting that the carbon tax applies to "essentially all emission from fossil fuel combustion, and at a uniform rate").

[112] Murray & Rivers, *supra* note 12, at 4 (noting exemptions).

[113] *Id.*

[114] *See id.* (listing exemptions, which are not industry-specific).

The carbon tax began at ten Canadian dollars per metric ton of CO2 emitted.[115] The tax was designed to increase by five Canadian dollars each year until July 2012, when the tax maxed out at its current rate of thirty Canadian dollars per metric ton of CO2 emitted.[116] Emission rates decreased in response to the tax, until the tax leveled off in 2012.[117]

One of the key components of British Columbia's carbon tax is that the tax is revenue neutral.[118] Unlike most taxes intended to raise money for government spending, a revenue neutral tax pays the collected tax back to the taxpayers.[119] British Columbia's tax includes a specific provision requiring the government to give the tax back to individuals in northern and low-income households, as well as businesses.[120]

The carbon tax is commonly paid back to taxpayers in the form of tax reductions.[121] British Columbia's Ministry of Finance annually proposes a plan for recycling the carbon tax revenue through tax reductions to the British Columbia Legislative Assembly to ensure transparency and to prevent misappropriation of funds.[122] About half of the revenue generated from the carbon tax goes toward the business sector to promote economic growth.[123]

Overall, British Columbia's carbon tax has been deemed successful because it reduced carbon emissions.[124] British Columbia reviewed aspects of the tax from 2012 through 2013 and the government concluded that the tax was not negatively impacting economic competition and therefore did not need modifications.[125] Since implementation of the tax, emissions have been reduced in British Columbia by approximately five to fifteen percent, and there has been no negative impact on the province's economy.[126] Further, since the implementation of the carbon tax, studies have shown that

---

[115] KOMANOFF & GORDON, *supra* note 45, at 4.

[116] *Id.*

[117] *Id.* at 3 (showing a graph, which reveals that per capita GHG emissions have been reduced as a result of the implementation of the carbon tax and the rate of reduction slowed in 2012).

[118] Murray & Rivers, *supra* note 12, at 6.

[119] *Id.* (stating that the tax "operates as a tax shift, wherein carbon tax revenues are countered by cuts in other taxes or direct transfers to households").

[120] B.C. MINISTRY OF FIN., BUDGET AND FISCAL PLAN: 2014/15–2016/17, at 66 (2014) [hereinafter BUDGET AND FISCAL PLAN], http://bcbudget.gov.bc.ca/2014/bfp/2014_budget_and_fiscal_plan.pdf [https://perma.cc/A6VM-TQNB] (containing provisions to return the tax funds specifically to individuals in the lowest two personal income tax brackets, northern and rural homeowners, and children for the purpose of awarding fitness and arts credits).

[121] Murray & Rivers, *supra* note 12, at 6 (stating that "more than half the tax cuts have been directed to businesses and the remainder, to households").

[122] *Id.*

[123] *See id.* at 6–7.

[124] *Id.* at 18 (describing studies that reveal the successes of the tax).

[125] *Id.* at 4 (stating that the review "confirmed that the tax was achieving its goals and recommended no major changes to the program").

[126] *Id.* at 1.

emission rates in British Columbia have been declining at a faster rate than the rest of Canada.[127] Additionally, polls have indicated that, due to concerns about climate change, the population has increasingly accepted the tax.[128] These results indicate that the carbon tax has positively influenced emissions reduction in British Columbia.[129]

D. Regulating GHG Emissions in the United States Under the Clean Air Act

The Clean Air Act ("CAA"), enacted in 1970, is a comprehensive federal law that regulates air pollution.[130] The goal of the CAA is to promote public health and welfare by regulating hazardous air pollutants.[131] The CAA authorizes the Environmental Protection Agency (EPA), a federal agency, to regulate air pollutants from stationary and mobile sources and to set National Ambient Air Quality Standards ("NAAQS").[132] Section 111(d) of the CAA requires states to create their own State Implementation Plan ("SIP") to comply with NAAQS.[133] Alternatively, states can follow a standardized Federal Implementation Plan ("FIP").[134]

In 2007, in *Massachusetts v. Environmental Protection Agency*, the United States Supreme Court clarified the law by holding that the EPA has the authority under the CAA to regulate any air pollutant, including CO2 emissions, if the emissions contribute to climate change.[135] As such, the Court reasoned that the EPA must determine if an air pollutant might pose a risk to public health and safety when deciding whether to regulate an air

---

[127] KOMANOFF & GORDON, *supra* note 45, at 2 (showing that between 2008 and 2013 the carbon tax reduced emissions, compared to emission levels from 2000 to 2007).

[128] Murray & Rivers, *supra* note 12, at 14 (noting public support).

[129] KOMANOFF & GORDON, *supra* note 45, at 2.

[130] 42 U.S.C. § 7401 (2012) (setting forth the purpose of the Clean Air Act); *Summary of the Clean Air Act*, U.S. ENVTL. PROT. AGENCY, http://www.epa.gov/laws-regulations/summary-clean-air-act [https://perma.cc/9ATU-FB8U] (describing the Clean Air Act ("CAA") generally).

[131] *Summary of the Clean Air Act*, *supra* note 130.

[132] 42 U.S.C. §§ 7411(b)(1)(A) (describing standards for new stationary sources), 7521(a)(1) (describing emission standards for new motor vehicles), 7602(g) (defining an air pollutant as "any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air").

[133] *Id.* § 7410 (articulating standards for States Implementation Plans ("SIPs").

[134] *Id.* § 7410(c) (explaining that if a state fails to submit a satisfactory SIP to meet the national ambient air quality standard, the Environmental Protection Agency (EPA) Administrator will promulgate a Federal Implementation Plan ("FIP") for the state to follow instead); *Basic Information About Air Quality FIPs,* U.S. ENVTL. PROT. AGENCY, https://www.epa.gov/air-quality-implementation-plans/basic-information-about-air-quality-fips [https://perma.cc/HL38-QAQG] (defining a FIP as "an air quality plan developed by EPA").

[135] 549 U.S 497, 528 (2007) (holding that the CAA authorized the EPA to regulate new motor vehicles' GHG emissions if they contribute to climate change).

pollutant.[136] In response to the Court's decision, the EPA determined that GHGs are likely to harm public health and welfare, and published a rule declaring this finding in 2009.[137] Based on this finding, the EPA can use the CAA as a mechanism to regulate GHG emissions from motor vehicles and new or modified stationary sources.[138] As a result, the EPA has begun to promulgate regulations to reduce GHG emissions.[139]

When the EPA promulgates regulations, states must make modifications to comply with new standards.[140] The EPA has yet to set GHG emission standards for states to follow.[141] As such, individual states may promulgate their own regulations to reduce GHG emissions within their jurisdiction.[142] If the EPA does set NAAQs for GHG emissions, states must ensure that any previously implemented reduction policies, at minimum, put them in compliance with the overarching federal standards.[143]

E. State GHG Regulation: Massachusetts' Alternative Revenue Neutral Carbon Tax Proposal

In 2008, Massachusetts passed the Global Warming Solutions Act, which requires a twenty-five percent reduction of GHG emissions by 2020 and an eighty percent reduction by 2050.[144] The Global Warming Solutions Act aims to reduce emissions by requiring the Department of Environmental Protection to establish a GHG registry and a reporting system to monitor

---

[136] *Id.* at 534.

[137] Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act, 74 Fed. Reg. 66,496, 66,497 (Dec. 15, 2009) (to be codified at 40 C.F.R. ch. I); *see Massachusetts v. Envtl. Prot. Agency*, 549 U.S. at 534 (instructing the EPA to investigate to what extent a pollutant endangers public health or welfare); *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, U.S. ENVTL. PROT. AGENCY, https://www3.epa.gov/climatechange/endangerment/index.html#findings [https://perma.cc/Z2F3-NN4W] [hereinafter *Endangerment and Cause Webpage*] (concluding that there was enough scientific evidence to produce a judgment that the air pollutant is in fact a danger to public safety and welfare).

[138] *See Massachusetts v. Envtl. Prot. Agency*, 549 U.S at 532; *Endangerment and Cause Webpage*, *supra* note 137.

[139] *EPA Greenhouse Gas Regulation FAQ*; CTR. FOR CLIMATE & ENERGY SOLS., http://www.c2es.org/federal/executive/epa/greenhouse-gas-regulation-faq [https://perma.cc/6L85-RDDJ] (articulating regulations promulgated by the EPA since the endangerment finding).

[140] *See* 42 U.S.C. § 7410(a)(1) (2012) (describing requirements placed on states to produce state implementation plans for national primary and secondary ambient air quality standards).

