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Michael B. Gerrard
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A Case for a New York Carbon Tax

Andrew Ratzkin

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greenhouse gas (GHG) emissions causing global warming. This article reports on pending legislation and economic studies of proposed state-level carbon taxes in New York and elsewhere in the United States, while also considering the experience of British Columbia, the most prominent example of an existing subnational carbon tax. The article also reviews competing design considerations for a carbon tax, including how to address regressivity, alternatives for allocation of the revenue raised by the tax, and environmental justice. Some special considerations exist in New York, including an existing, relatively robust strategy for continued electric sector decarbonization, and generally high existing tax rates in other areas of the economy.² Finally, the article addresses concerns over the potential for “leakage” and competitive disadvantage, and considers possible ways to address these concerns, including the potential to proceed with a carbon tax on a multi-state or regional basis.

This article considers the case for a New York carbon tax.¹ Imposing a price on fossil fuel combustion is considered by many observers with a wide array of ideological, political, and academic commitments to be the keystone strategy for reducing

Introduction

Amid the broad retreat from federal climate policy commitments,³ attention is increasingly turning to state efforts to control GHG emissions, including state actions to impose a

¹ The term “carbon tax” is shorthand for a tax on carbon dioxide (CO₂) emissions, the principal greenhouse gas (GHG). I continue with that usage, but use the term to refer to a tax on GHG emissions more broadly. The term “CO₂e” is used to refer to the global warming impact of any gas, as measured against the atmospheric warming effect of a metric ton of CO₂.

² See, e.g., *Taxes in New York*, TAX FOUND., <https://taxfoundation.org/state/new-york/> (last visited Oct. 11, 2017) (reporting New York to be the highest-taxed state in the nation: first in individual income tax collections per capita; first in combined state and local tax burden; ninth-highest combined state and local sales tax rate; fourth-highest gasoline tax rate; fifth in property tax collections per capita; and forty-ninth in state business tax climate ranking).

³ Administration reversals on climate policy include: abandonment of the Clean Power Plan, reconsideration of motor vehicle emissions and fuel efficiency standards; rescission of executive actions covering the oil and gas industry; defunding of climate science, monitoring, and adaptation efforts; restriction of public availability of climate-related data; and declaration of intent to withdraw from the Paris Agreement of the United Nations Framework Convention on Climate Change. See Exec. Order No. 13783, 82 Fed. Reg. (Mar. 31, 2017). For a good collection of Trump administration actions on climate and other environmental policy, see Michael Greshko et al., *A Running List of How Trump Is Changing the Environment*, NAT'L GEOGRAPHIC (last updated Aug. 23, 2017), <http://news.nationalgeographic.com/2017/03/how-trump-is-changing-science-environment/>. At the time of this writing, the Trump administration had recently proposed the Grid Resiliency Pricing Rule, which would subsidize coal and nuclear electric generation by requiring independent system operators to allow cost recovery by electric generating units maintaining at least a 90-day fuel supply on premises. 82 Fed. Reg. 46940 (Oct. 10, 2017).

price on GHG emissions from fossil fuels.⁴ New York is prominent among these states.⁵

While politics is never predictable, and anything could happen in the context of proposed federal tax reform,⁶ the smarter money—for now—says the near-term prospect of adopting carbon pricing at the federal level, already a difficult proposition, has faded substantially since the 2016 election. Even under the Obama administration and a Democratic Congress, the last serious legislative effort to adopt carbon pricing at the federal level failed. In its attempt to gain leverage over the Senate, the Obama administration had threatened to go around Congress and pursue a regulatory strategy using executive branch rulemaking powers under the Clean Air Act. These threats, however, did not ultimately move enough senators,⁷ and in the end the administration was left with no option other than to pursue executive action only. The result was the Clean Power Plan, promulgated pursuant to Section 111(d) of the Clean Air Act,⁸ to regulate electric-sector GHG emissions, originally seen as a second-best alternative to federal legislation with an economy-wide scope.⁹

The vulnerability of executive-only action to reversal by a subsequent administration, now coming to fruition, was another reason why it was not the favored alternative. The obstacles to a federally imposed carbon price that emerged during the initial years of the Obama administration have become only more daunting under the combination of the Trump administration and a Republican-controlled Congress. Recourse to the states is therefore both an opportunity to return to first principles—carbon pricing as the primary tool to address GHG emissions—as well as a practical necessity under current political conditions.

One sign of reorientation to state arenas is that Citizens' Climate Lobby (CCL)—the leading group advocating for a carbon price in the United States¹⁰ and heretofore devoted only to legislation on the federal level—recently decided to support its local chapters advocating for state-level carbon taxes.¹¹ Another sign of increased receptivity to carbon pricing at the state level is the recent study of electric-sector-wide carbon pricing prepared for the New York Independent System Operator (NYISO), the operator of New York's electric grid.¹² It remains

⁴ Legislative proposals to impose an economy-wide price on GHG emissions have been advanced in Massachusetts (H 1726, An Act to Promote Green Infrastructure, Reduce Greenhouse Gas Emissions, and Create Jobs, and S 1821, An Act Combatting Climate Change, discussed at *About the Bills*, CLIMATEXCHANGE, <https://climate-xchange.org/massachusetts-campaign/about-the-bill/> (last visited Oct. 10, 2017); Rhode Island (H 5369, Clean Energy Investment and Carbon Pricing Act of 2017); Connecticut (Raised Bill No. 7247, An Act Establishing a Carbon Price for Fossil Fuels Sold in Connecticut); Vermont (H.531, An act relating to establishing a carbon pollution fee in Vermont, and H.532, An act relating to replacing statewide education tax revenue with a fee on carbon dioxide pollution); Oregon (LC 1242); and Washington (HB 1646, Promoting an equitable clean energy economy by creating a carbon tax that allows investment in clean energy, clean air, healthy forests, and Washington's communities, and companion bill, SB 5509). This list excludes states that impose a price on carbon emitted in the generation of electricity only, principally via the Regional Greenhouse Gas Initiative, and more broadly via California's cap-and-trade system promulgated under its Global Warming Solutions Act of 2006. See *Assembly Bill 32 Overview*, CAL. AIR RES. BOARD (CARB), <https://www.arb.ca.gov/cc/ab32/ab32.htm> (last reviewed Aug. 5, 2014). With the enactment of AB 398 in 2017, the California program was extended for 10 years.

⁵ In New York, A107 (An act to amend the tax law, in relation to establishing a tax on carbon-based fuels to mitigate greenhouse gas emissions causing anthropogenic climate change), previously introduced in the state assembly in 2015, and its companion bill in the New York State Senate, S2846, have accumulated 29 sponsors, co-sponsors, and multi-sponsors as of this writing. A separate carbon tax bill, supported by New York Renews (NY Renews), is expected to be introduced shortly. *Our Policies*, N.Y. RENEWS, <https://www.nyrenews.org/about/#anchor-link-just-transistion> (last visited Oct. 9, 2017).

⁶ Kevin Liptak, *WH: US Staying Out of Climate Accord*, CNN (Sept. 17, 2017, 1:21 PM), <http://www.cnn.com/2017/09/16/politics/trump-paris-climate-deal/index.html>; Esmé Cribb, *McMaster: Trump Open To Reentering Paris Accord To Advance US 'Prosperity'*, TALKING POINTS MEMO: LIVEWIRE (Sept. 17, 2017, 10:17 AM), <http://talkingpointsmemo.com/livewire/mcmaster-denies-trump-reversing-position-on-paris-accord>; Joe Kennedy, *A Tax on Carbon Could Be the Answer to Corporate Tax Reform*, THE HILL (Aug. 18, 2017, 3:40 PM), <http://thehill.com/blogs/pundits-blog/economy-budget/347124-how-a-carbon-tax-could-save-corporate-tax-reform>; Lisa Friedman, *Some Democrats See Tax Overhaul as a Path to Taxing Carbon*, N.Y. TIMES, Aug. 17, 2017, <https://www.nytimes.com/2017/08/17/climate/carbon-tax-reform-climate-change.html>; Editorial, *Our View: Bipartisan Carbon Tax No Longer Pie in Sky*, ARIZ. DAILY SUN, Sept. 16, 2017, http://azdailysun.com/opinion/editorial/bipartisan-carbon-tax-no-longer-pie-in-sky/article_340ce8ba-9419-53c7-8d69-77a06c5d4e22.html.

⁷ Evan Lehmann, *Senate Abandons Climate Effort, Dealing Blow to President*, N.Y. TIMES, July 23, 2010, <http://www.nytimes.com/cwire/2010/07/23/23climatewire-senate-abandons-climate-effort-dealing-blow-88864.html> ("White House will continue to pressure lawmakers with its biggest stick: U.S. EPA regulations on carbon"). For an astute postmortem on the failure of the carbon pricing bill to reach the Senate floor, see Ryan Lizza, *As the World Burns: How the Senate and the White House Missed Their Best Chance to Deal with Climate Change*, NEW YORKER, Oct. 11, 2010, <https://www.newyorker.com/magazine/2010/10/11/as-the-world-burns>.

⁸ 80 Fed. Reg. 64662 (Oct. 23, 2015).