[141] *Climate Change Regulatory Initiative,* U.S. ENVTL. PROT. AGENCY, https://www.epa.gov/climatechange/climate-change-regulatory-initiatives [https://perma.cc/UAB4-MU65].

[142] 42 U.S.C. § 7411(b)(1)(A).

[143] *Id.* § 7410 (setting minimum requirements for states); Climate Protection & Green Economy Act, MASS. GEN. LAWS ch. 21N, § 2 (2016).

[144] *Massachusetts' Progress Towards Reducing Greenhouse Gas (GHG) Emissions by 2020*, MASS. EXEC. OFFICE OF ENERGY & ENVTL. AFFAIRS, http://www.mass.gov/eea/air-water-climate-change/climate-change/massachusetts-global-warming-solutions-act/ [https://perma.cc/7KP2-YQQN].

and track emissions.[145] Additionally, the Secretary of the Department of Environmental Protection shall create and implement a plan to help the Commonwealth meet the 2020 reduction levels, monitor and evaluate climate change regulations, and convene an advisory committee.[146] As such, the Global Warming Solutions Act was designed to be supported by supplemental regulations and legislation aimed at helping the Commonwealth meet its established reduction goals.[147]

Currently, Massachusetts is not on track to meet these reduction goals.[148] The leading source of carbon emissions in Massachusetts is heating buildings.[149] The next highest emission source in Massachusetts is transportation.[150] A carbon tax would help reduce emissions by incentivizing emitters to minimize use of fossil fuels.[151] Massachusetts' bill entitled *An Act Combating Climate Change*, sponsored by Democratic Senator Mike Barrett, would implement the nation's first statewide carbon tax.[152] The tax has gained momentum, as one fifth of the state legislature has co-signed the bill.[153]

The carbon tax would start at ten dollars per ton of carbon emitted and increase by approximately five dollars per year for the next six years.[154] Once the tax reaches forty dollars per ton of carbon emitted, the Commissioner of Energy Resources ("the Commissioner") will make modification recommendations to the Commonwealth's House and Senate Committees on Ways and Means, the Joint Committee on Telecommunications, Utilities and Energy, and the Commonwealth's House and Senate Committees on

---

[145] MASS. GEN. LAWS ch. 21N, § 2.

[146] *Id.* §§ 3–8.

[147] *Id.* § 2(a).

[148] EXEC. OFFICE OF ENERGY & ENVTL. AFFAIRS, COMMONWEALTH OF MASS.: GLOBAL WARMING SOLUTIONS ACT 5-YEAR PROGRESS REPORT 7 (2013), http://www.mass.gov/eea/docs/eea/gwsa/ma-gwsa-5yr-progress-report-1-6-14.pdf [https://perma.cc/K7PN-LDXN] [hereinafter GWSA 5-YEAR PROGRESS REPORT]; Fred Thys, *With Mass. Off Track on Emissions Goal, Advocates Seek 1st State Carbon Tax*, WBUR (Mar. 13, 2015), http://www.wbur.org/2015/03/12/massachusetts-carbon-tax-proposal [https://perma.cc/7M8B-SJAS].

[149] GWSA 5-YEAR PROGRESS REPORT, *supra* note 148, at 32.

[150] *Id.* at 48; Thys, *supra* note 148 (stating that forty-five percent of emissions are due to transportation, particularly "personal vehicles").

[151] Shira Schoenberg, *Environmentalists Push Carbon Fee in Massachusetts*, MASS LIVE (Oct. 27, 2015), http://www.masslive.com/politics/index.ssf/2015/10/environmentalists_push_carbon.html [https://perma.cc/28VD-G4PH] (stating that the goal of the carbon tax is to motivate individuals to reduce their energy usage).

[152] S. 1747, 189th Gen. Court, Reg. Sess. (Mass. 2015); Schoenberg, *supra* note 151.

[153] Thys, *supra* note 148 (stating "forty legislators—a fifth of the Legislature—have co-signed his bill").

[154] Mass. S. 1747; Schoenberg, *supra* note 151 ("Barrett's bill would set a fee at $10 per ton of carbon emissions in the first year, and that rate would gradually increase to $40 per ton of carbon emissions within seven years.").

Global Warming and Climate Change.[155] Although within the first seven years, the tax would cause gasoline and oil prices to rise by approximately twenty-seven cents per gallon, much of the cost would be returned to citizens of the Commonwealth.[156] Additionally, a study commissioned by the Department of Energy Resources ("DOER") in Massachusetts predicted that the tax would result in job and income increases throughout the Commonwealth because Massachusetts would spend less money importing fuels and other types of energy.[157] Currently, Massachusetts imports the majority of its fossil fuels.[158] Specifically, gasoline imports account for almost two percent of the state economy.[159] The carbon tax, by decreasing fossil fuels used, would also decrease funds spent on importing these fuels, allowing the Commonwealth to spend more money on industries that would benefit its economy.[160]

The Massachusetts carbon tax, like the one in British Columbia, is designed to be revenue neutral.[161] The Commissioner plans to put all revenue collected from the carbon tax into a newly established rebate fund.[162] The rebate fund will cover reasonable administrative costs and the rest will be distributed to low-income households, rural residents, and industry employers.[163] The Commissioner will set the amount for individual rebates.[164] The individual rebates will be equal, except that rural residents will receive an additional motor vehicle fuel rebate.[165]

The study commissioned by the DOER examined the best of three possible options to issue rebates to the business sector.[166] One method for returning funds would be through cuts to Massachusetts' corporate excise

---

[155] Mass. S. 1747.

[156] MARC BRESLOW ET AL., MASS. DEP'T OF ENERGY RES., ANALYSIS OF A CARBON FEE OR TAX AS A MECHANISM TO REDUCE GHG EMISSIONS IN MASSACHUSETTS 14, 27 (2014), http://www.mass.gov/eea/docs/doer/fuels/mass-carbon-tax-study.pdf [https://perma.cc/2P4X-73QH]; *see infra* notes 161–166 and accompanying text.

[157] BRESLOW ET AL., *supra* note 156, at 4 (stating that "employment is forecasted to grow by 4,000 to 10,000 jobs by 2030 due to the tax/fee").

[158] *Id.* at 12 (stating that Massachusetts' energy imports account for five to six percent of its economy).

[159] *Id.* (amounting to approximately eight billion dollars annually).

[160] *Id.* at 12–13.

[161] Jay Fitzgerald, *Carbon Tax Could Be a Tough Sell on Beacon Hill*, BOS. GLOBE (Jan. 4, 2015), https://www.bostonglobe.com/business/2015/01/04/study-supports-carbon-tax-but-now-hard-part-comes-for-environmentalists/2CTDqh8g2YZB8drWceRDBP/story.html [https://perma.cc/KA48-YJWF].

[162] S. 1747, 189th Gen. Court, Reg. Sess. (Mass. 2015).

[163] Schoenberg, *supra* note 151.

[164] Mass. S. 1747.

[165] *Id.*

[166] BRESLOW ET AL., *supra* note 156, at 10–11 (describing possible rebate schemes).

tax.[167] A corporate excise tax is collected based on a corporation's business conduct and is calculated by the corporation's net income and either the value of its property or its net worth.[168] The corporate excise tax, though, would only refund corporations and not other entities such as municipal and state governments, non-profits, most hospitals, universities, and colleges.[169] The DOER study did not recommend this scheme.[170]

A second method investigated by the DOER study was benchmarking within an industry.[171] Benchmarking would involve industry-wide rebates equal to the amount paid in carbon taxes by the whole industry.[172] Each company within the industry would then receive a rebate based on its performance as compared to the rest of the industry.[173] The benchmarking system would be advantageous because industries get back what they paid and individual companies would also be rewarded for quality performance relative to a comparable group.[174] A benchmark rebate would be complex to implement and run.[175]

The drafters of the carbon tax bill chose the third system to refund businesses, non-profits, and government organizations proposed by the DOER study.[176] This system gives rebates to businesses based on its proportional share of statewide employment.[177] The bill also gives the Commissioner the flexibility to alter the rebate scheme if a part of the economy would otherwise be seriously and negatively impacted by the carbon tax.[178] The Commissioner has the discretion to give all of the proceeds collected from a subsector directly back, regardless of the number of employees in the industry.[179] Based on the DOER report, the bill's drafters determined that the proportional rebate would be a more equitable mechanism for returning funds to companies than a plan that makes cuts to corporate excise taxes,

---

[167] *Id.* at 63 (explaining that a corporate excise tax is the main tax states impose on for-profit businesses).

[168] *Corporate Excise Tax*, MASS. DEP'T OF REVENUE, http://www.mass.gov/dor/businesses/current-tax-info/guide-to-employer-tax-obligations/business-income-taxes/corporations/corporate-excise-tax.html [https://perma.cc/T2U6-BSCS].