⁹ See *Waxman-Markey Short Summary*, CTR. FOR CLIMATE & ENERGY SOLUTIONS, <https://www.c2es.org/federal/congress/111/acesa-short-summary> (last visited Oct. 10, 2017) (bill established economy-wide goals for all sources, including but not limited to those covered by the cap-and-trade program).

¹⁰ Citizens' Climate Lobby (CCL) has grown from approximately 33,000 registered supporters in October 2016 to over 76,000 members one year later. Over the same period, the number of CCL chapters in the U.S. grew from 287 to 367. Correspondence with Iona Lutey, CCL Regional Coordinator (Sept. 15, 2017) (on file with author).

¹¹ Even as CCL has succeeded in winning new members and congressional adherents to its bipartisan Climate Solutions Caucus (at 60 members at the time of this writing), *Climate Solutions Caucus*, CITIZENS' CLIMATE LOBBY, <https://citizensclimatelobby.org/climate-solutions-caucus/> (last visited Oct. 10, 2017), it has come to recognize the importance of also working on the state level. Presentation of Iona Lutey, CCL Regional Coordinator (June 29, 2017) (on file with the author).

¹² SAM NEWELL ET AL., BRATTLE GROUP, PRICING CARBON INTO NYISO'S WHOLESALE ENERGY MARKET TO SUPPORT NEW YORK'S DECARBONIZATION GOALS (Aug. 10, 2017) [hereinafter NYISO REPORT], http://www.nyiso.com/public/webdocs/markets_operations/documents/Studies_and_Reports/Studies/Market_Studies/Pricing_Carbon_into_NYISOs_Wholesale_Energy_Market.pdf.

to be seen whether the newfound willingness of the state to consider carbon pricing across the electric sector may signal receptivity to the efficacy of carbon pricing more broadly.

New York Not on Track to Meet Own Goals

New York has impressive state goals for reducing GHG emissions—40% from 1990 levels by 2030, and 80% by 2050.¹³ Yet, to date, New York has not adopted, or even proposed, a mechanism to drive down economy-wide GHG emissions adequate to reach this goal.¹⁴ While New York has adopted many piecemeal measures, none of these are equal to the task, individually or collectively.¹⁵ The primary focus of New York’s energy policy has been on the electric sector.¹⁶ For

example, programs such as the Regional Greenhouse Gas Initiative (RGGI)¹⁷ and New York’s original renewables mandate, the Renewable Portfolio Standard (RPS),¹⁸ and more generally the stringency of New York’s power plant and clean air permitting processes, have already succeeded in decarbonizing New York’s electric sector to a significant extent. Factor in the presence of significant hydro and nuclear generating stations among the state’s baseload operating plants, and New York already enjoys one of the least carbon-intensive electric sectors in the nation.¹⁹ Other policies, such as Reforming the Energy Vision (REV),²⁰ the Clean Energy Standard (CES),²¹ newly announced planned enhancements to RGGI,²² and NYISO’s examination of the potential for using carbon pricing,²³ make it apparent that New York is maintaining its laser focus on the electric sector.²⁴ But, perhaps limited by its own success, New York now faces an

¹³ Exec. Order No. 24, 9 CRR-NY 7.24 (2009).

¹⁴ See, e.g., JUSTIN GUNDLACH & ROMANY WEBB, SABIN CTR. FOR CLIMATE CHANGE LAW, COLUMBIA LAW SCH., CARBON PRICING IN NEW YORK ISO MARKETS: FEDERAL AND STATE ISSUES, at v–vi (Feb. 2017), <http://columbiaclimatelaw.com/files/2017/02/Gundlach-Webb-2017-02-Carbon-Pricing-in-NYISO-Markets.pdf> (New York has “articulated long-term targets for emissions reductions that will not be achieved without the adoption of further specific policy measures in the future”).