[169] BRESLOW ET AL., *supra* note 156, at 10 (stating that the "excise tax is not a good mechanism for returning funds" and explaining reasons for that conclusion).

[170] *Id.*

[171] *Id.*

[172] *Id.* at 10–11.

[173] *Id.*

[174] *Id.* at 64 (noting that companies are rewarded for efficiency).

[175] *See id.* at 10, 73–75 (explaining in detail the process required in order to implement the benchmarking scheme).

[176] S. 1747, 189th Gen. Court, Reg. Sess. (Mass. 2015); Schoenberg, *supra* note 151 (entitling normally tax exempt non-for-profit organizations and government entities to the rebate).

[177] Mass. S. 1747.

[178] *Id.*

[179] *Id.*

which would only benefit corporations.[180] Ultimately, the proportional rebate system was chosen because it includes more economic sectors than the corporate excise tax plan and it is less complicated to implement than the industry benchmark model.[181] Hospitals, as businesses within the Commonwealth, are eligible to receive the employment-based carbon tax rebate.[182]

II. AUTHORITY FOR A STATE CARBON TAX AND POTENTIAL CONFLICTS WITH THE DORMANT COMMERCE CLAUSE

The U.S. Constitution confers the federal government, specifically Congress, with the power to tax for the purposes of paying debts, for the general welfare, and for defense of the country.[183] States are similarly granted the power to tax by their individual constitutions.[184] Generally, states' power to levy taxes within their jurisdiction is expansive.[185] For example, the Constitution of the Commonwealth of Massachusetts only limits its ability to tax by requiring the consent of the people or their representatives.[186]

The Tenth Amendment of the U.S. Constitution confers any powers that are not delegated to the federal government to the states.[187] But, federal law supersedes state law; thus, an additional limitation on a state's taxing power is that no state can implement a tax that interferes with federal laws.[188] As such, a potential limit on a state's ability to tax is any conflict with federal

---

[180] BRESLOW ET AL., *supra* note 156, at 10 (recommending the return of funds); Frederick Hewett, *Fair Carbon Tax Hinges on How Refunds Would Be Distributed,* BOS. GLOBE (Jan. 20, 2016), https://www.bostonglobe.com/opinion/letters/2016/01/20/fair-carbon-tax-hinges-how-refunds-would-distributed/WiMJD92R74kehcgWiZVPYM/story.html [https://perma.cc/3XFZ-Q9ZE] (agreeing that Massachusetts' proposed employee based rebate is an equitable redistribution scheme for a carbon tax).

[181] *See* BRESLOW ET AL., *supra* note 156, at 10; Hewett, *supra* note 180.

[182] *See* BRESLOW ET AL., *supra* note 156, at 10, 67 (examining the impact of the proposed carbon tax on industries, including hospitals).

[183] U.S. CONST. art. I, § 8, cl. 1 (stating that "Congress shall have Power To lay and collect Taxes, Duties, Imposts and Excises, to pay the Debts and provide for the common Defence and general Welfare of the United States").

[184] *See, e.g.,* MASS. CONST. pt. 2, ch. 1, § 1, art. IV (expressly authorizing the power to impose reasonable taxes); N.Y. CONST. art X, § 1 (expressly reserving the power to tax).

[185] Paul Riermaier, Note, *United States Tonnage Taxation in the Wake of* Polar Tankers, Inc. v. City of Valdez, Alaska*: Lessons from the European Union,* 36 TUL. MAR. L.J. 257, 257 (2011) (noting the expansive taxing power of states).

[186] MASS. CONST. pt. I, art. XXIII ("No subsidy, charge, tax, impost, or duties, ought to be established, fixed, laid, or levied, under any pretext whatsoever, without the consent of the people or their representatives in the legislature.").

[187] U.S. CONST. amend. X ("The powers not delegated to the United States by the Constitution, nor prohibited by it to the States, are reserved to the States, respectively, or to the people.").

[188] *Id.* art. VI ("This Constitution, and the Laws of the United States . . . shall be the supreme Law of the Land; and the Judges in every State shall be bound thereby, any Thing in the Constitution or Laws of any State to the Contrary notwithstanding.").

law.[189] State and federal governments can concurrently implement a tax on the same activity or subject matter.[190] The power to implement a carbon tax therefore falls within the purview of a state's power to tax.[191]

A carbon tax could be challenged on the basis that it conflicts with federal law, thereby invoking the dormant commerce clause.[192] The dormant commerce clause prohibits states from regulating interstate commerce in most situations because that power is delegated to the federal government.[193] For example, a state's law is invalid if it "discriminates against interstate commerce" unless it advances a legitimate state interest that cannot be accomplished in a less burdensome manner.[194] A state law will be permissible if its burden on interstate commerce is incidental or minimal compared to the legitimate public interest forwarded by the law.[195] Another way states can regulate interstate commerce is with the market participant exception.[196] Under the market participant exception, a state may regulate interstate commerce if it is a participant in a regulated activity.[197] Thus, a state can regulate interstate commerce under limited circumstances without violating the dormant commerce clause.[198]

One concern with a state implementing a carbon tax is whether its design burdens interstate commerce.[199] An additional tax could impact a state's economy by increasing the cost of a product originating in the taxed

---

[189] F.D.G. Ribble, *Conflicts Between Federal Regulation Through Taxation and the States*, 23 CORNELL L. REV. 131, 133 (1937) (describing the conflicts that arise when the government on the federal and state level both tax the same subject).

[190] *Id.*

[191] *See id.* ("Each government may raise revenue from the same subject without substantially interfering with the other."); Editorial Board, *The Case for a Carbon Tax,* N.Y. TIMES (June 6, 2015), http://www.nytimes.com/2015/06/07/opinion/the-case-for-a-carbon-tax.html?_r=0 (explaining that state governments have already implemented gasoline and diesel taxes, which in effect are forms of a carbon tax).

[192] *See* Dennis v. Higgins, 498 U.S. 439, 447 (1990) (recognizing that the Commerce Clause limits States' ability to regulate interstate trade); Pike v. Bruce Church, Inc., 397 U.S. 137, 142 (1970) (detailing a balancing test as to when a state statute can violate the Commerce Clause).

[193] U.S. CONST. art. I, § 8, cl. 3 (conferring on Congress the power "[t]o regulate commerce . . . among the several States"); Lisa J. Petricone, *The Dormant Commerce Clause: A Sensible Standard of Review*, 27 SANTA CLARA L. REV. 443, 443 (1987).

[194] Dep't of Revenue of Ky. v. Davis, 553 U.S. 328, 338 (2008).

[195] *Pike*, 397 U.S. at 142 (noting that the statute "will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits").

[196] S.-Cent. Timber Dev., Inc. v. Wunnicke, 467 U.S. 82, 93 (1984) (emphasizing that if a state acts as a "market participant . . . the dormant Commerce Clause places no limitation on its activities").

[197] *Id.*

[198] *See id.*; *Pike*, 397 U.S. at 142.

[199] *See* U.S. CONST. art. I, § 8, cl. 3; *S.-Cent. Timber Dev.*, 467 U.S. at 93; *Pike*, 397 U.S. at 142.

state.[200] Customers are thereby incentivized to import cheaper goods from neighboring states that do not have a carbon tax.[201] One way that a state can mitigate this dichotomy is by implementing a border adjustment tax as a means for economic protection.[202] Both the problem created by the tax and the border adjustment tax solution could be challenged because states are prohibited from regulating interstate commerce.[203]

Massachusetts' proposed carbon tax does not plan to use a border adjustment tax.[204] Instead, the tax proposes a revenue neutral scheme in which all the funds will be redistributed back to the population and industries that paid the fee.[205] The tax will not regulate nor impact interstate commerce—rather, its employment-based scheme will refund the tax dollars back to industries.[206] Those who paid into the tax will receive the refunds, minimizing the economic impact of the tax.[207] The redistribution could appear to favor in-state businesses, but it does not discriminate against interstate commerce because only the businesses that paid into the tax will receive a rebate.[208]

Similarly, even if Massachusetts' proposed carbon tax would burden interstate commerce, it is forwarding a legitimate state interest of reducing global warming.[209] This legitimate state interest must then be balanced with

---

[200] Darien Shanske, *State-Level Carbon Taxes and the Dormant Commerce Clause: Can Formulary Apportionment Save the World?*, 18 CHAP. L. REV. 191, 194 (2014) ("This new tax will make exports from the taxing state more expensive and imports to the state cheaper.").

[201] *See id.* (noting that the production of "cheaper out-of-state concrete" presents significant price competition).

[202] *Id.* at 193–94 (explaining that a border adjustment tax imposes the same cost of the internal state carbon tax on importations of products and refunds the tax for exported products).

[203] U.S. CONST. art. I, § 8, cl. 3 (articulating the Commerce Clause); Petricone, *supra* note 193 (quoting Great Atl. &. Pac. Tea Co. v. Cottrell, 424 U.S. 366, 373 (1976)) (articulating that "[w]hen a state ventures excessively into the regulation of these aspects of commerce, it 'trespasses upon national interest,'" violating the Commerce Clause).

[204] Mass. S. 1747, 189th Gen. Court, Reg. Sess. (Mass. 2015) (including no border adjustment tax in the proposed tax).

[205] *Id.* (setting the employer's rebate based on its proportional share of statewide employment).

[206] *See id.*; *Successful Hearing at the TUE Committee*, CLIMATEXCHANGE, http://climatexchange.org/massachusetts-campaign/ [https://perma.cc/ZAF5-76FT] (stating that the design features of the bill minimize the negative economic impact potentially produced as a consequence of the tax).

[207] Murray & Rivers, *supra* note 12, at 1 (explaining that in British Columbia, "models show that the tax has had negligible effects on aggregate economic performance").

[208] *See* Mass. S. 1747; *see also* Or. Waste Sys. v. Dep't of Envtl. Quality, 511 U.S. 93, 99 (1994) (quoting Chem. Waste Mgmt. v. Hunt, 504 U.S. 334, 342 (1992)) ("It is well established, however, that a law is discriminatory if it 'tax[es] a transaction or incident more heavily when it crosses state lines than when it occurs entirely within the State.'").

[209] Climate Protection & Green Economy Act, MASS. GEN. LAWS ch. 21N, § 2 (2016) (establishing the Global Warming Solutions Act to affirm reduction of GHG emissions as a priority and interest of the Commonwealth); *Pike*, 397 U.S. at 142 (noting that the statute "will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local

the burden on interstate commerce.[210] Due to the revenue neutral features of the carbon tax, the law would only have an incidental impact on interstate commerce.[211] As such, the dormant commerce clause would not block the carbon tax.[212] Thus, the design of Massachusetts' carbon tax helps it avoid any conflicts with the dormant commerce clause.[213]

III. THE IMPACT OF THE PATIENT PROTECTION AND AFFORDABLE CARE ACT ON HEALTH CARE SPENDING AND EXPENSES INCURRED BY HOSPITALS

Before the Patient Protection and Affordable Care Act ("ACA"), the United States spent more money on health care than any other country.[214] Yet based on a 2010 study, the American population was not significantly unhealthier than other populations, which otherwise might explain an increased need for care and account for the additional spending.[215] Similarly, higher health care spending did not yield increased health benefits for the American population.[216] Instead, the United States maintained shorter life expectancies and higher infant mortality rates than other western nations.[217] The United States' higher spending on health care has been explained in part by the country's higher costs for services.[218] Health care expenditures comprised seventeen percent of the United States' gross domestic product (GDP) from 2001 through 2015, one of the highest GDP percentages in the world over that fourteen-year period.[219]

---

benefits"); *Massachusetts' Progress Towards Reducing Greenhouse Gas (GHG) Emissions by 2020*, *supra* note 144 (articulating Massachusetts' goal of reducing GHG emissions).

[210] *Pike*, 397 U.S. at 142 (articulating the need to balance various interests).

[211] *See id.* (explaining the appropriate test); Murray & Rivers, *supra* note 12, at 2 (explaining that the goal of a revenue neutral tax is to recycle the collected tax funds to prevent economic distortion by the carbon tax).

[212] *See* U.S. CONST. art. I, § 8, cl. 3 (articulating the commerce clause); *Pike*, 397 U.S. at 142 (describing the balancing test for when a state law violates interstate commerce); Mass. S. 1747, 189th Gen. Court, Reg. Sess. (Mass. 2015).

[213] *See* U.S. CONST. art. I, § 8, cl. 3 (articulating the commerce clause); Mass. S. 1747 (proposing a carbon tax in Massachusetts); Murray & Rivers, *supra* note 12, at 2 (describing revenue neutrality).

[214] David Orentlicher, *Cost Containment and the Patient Protection and Affordable Care Act,* 6 FIU L. Rev. 67, 68 (2010) (stating that the United States' per capita spending is more than double Germany's per capita spending and three times that of New Zealand).

[215] *Id.* at 69 (explaining that although Americans are more obese than others, they are less likely to drink alcohol and less likely to smoke tobacco).

[216] *Id.* (stating that "greater spending does not translate into better health").

[217] *Id.* (listing Japan, Switzerland, Canada, France, Italy, Spain, Israel, Germany, Greece, and the United Kingdom as having a longer life expectancy than the United States).

[218] *Id.* at 70 (noting that coronary artery bypass surgery and hip replacements are half the price in Canada as compared to the United States).

[219] *Health Expenditure, Total (% of GDP)*, WORLD BANK, http://data.worldbank.org/indicator/SH.XPD.TOTL.ZS [https://perma.cc/2CR9-4DYS] (defining health expenditures as "the sum of

In response to high health care spending, the Obama administration made health care a national priority.[220] In 2010, Former-President Barack Obama signed the ACA into law.[221] One of the primary goals of the ACA is to reduce growing costs of health care within the United States without sacrificing quality of care.[222] This national overhaul to the health care system in the United States forces all participants of the health care system, including hospitals, to reduce costs of care and minimize overall spending.[223]

There is still a debate as to whether the United States should have a universal health care system.[224] In 1986, however, Congress passed the Emergency Medical Treatment and Labor Act ("EMTALA").[225] EMTALA provides access to emergency care to everyone regardless of an individual's ability to pay.[226] Thus, Americans have recognized for several decades that access to emergency services is a right and that no American should be denied essential care.[227] Further, Former-President Obama stated that, for Americans, "[a]ccess to quality, affordable health care is a right, not a privilege."[228] As such, the Obama administration prioritized ensuring health care

---

public and private health expenditure," ranging from preventative and curative care to nutrition-education).

[220] *See Deficit-Reducing Health Care Reform*, WHITE HOUSE, https://www.whitehouse.gov/economy/reform/deficit-reducing-health-care-reform [https://perma.cc/BH4A-LVNG] (articulating that the increasingly high cost of American health care has harmed economic competitiveness by causing individual bankruptcies and growing the national deficit).

[221] *Id.*

[222] *Strategic Goal 1: Strengthen Health Care*, U.S. DEP'T OF HEALTH & HUMAN SERVS., http://www.hhs.gov/about/strategic-plan/strategic-goal-1/#obj_d [https://perma.cc/CC82-ZYVU] (describing the objectives to achieve the goal of strengthening health care).

[223] *See id.* (articulating how the U.S. Department of Health & Human Services' Innovation Center established by the ACA will reduce the cost of health care system wide).

[224] *Should All Americans Have the Right (Be Entitled) to Health Care?*, PROCON.ORG, http://healthcare.procon.org/#Background [https://perma.cc/NPX2-LKXB] (noting the arguments of proponents and opponents to universal health care). *But see Healthcare Reform to Make America Great Again, supra* note 21 (expressing a desire to move away from a system of universal coverage in the United States).

[225] 42 U.S.C. § 1395dd(a) (2012); Consolidated Omnibus Budget Reconciliation Act of 1985, Pub. L. No. 99-272, 100 Stat. 82 (1986) (codified in scattered sections of 7 U.S.C.); *Emergency Medical Treatment & Labor Act*, CTR. FOR MEDICARE & MEDICAID SERVS., https://www.cms.gov/Regulations-and-Guidance/Legislation/EMTALA/ [https://perma.cc/EU9U-VY4A]. Congress included the Emergency Medical Treatment and Active Labor Act ("EMTALA") as a part of the Consolidated Omnibus Budget Reconciliation Act of 1986. *See Emergency Medical Treatment and Active Labor Act "EMTALA,"* FINDLAW, http://corporate.findlaw.com/law-library/emergency-medical-treatment-and-active-labor-act-emtala.html [https://perma.cc/FD48-QRKG].

[226] 42 U.S.C. § 1395dd(a) (2012) (stating that a hospital emergency department must provide a medical screening if an individual requests an examination or treatment); *Emergency Medical Treatment & Labor Act*, *supra* note 225.

[227] *See Emergency Medical Treatment and Active Labor Act "EMTALA," supra* note 225.

[228] President Barack Obama (@POTUS), TWITTER, (June 25, 2015, 9:03 AM), https://twitter.com/POTUS/status/614101662349848576 [https://perma.cc/G77Q-4FNM] (Barack Obama creat-

accessibility by pursuing systematic changes to the health care status-quo.[229]

A. Reducing Costs of Health Care as a Result of the Patient Protection and Affordable Care Act

The ACA strives to reduce the cost of care in a number of ways.[230] First, the ACA promotes coordinated care between providers to ensure that all of a patient's providers can work cohesively as a team, sharing information and results to provide the best care possible.[231] The ACA promotes coordinated care by incentivizing providers to join together in Accountable Care Organizations ("ACOs"), which allow them to share savings resulting from the integrated structure.[232] Providers within an ACO may share information more seamlessly among a patient's team of providers, thereby increasing the quality of care the patient receives and simultaneously decreasing costs.[233] Coordinated care reduces costs by minimizing duplicative testing because results are shared.[234] Similarly, this improves a patient's quality of care because a patient does not have to undergo redundant testing.[235]

---

ed and used the @POTUS twitter handle during his presidency and the handle was later made available to President Trump.).

[229] *See Health Care that Works for Americans*, *supra* note 17 (noting that the ACA was necessary to "improve access to affordable health coverage for everyone and protect consumers from abusive insurance company practices"); Press Release, U.S. Dep't of Health & Human Servs., Secretary Price Supports House Efforts to Repeal and Replace Obamacare (Mar. 7, 2017), https://www.hhs.gov/about/news/2017/03/07/secretary-price-supports-house-efforts-repeal-and-replace-obamacare.html [https://perma.cc/2LMB-47L5] (quoting Secretary Price's letter that articulates the Trumps Administration's continued commitment to repeal and replace the ACA with a plan that will "offer patient-centered solutions that will provide all Americans with access to affordable, quality healthcare, promote innovation, and offer peace of mind for those with pre-existing conditions").

[230] *See Health Care That Works for Americans*, *supra* note 17 (listing way in which the ACA reduces various costs and expenditures); *Secretary Price Supports House Efforts to Repeal and Replace Obamacare, supra* note 229 (citing a letter sent by Secretary Price to members of Congress regarding continued efforts to repeal and replace the ACA).

[231] 42 U.S.C. § 1395w-21(a)(2)(A); *Strategic Goal 1: Strengthen Health Care, supra* note 222 (defining coordinated care as "team-based primary medical care with a mix of health care professionals, and coordination with public health across federal, state, and local agencies").

[232] 42 U.S.C. § 1395jjj; Kathleen Sebelius, *The Affordable Care Act at Three: Paying for Quality Saves Health Care Dollars,* HEALTH AFFAIRS BLOG: FOLLOWING THE ACA (Mar. 20, 2013), http://healthaffairs.org/blog/2013/03/20/the-affordable-care-act-at-three-paying-for-quality-saves-health-care-dollars/ [https://perma.cc/7YP8-J9P2].

[233] *Accountable Care Organizations,* U.S. CTRS. FOR MEDICARE & MEDICAID SERVS., https://www.medicare.gov/manage-your-health/coordinating-your-care/accountable-care-organizations.html [https://perma.cc/YW38-KJWX].

[234] *See* FAMILIES USA, THE PROMISE OF CARE COORDINATION: TRANSFORMING HEALTH CARE DELIVERY 1 (2013), http://familiesusa.org/sites/default/files/product_documents/Care-Coordination.pdf [https://perma.cc/J6TD-YLRZ] (explaining that in 2011 poorly coordinated care resulted in ap-

Additionally, the ACA increases accessibility of preventative care.[236] When preventative care is more accessible, health problems are discovered earlier and can be treated more inexpensively.[237] Similarly, the ACA established quality measures for both providers and hospitals in order to reduce waste and provide the best care.[238]

The Center for Medicare and Medicaid Services ("CMS") carries out many of the ACA's objectives, as the ACA empowers CMS to create mechanisms to reduce overall costs for its members.[239] Following CMS guidance is crucial for hospitals because Medicare and Medicaid payments cover a substantial amount of the cost of care.[240] For example, in 2014, Medicare Benefits Payments for inpatient hospital services alone totaled $137.31 billion and Medicaid spent $89.3 billion on hospital payments.[241]

One of CMS's initiatives to reduce costs and improve quality is to link provider payments to the quality of care received by patients.[242] One way that CMS measures the quality of care is through the Hospital Readmission Reduction Program ("HRRP").[243] Through the HRRP the ACA authorizes CMS to reduce payments to hospitals whose high rate of readmissions are due to poor quality care.[244] Similarly, the ACA authorizes CMS to adjust

---

proximately twenty-five to forty-five billion dollars of unnecessary spending); *Accountable Care Organizations*, *supra* note 233.

[235] *See Accountable Care Organizations*, *supra* note 233.

[236] Patient Protection and Affordable Care Act, Pub. L. No. 148, 124 Stat. 119 (2010) (codified in scattered sections of 5, 18, 20, 21, 25, 26, 28, 29, 30, 31, 35, 36, and 42 U.S.C.); *see Strategic Goal 1: Strengthen Health Care*, *supra* note 222 (noting that new ACA health plans cover many preventive and screening services at no cost).

[237] *See Preventative Health Care Helps Everyone*, WORLD RESEARCH FOUND., http://www.wrf.org/preventive-healthcare/preventive-healthcare.php [https://perma.cc/AV8S-GR8J] (articulating benefits of preventative care).

[238] David Blumenthal et al., *The Affordable Care Act at 5 Years*, 372 NEW ENG. J. MED. 2451, 2453 (2015) (noting that program requirements link payment to the quality of performance, which redistributes funds).

[239] *Linking Quality to Payment*, U.S. CTRS. FOR MEDICARE & MEDICAID SERVS., https://www.medicare.gov/hospitalcompare/linking-quality-to-payment.html [https://perma.cc/4742-AGFT] (listing programs initiated by the Center for Medicare and Medicaid Services ("CMS") under the ACA).

[240] *See* Peter Cunningham et. al, *Understanding Medicaid Hospital Payments and the Impact of Recent Policy Changes,* HENRY J. KAISER FAMILY FOUND. (June 9, 2016), http://kff.org/report-section/understanding-medicaid-hospital-payments-and-the-impact-of-recent-policy-changes-issue-brief/ [https://perma.cc/S9WM-ZEZS]; *The Facts on Medicare Spending and Financing*, HENRY J. KAISER FAMILY FOUND. (July 24, 2015), http://kff.org/medicare/fact-sheet/medicare-spending-and-financing-fact-sheet/ [https://perma.cc/4PXA-ZMY2].

[241] *The Facts on Medicare Spending and Financing*, *supra* note 240.

[242] *Linking Quality to Payment*, *supra* note 239.

[243] *Id.*

[244] *Id.* CMS only reduces payments for certain types of readmission including those due to complications from treatment, inadequate treatment, poor coordination of care, unsatisfactory follow up care, and worsening conditions after discharge. *Id.*

payments to hospitals based on their performance compared to other hospitals and on each hospital's individual performance as compared to prior periods.[245]

Since its enactment, the ACA has curbed spending on health care in the United States.[246] From 2010 to 2013, the cost of health care spending increased at a rate of 3.2%, lower than the 5.6% annual growth rate of the previous decade.[247]

B. Hospital Spending and the Predicted Impact of Massachusetts' Proposed Carbon Tax on the Commonwealth's Hospital Industry

A large portion of health care spending occurs in hospitals, as they provide for a large portion of Americans' health care needs.[248] For example, in 2013, 32.1% of health expenditures in the United States went towards hospital care.[249] Therefore, as the ACA aims to lower health care costs in the United States, it must examine hospital spending.[250] Hospitals are also looking for ways to cut costs in response to reduced Medicare and Medicaid payments, while still providing essential health care to Americans.[251] Thus, a new cost such as a carbon tax could interfere with hospitals' cost-cutting goals.[252]

Hospitals' energy costs only account for one percent of their annual expenditures.[253] A 2014 study commissioned by the Massachusetts Department of Energy Resources ("DOER") found that Massachusetts' hospitals have the thirteenth-highest percentage of energy costs of the twenty-one measured industries.[254] In contrast, the chemical manufacturing industry has

---

[245] *Linking Quality to Payment, supra* note 239 (evaluating a hospital's performance based on programs such as the Hospital Readmission Reduction Program and the Hospital-Acquired Conditions Reduction Program).

[246] Blumenthal et al., *supra* note 238, at 2456.

[247] *Id.* (stating that health care spending in the United States has stabilized at around seventeen percent of the gross domestic product).

[248] AUDREY J. WEISS & ANNE ELIXHAUSER, HEALTHCARE COST & UTILIZATION PROJECT, OVERVIEW OF HOSPITAL STAYS IN THE UNITED STATES 2012, at 1 (2014), http://www.hcup-us.ahrq.gov/reports/statbriefs/sb180-Hospitalizations-United-States-2012.pdf [perma.cc/8CQE-E3Y2].

[249] *Health Expenditures,* CTRS. FOR DISEASE CONTROL & PREVENTION (Apr. 29, 2015), http://www.cdc.gov/nchs/fastats/health-expenditures.htm [perma.cc/K4MP-HGKV].

[250] *See id*.

[251] Bobby Grajweski, *Why Are Hospitals Cutting Costs?*, BECKER'S HEALTHCARE: HOSP. CFO (May 12, 2015), http://www.beckershospitalreview.com/finance/why-are-hospitals-cutting-costs.html [https://perma.cc/63M8-GR9J] (providing examples of ways the ACA can cut costs).

[252] *See id.* (describing how the ACA is pressuring hospitals to reduce costs).

[253] BRESLOW ET AL., *supra* note 156, at 65 (basing projections off of a tax of thirty dollars per ton of carbon dioxide).

[254] *Id.* at 65–66.

the highest energy cost, accounting for ten percent of its total expenses.[255] Relative to other major Massachusetts industries, energy costs in hospitals are not a large portion of total spending.[256]

The same DOER study also examined both the impact of the Massachusetts carbon tax and the employee-based rebate on major industries throughout the Commonwealth.[257] The DOER study found that the proposed carbon tax would amount to 0.07% of the hospital industry's total operating costs, equaling $21,000,000 annually.[258] In contrast, the carbon tax would account for 0.90% of the chemical manufacturing industry's annual total operating costs, almost thirteen times higher than the hospital industry's output.[259]

Although the proposed Massachusetts tax would initially increase spending for hospitals, the industry could recover approximately forty-six million dollars in rebates.[260] Hospitals could therefore experience a 0.09% net gain, equaling approximately $25,000,000.[261] Similarly, the highest rebate return of the measured industries would be to food services and drinking establishments, equaling 0.40% of its total operating costs.[262] In contrast, the chemical manufacturing industry would actually experience a net loss of 0.88% of the industry's total operating costs, the biggest industry loss attributed to the carbon tax and rebate scheme.[263]

IV. THE EFFECT OF MASSACHUSETTS' PROPOSED CARBON TAX AND ITS ALTERNATIVE REBATE SCHEME ON THE COMMONWEALTH'S HOSPITAL INDUSTRY

Massachusetts' proposed carbon tax would likely achieve its goal of reducing greenhouse gases ("GHG") emissions statewide.[264] Additionally, the tax would also be advantageous to hospitals and reduce overall health care costs.[265] Massachusetts' proposal shares many similarities with British Columbia's current carbon tax, which has successfully decreased emissions

---

[255] *Id.* at 66.
[256] *See id.*
[257] *Id.* at 66–67, 152 (noting results).
[258] *Id.*
[259] *Id.* at 67.
[260] *Id.* at 152.
[261] *Id.* at 66–67, 152.
[262] *Id.* at 67.
[263] *Id.* at 66–67.
[264] *Id.* at 4; Schoenberg, *supra* note 151 (noting that the Massachusetts Department of Energy Resources ("DOER") study highlighted the fact that a carbon tax would cause "a drop in carbon emissions").
[265] *See* BRESLOW ET AL., *supra* note 156, at 67 (crediting hospitals more tax rebates than they spent on the tax).

in the province.[266] For that reason, the Massachusetts' carbon tax would also likely reduce GHG emissions.[267] In Massachusetts, the Department of Energy Resources ("DOER") commissioned a prospective study that examined the impact of the tax on the Commonwealth's economy.[268] The study found that the tax would actually benefit the Commonwealth's economy.[269]

Business leaders in Massachusetts support the carbon tax because the tax is designed to both reduce GHG emissions and support the economy.[270] Hospitals, as businesses, would similarly benefit from the economy-boosting design of the carbon tax.[271] First, the tax would be gradually phased in over a number of years to allow newly taxed entities to adjust to the new cost.[272] In addition, the tax would apply equally to the entire economy, rather than singling out any one sector.[273] The tax would also provide rebates to businesses so that the Commonwealth's businesses can remain competitive with companies located in other states that don't impose a carbon tax.[274] As these protective principles are all features incorporated in Massachusetts' proposed carbon tax, it will benefit the Commonwealth's economy.[275]

A. Massachusetts' Proposed Tax Shares Many Similarities with British Columbia's Carbon Tax Model

Massachusetts' proposed carbon tax shares many similarities with British Columbia's implemented carbon tax scheme.[276] Massachusetts' tax, like British Columbia's tax, was designed with the intention of reducing emis-

---

[266] Schoenberg, *supra* note 151 (noting similarities between British Columbia's model and the current proposal).

[267] *Id.* (noting that the DOER study highlighted the fact that a carbon tax would cause "a drop in carbon emissions" and the next step for Massachusetts should be a carbon tax).

[268] BRESLOW ET AL., *supra* note 156, at 1.

[269] *Id.* at 4 (describing the principal findings of the study, including positive impacts on employment and the economy, among others); Schoenberg, *supra* note 151 (noting that the DOER study highlighted the fact that a carbon tax would cause "a drop in carbon emissions" and the next step for Massachusetts should be a carbon tax).

[270] *Successful Hearing at the TUE Committee*, *supra* note 206 (noting that the features of Massachusetts' carbon tax are designed to strengthen the Commonwealth's economy). Business and investment community leaders attended the Joint Committee on Telecommunications, Utilities and Energy's hearing to express support for Senator Barrett's proposed carbon tax. *Id.*

[271] *See id.* (detailing the economic enhancement tactics built into the carbon tax).

[272] *Id.* (describing the gradual phase-in step).

[273] *Id.* (stating that "all major sources of GHG emissions should face a significant carbon price").

[274] *Id.* (describing measures that must be taken in order to protect business competitiveness).

[275] *Id.* (listing the features of the proposed carbon tax).

[276] Fitzgerald, *supra* note 161 (stating that features of Massachusetts' carbon tax are based on British Columbia's model).

sions by incentivizing emitters to minimize the use of fossil fuels.[277] A rise in emission rates in 2012 notwithstanding, British Columbia's carbon tax has been largely successful.[278] Since the implementation of the tax in 2008, British Columbia has lowered its rate of emissions between five and fifteen percent, a faster rate than the rest of Canada.[279] British Columbia's carbon tax resulted in a significant emissions rate reduction and suggests similar capacity for success of a carbon tax in Massachusetts.[280]

Both carbon taxes increase in price in the first several years after implementation. [281] In British Columbia, the tax began at ten Canadian dollars per metric ton of carbon dioxide ("CO2") emitted and increased by five Canadian dollars each year until July 2012, when the tax reached its current rate of thirty Canadian dollars per metric ton of CO2 emitted.[282] In Massachusetts, the carbon tax would similarly start at ten dollars per ton of carbon emitted and increase by five dollars per year for the next six years.[283] When British Columbia implemented its carbon tax in 2008, emission rates immediately began decreasing; however, when the tax leveled off in 2012, emission rates began to slowly increase.[284] In order to avoid a similar effect and ensure that the tax is successful long-term in Massachusetts, the Commissioner of Energy Resources ("the Commissioner") will make rate modification recommendations to the Commonwealth's legislature once the tax reaches forty dollars per ton of carbon emitted.[285]

Each tax's revenue neutrality not only reduces GHG emissions, but also simultaneously stimulates economic growth.[286] Even though both carbon taxes are revenue neutral, they differ in how they return collected funds.[287] Unlike British Columbia, Massachusetts has proposed a more streamlined employ-

---

[277] Schoenberg, *supra* note 151 (noting that the "goal is for higher energy costs to incentivize people to cut back on their energy usage").

[278] KOMANOFF & GORDON, *supra* note 45, at 2–3.

[279] *Id.* at 2; Murray & Rivers, *supra* note 12, at 18.

[280] KOMANOFF & GORDON, *supra* note 45, at 2.

[281] *Id.* at 4 (describing the increase in price over time); Schoenberg, *supra* note 151 (describing cost increases associated with Barrett's proposed bill).

[282] KOMANOFF & GORDON, *supra* note 45, at 4.

[283] Schoenberg, *supra* note 151.

[284] KOMANOFF & GORDON, *supra* note 45, at 2–3.

[285] S. 1747, 189th Gen. Court, Reg. Sess. (Mass. 2015) (noting the duties of the Commissioner in relation to the required recommendations).

[286] Murray & Rivers, *supra* note 12, at 10 (stating that "lowering income taxes through the introduction of a carbon tax can produce a double-dividend effect . . . rais[ing] total economic output"); *Successful Hearing at the TUE Committee*, *supra* note 206 (acknowledging that the proposed bill will strengthen the economy).

[287] Mass. S. 1747 (describing rebates); Murray & Rivers, *supra* note 12, at 2 (describing British Columbia's revenue neutral rebate system).

ment based rebate scheme to return funds collected by the tax.[288] It is possible that subsequent regulations could increase the complexity of Massachusetts' scheme over time.[289] Although both taxes are revenue neutral, the manner in which they redistribute funds appears to be their biggest difference.[290]

Another difference between the two carbon taxes is that British Columbia's carbon tax exempts certain activities.[291] In contrast to British Columbia's tax, Massachusetts' proposal does not include any specific exemptions, allowing the Commonwealth to collect funds from and induce behavioral changes in a wider range of industries.[292] Massachusetts could still choose to include exemptions in subsequent regulations.[293]

Both carbon taxes were designed to successfully reduce emissions.[294] Despite the differences, both taxes were also designed to be revenue neutral, advancing the same secondary goal of not impeding economic growth.[295] British Columbia has been successful in achieving this secondary goal; there has been no negative impact on the province's economic activity or on economic competition.[296] In Massachusetts, the DOER study predicted that the tax would actually benefit the Commonwealth's economy in several ways.[297]

A carbon tax risks harming the economy if the funds are not equitably redistributed.[298] A revenue neutral tax, however, results in the redistribution

---

[288] Mass. S. 1747 (describing mandatory rebates); BUDGET AND FISCAL PLAN, *supra* note 120, at 66–68; Murray & Rivers, *supra* note 12, at 2 ("[A]ll revenues raised by the tax are to be recycled to [British Columbian] households and businesses, largely in the form of tax cuts."); *Home Owner Grant*, B.C., http://www2.gov.bc.ca/gov/content/taxes/property-taxes/annual-property-tax/reduce/home-owner-grant [https://perma.cc/YJB6-VTUT] ("The home owner grant reduces the amount of property tax you pay for your principal residence.").

[289] Mass. S. 1747; BUDGET AND FISCAL PLAN, *supra* note 120, at 66–68 (showing the complexities of the rebate measures).

[290] *See* Mass. S. 1747 (describing the mechanics of the tax); BUDGET AND FISCAL PLAN, *supra* note 120, at 66–68 (providing a review of British Columbia's carbon tax and its rebate scheme).

[291] *See* Mass. S. 1747, Gen. Court, Reg. Sess. (Mass. 2015); Murray & Rivers, *supra* note 12, at 4 (outlining notable exemptions).

[292] *See* Mass. S. 1747; Murray & Rivers, *supra* note 12, at 4 (outlining notable exemptions).

[293] Mass. S. 1747 (stating that the commissioner "shall promulgate rules and regulations necessary to carry out the provisions of this chapter").

[294] *See id.*; KOMANOFF & GORDON, *supra* note 45, at 2–3 (describing generally British Columbia's carbon tax); Schoenberg, *supra* note 151 (noting the goal of the Massachusetts tax is to reduce energy usage).

[295] Fitzgerald, *supra* note 161 (stating that the "revenue neutral" approach of the Massachusetts bill is modeled after British Columbia's tax); *Successful Hearing at the TUE Committee*, *supra* note 206 (acknowledging that the proposed bill will strengthen the economy).

[296] Murray & Rivers, *supra* note 12, at 1 (noting "negligible effects on aggregate economic performance").

[297] BRESLOW ET AL., *supra* note 156, at 4 (describing the principal findings of the study, including positive impacts on employment and the economy, among others).

[298] CONG. BUDGET OFFICE, THE EFFECTS OF A CARBON TAX ON THE ECONOMY AND THE ENVIRONMENT 1 (2013), https://www.cbo.gov/sites/default/files/113th-congress-2013-2014/reports/

of funds collected back to the taxpayers.[299] If the collected tax funds are redistributed properly, the tax can be beneficial to the economy.[300] As a result, the revenue neutrality of Massachusetts' proposed carbon tax is a key reason that businesses and the Commonwealth's economy will not be harmed by the implementation of the tax.[301] In fact, the proposed carbon tax is actually predicted to benefit the Commonwealth's economy due to its pro-business design.[302]

First, the tax would result in job and income increases throughout the Commonwealth.[303] In addition, the carbon tax would decrease funds spent on fuel importation.[304] The carbon tax, therefore, would free up funds currently going toward importing fossil fuels and allow those funds to be spent in ways that would benefit the Commonwealth's economy.[305] Finally, Massachusetts' rebate scheme would return funds back to industries to further mitigate any economic harm.[306]

B. Impact of Massachusetts Carbon Tax on Hospitals and the Health Care Industry

In addition to benefiting the economy generally, Massachusetts' proposed carbon tax would be especially advantageous for hospitals.[307] Hospitals in Massachusetts do not spend disproportionately more on energy costs

---

44223_Carbon_0.pdf [https://perma.cc/37NK-5B48] ("Without accounting for how the revenues from a carbon tax would be used, such a tax would have a negative effect on the economy.").

[299] BRESLOW ET AL., *supra* note 156, at 4.

[300] *Successful Hearing at the TUE Committee*, *supra* note 206 (noting that if effectively implemented, the tax will strengthen the economy); *see* BRESLOW ET AL., *supra* note 156, at 4 (finding that the proposed carbon tax positively impact economic indicators including personal income and job creation).

[301] *See Successful Hearing at the TUE Committee*, *supra* note 206 (describing the benefits and advantages of a carbon tax, and also noting that business within the state will not be disadvantaged).

[302] *See* BRESLOW ET AL., *supra* note 156, at 4 (describing the positive impacts on the economy); *Successful Hearing at the TUE Committee*, *supra* note 206 (stating that the design features of the bill encourage a stronger Massachusetts economy).

[303] BRESLOW ET AL., *supra* note 156, at 4 (predicting that the tax would cause employment to increase by four thousand to ten thousand by 2030).

[304] *Id.* at 12. Massachusetts imports almost all of its "fossil energy resources," totaling five to six percent of the state economy. *Id.* Gasoline imports alone cost Massachusetts about eight billion dollars annually, accounting for approximately two percent of the Commonwealth's economy. *Id.*

[305] *Id.* at 12–13 ("Those dollars then stay in the Massachusetts economy and lead to increased spending on other industries where much more of the money pays for in-state labor, services, and other costs.").

[306] *See id.* at 5 (noting that certain entities will receive money back in the form of rebates amounting to a small gain).

[307] *Id.* at 67 (noting that hospitals in Massachusetts will have one of the higher net gains as compared to other industries as a result of the carbon tax).

than other industries.[308] In fact, Massachusetts' hospitals' total energy costs comprise merely one percent of their annual output.[309] The major feature that is unique to Massachusetts' proposed carbon tax, and most beneficial for the hospital industry, is the employment-based rebate scheme.[310] Hospitals in Massachusetts make up approximately sixteen percent of total employment in the Commonwealth.[311] Businesses, including hospitals, will receive a rebate based on their proportional share of statewide employment.[312]

Alternatively, the Commissioner could choose to give all the funds collected from an industry subsector back to that specific industry if it would otherwise be disproportionally harmed by the tax.[313] Therefore, if the Commissioner finds disproportionate harm to the hospital industry, the Commissioner could return all the funds collected from hospitals back to the industry as a whole.[314] Under this scenario, hospitals would not lose any money from the tax because all collected revenue would be returned.[315]

The DOER study examined the future impact of the carbon tax on hospitals based on the industry's current emissions rate.[316] The DOER study found that the proposed carbon tax would cost hospitals $21,000,000 annually, equaling 0.07% of their total annual operating costs.[317] Consequently, the tax would initially increase costs for hospitals.[318] In contrast to the twenty-one million dollars hospitals would spend on the tax, they would

---

[308] *Id.* at 65–66 (providing statistical data on energy usage for numerous industries).

[309] *Id.* at 65.

[310] S. 1747, 189th Gen. Court, Reg. Sess. (Mass. 2015); BRESLOW ET AL., *supra* note 156, at 66–67 (showing that hospitals will actually have a net gain of 0.09%).

[311] *See Databases, Tables & Calculators by Subject,* BUREAU OF LABOR STATISTICS, https://data.bls.gov/timeseries/LASST250000000000003 [https://perma.cc/863B-SVBY] (in January 2016, approximately 3.4 million people were employed in the Commonwealth); *Employment and Wage Report (ES-202)*, MASS. EXEC. OFFICE OF LABOR & WORKFORCE DEV., http://lmi2.detma.org/lmi/lmi_es_b.asp?AT=01&A=000025&Y=2015&P=00&O=00&I=622~3&Iopt=1&Dopt=TEXT [https://perma.cc/QU47-PW32]. On average, Massachusetts' hospitals employed 202,602 people each month in 2015. *Employment and Wage Report (ES-202)*, *supra*.

[312] Mass. S. 1747.

[313] *Id.* (explaining that the Commissioner will identify industries, sub-sectors, or even specific employers at risk of suffering significant negative consequences as a result of the carbon tax). The bill further states, "[t]he commissioner may, as mitigation, calculate the total proceeds collected from said sectors, subsectors or individual employers and may apportion the entirety of said proceeds to the affected sector, sub-sector or employers." *Id.*

[314] *See id.* The bill does not specify how the Commissioner will divide the funds to be returned. *Id.*

[315] *See id.* (stating that the Commissioner may return "the entirety of said proceeds to the affected sector, sub-sector, or employers").

[316] BRESLOW ET AL., *supra* note 156, at 65–67, 152–55 (using a tax rate of thirty dollars per ton of carbon dioxide).

[317] *Id.* at 67, 152.

[318] *Id.*

recover forty-six million dollars in rebates from the carbon tax annually.[319] Therefore, despite the initial increase in spending, hospitals could actually end up with a net gain of approximately twenty-five million dollars after the proposed rebate.[320]

Additionally, curbing GHG emissions will minimize the health consequences caused by climate change.[321] Naturally, a lack of climate change-related health consequences would lead to less demand for health services, ultimately driving down health care costs.[322] The carbon tax would therefore have a positive impact on the hospital industry throughout the Commonwealth.[323]

C. Potential Challenges to Massachusetts' Carbon Tax Proposal

Massachusetts is a leader in climate change initiatives nation-wide, and a carbon tax would only reinforce its status by reducing GHG emissions.[324] As such, Massachusetts' carbon tax functions in complement with Environmental Protection Agency (EPA) guidelines aimed at reducing GHG emissions.[325]

British Columbia's carbon tax has not faced major legal hurdles since its implementation in 2008.[326] In contrast, Australia's unpopular carbon tax led to litigation and legal attacks.[327] For example, business owner Clive Palmer challenged Australia's carbon tax in court, claiming that it favored

---

[319] *Id.* at 152.

[320] *Id.*

[321] *See Health*, *supra* note 22.

[322] *See The Consequences of Global Warming on Health*, *supra* note 23 (listing the negative health impacts produced by global warming); *Health*, *supra* note 22 (noting health consequences caused by climate change and that "the costs of coping with health risks linked to severe climate change are often higher than the costs of curbing heat-trapping emissions in the first place").

[323] BRESLOW ET AL., *supra* note 156, at 65–67,152–55 (providing that the tax will result in a net gain for hospitals); *Health*, *supra* note 22 (noting health consequences caused by climate change).

[324] *Massachusetts Global Warming Solutions Act*, CONSERVATION L. FOUND., http://www.clf.org/making-an-impact/global-warming-solutions-act/ [https://perma.cc/8QQY-Z443].

[325] *See* U.S. ENVTL. PROT. AGENCY, EPA-420-F-12-051, EPA AND NHTSA SET STANDARDS TO REDUCE GREENHOUSE GASES AND IMPROVE FUEL ECONOMY FOR MODEL YEARS 2017–2025 CARS AND LIGHT TRUCKS 3 (2012), https://www3.epa.gov/otaq/climate/documents/420f12051.pdf [https://perma.cc/T9C8-CLLX] (describing an EPA regulation that sets emission standards for light trucks and cars to reduce GHG emissions).

[326] *See* Carbon Tax Act, S.B.C. 2008, c. 40 (Can.); KOMANOFF & GORDON, *supra* note 45, at 2 (providing statistics showing that the carbon tax successfully reduced emissions between 2008 and 2013).

[327] Elizabeth Byrne, *Clive Palmer's Queensland Nickel Company Loses Court Challenge to Carbon Tax Regulations*, ABC (Apr. 7 2015), http://www.abc.net.au/news/2015-04-08/clive-palmers-queensland-nickel-loses-carbon-tax-challenge/6377256 [https://perma.cc/N7JL-F89P].

Western Australia over the region where his company is located.[328] Additionally, the Institute of Public Affairs ("IPA") also proposed challenges to Australia's national carbon tax.[329] As part of its campaign to undermine the carbon tax, the IPA made several legal arguments about how the Australian government lacked the authority to impose such a tax.[330] Ultimately, the campaigns against the carbon tax were successful; the tax was repealed in 2014 due to public pressures after international economic turmoil.[331]

Unlike Australia's repealed national carbon tax, Massachusetts, not the federal government, would implement the tax.[332] As a state law, the carbon tax would apply uniformly across the Commonwealth and therefore would not favor any specific region.[333] In addition, the Constitution of the United States differs from the Australian Constitution in terms of general taxing powers.[334] Therefore, it is unlikely that Massachusetts' carbon tax would be subjected to the same challenges as its international predecessors.[335]

CONCLUSION

The Massachusetts bill entitled *An Act Combating Climate Change* would be the first carbon tax in the United States. In addition to reducing emissions to combat global warming, the proposed carbon tax would actually

---

[328] *Id*; Rob Taylor & Rhiannon Hoyle, *Australia Becomes First Developed Nation to Repeal Carbon Tax,* WALL ST. J. (July 17, 2014), http://www.wsj.com/articles/australia-repeals-carbon-tax-1405560964?mg=id-wsj [https://perma.cc/YZ2R-GGG5].

[329] Press Release, Tim Wilson, Inst. of Pub. Affairs, Carbon Tax Unconstitutional: Legal Opinion (Apr. 10, 2012) [hereinafter Wilson Press Release], http://ipa.org.au/library/publication/1334017455_document_120410_-_news_release_-_carbon_tax_unconstitutional.pdf [https://perma.cc/72JS-ZAMR].

[330] *See id.* The Institute of Public Affairs ("IPA") argued that the tax was unconstitutional because the state owns its GHG emissions and the Australian national government was not permitted to tax state property. *Id.* In addition, the IPA claimed that the Australian government could not justify the tax under its external affairs power. *Id.* Finally, the IPA argued that the tax was also invalid because it could not be promulgated in the same act alongside other penalties. *Id.*; *Institute of Public Affairs' Repeal the Carbon Tax Finalist for Prestigious Templeton Freedom Award*, ATLAS NETWORK (Aug. 31, 2015), https://www.atlasnetwork.org/news/article/institute-of-public-affairs-repeal-the-carbon-tax-finalist-for-prestigious- [https://perma.cc/NH3A-3EQ7] (acknowledging the IPA's role in the efforts to repeal Australia's carbon tax).

[331] Taylor & Hoyle, *supra* note 328 (noting how the global financial crisis in 2008 and the end of Australia's mining boom led to dissatisfaction with the carbon tax).

[332] S. 1747, 189th Gen. Court, Reg. Sess. (Mass. 2015); Wilson Press Release, *supra* note 329 (arguing that Australia's carbon tax was unconstitutional because it was implemented by the national government).

[333] *See* Mass. S. 1747 (containing no provisions taxing any part of the Commonwealth unevenly).

[334] *See* U.S. CONST. art. I, § 8, cl. 3; AUSTRALIAN CONSTITUTION ss 55, 114.

[335] *See* U.S. CONST. art. I, § 8, cl. 3 (articulating the Commerce Clause); AUSTRALIAN CONSTITUTION ss 55, 114 (establishing the authority for the Australian Parliament and individual States to tax); Mass. S. 1747 (laying out Massachusetts' proposed carbon tax); Wilson Press Release, *supra* note 329 (challenging Australia's carbon tax).

aid economic growth throughout the Commonwealth. Massachusetts' proposed tax shares many similarities with British Columbia's successful model.

Although both Massachusetts' and British Columbia's models are revenue neutral and do not generate revenue for the governments, a major difference between the two taxes is the redistribution schemes. Most importantly, Massachusetts' tax would reimburse businesses based on their proportionate share of statewide employees. This employment-based rebate scheme is predicted to benefit the Commonwealth's economy.

Specifically, the tax would be advantageous to the hospital industry. Research has predicted that the Commonwealth's hospital industry would likely end up with a net gain after the carbon tax rebate. Similarly, many businesses support the tax, as it is predicted to aid economic growth within the Commonwealth.

The conclusion that the tax will in fact benefit the hospital industry is compatible with the national goal of reducing the cost of health care. Any additional costs to the hospital industry would be contrary to the national goal of reducing the cost of health care. The Patient Protection and Affordable Care Act is shifting payment for health care services away from the traditional Fee-for-Service model to schemes utilizing bundled payments and adjusting based on quality measures. In addition, a carbon tax is less expensive than the cost of coping with the health consequences of global warming.

Massachusetts' proposal is unlikely to face major legal hurdles because the Commonwealth has the authority to pass taxes and the tax does not include provisions that will implicate the dormant commerce clause. A revenue neutral carbon tax with an employment based redistribution scheme, such as Massachusetts' proposed bill, would therefore successfully further two national goals: combating climate change and minimizing the costs of health care.