¹⁵ See NYISO REPORT, *supra* note 12, at iv (“To help decarbonize the transportation, commercial, residential, and industrial sectors, New York has energy efficiency programs and other policies, although nothing as extensive as” the Clean Energy Standard, New York’s renewables mandate applied to electric utilities and other load-serving entities). The disparity between goals and means is not unique to New York. See, e.g., MARC BRESLOW ET AL., MASS. DEPT. OF ENERGY RES., ANALYSIS OF A CARBON FEE OR TAX AS A MECHANISM TO REDUCE GHG EMISSIONS IN MASSACHUSETTS 22 (Dec. 2014) [hereafter MASS. DOER REPORT], <http://www.mass.gov/eea/docs/doer/fuels/mass-carbon-tax-study.pdf> (“Although Massachusetts has a number of important laws that help to reduce GHG emissions, there is no comprehensive policy that serves as a deterrent to emissions by companies and households.”). New York and other states in the U.S. Climate Alliance recently announced that they are on track to meet or exceed the targets of the Paris Climate Agreement. See Press Release, Governor Andrew M. Cuomo, Governor Cuomo and U.S. Climate Alliance Announce States are on Track to Meet or Exceed Targets of Paris Climate Agreement (Sept. 20, 2017), <https://www.governor.ny.gov/news/governor-cuomo-and-us-climate-alliance-announce-states-are-track-meet-or-exceed-targets-paris>. Those targets are substantially more modest than New York’s own emissions reduction goals. See Ctr. for Climate & Energy Solutions, 2020 Country Emissions Targets, <https://www.c2es.org/international/history-international-negotiations/2020-targets> (last visited Oct. 16, 2017) (U.S. pledged target “[i]n the range of 17% below 2005 levels by 2020”). Although the U.S. Climate Alliance states projected reductions in excess of the U.S. Paris targets—24 to 29% reductions in GHG emissions from 2005 levels by 2025—those reductions would also be well short of New York’s state goals.

¹⁶ New York’s initiatives in the sectors responsible for the remaining 80% of state GHG emissions are much more scattershot. See, e.g., N.Y. STATE ENERGY PLANNING BD., THE ENERGY TO LEAD: 2015 NEW YORK STATE ENERGY PLAN (VOLUME 1), at 65–109 (2015) (STATE ENERGY PLAN) (listing numerous disparate initiatives in the form of narrowly targeted subsidies and programs).

¹⁷ RGGI claims credit for a 50% reduction in electric-sector GHG emissions in the participating states. See, e.g., Press Release, RGGI Inc., RGGI States Announce Proposed Program Changes: Additional 30% Emissions Cap Decline by 2030, at 2 (Aug. 23, 2017), https://www.rggi.org/docs/ProgramReview/2017/08-23-17/Announcement_Proposed_Program_Changes.pdf.

¹⁸ *Renewable Portfolio Standard*, NYSEDA: CLEAN ENERGY STANDARD, <https://www.nyserda.ny.gov/All-Programs/Programs/Clean-Energy-Standard/Renewable-Portfolio-Standard> (last visited Oct. 10, 2017) (the goal of the RPS was to increase the proportion of renewable energy New Yorkers used from 19.3% (using 2004 as the baseline year) to at least 25% by the end of 2013).

¹⁹ See Allison Bailes, *How Dirty Is Your State’s Electricity?*, ENERGY VANGUARD (Sept. 2, 2016), <https://www.energyvanguard.com/blog/how-dirty-is-your-states-electricity> (showing graph of “Carbon Intensity of Electricity by US State” based on 2012 U.S. EPA Emissions & Generation Resource Integrated Database).

²⁰ It is doubtful that New York’s well-known electric-sector program, “Reforming the Energy Vision” or “REV,” which focuses primarily on decentralizing rather than decarbonizing electric generation, can succeed in reducing even electric-sector emissions, as the State’s own assessment has found. See N.Y. STATE DEPT. OF PUB. SERV., FINAL GENERIC ENVIRONMENTAL IMPACT STATEMENT IN CASE 14-M-0101 - REFORMING THE ENERGY VISION AND CASE 14-M-0094 - CLEAN ENERGY FUND, at 5-2 (Aug. 2, 2015), <http://documents.dps.ny.gov/public/Common/ViewDoc.aspx?DocRefId=%7B9E35CB6F-9B7D-4220-9CD4-B254C0FB4551%7D> (prospect of REV to drive fossil fuel displacement is “all uncertain”). Hence, the State has also commenced plans to supplement REV with more traditional command-and-control-like initiatives such as the Clean Energy Standard (CES), RGGI enhancements, and the NYISO proposal.

²¹ Case Nos. 15-E-0302 and 16-E-0270, Order Adopting a Clean Energy Standard (N.Y. Pub. Serv. Comm’n Aug. 1, 2016) [hereinafter CES Order]. The CES requires that New York load-serving entities (utilities and energy service companies and others serving the retail market within a regulated utility territory) procure 50% of electric generation from renewable sources by 2030. CES Order at 2, 78–79.

²² See RGGI Inc., *supra* note 17.

²³ See NYISO REPORT, *supra* note 12.

²⁴ There are good policy reasons for doing so, not the least of which is the potential of the electric sector to take market share from transportation and space-heating over the long term. The cleaner the electric sector is, the greater the emissions reductions from this shift will be.

electric sector with relatively limited gains remaining to be made. New York's electric sector accounted for 18% of GHG emissions by 2014,²⁵ down from 28% in 1990.²⁶ Even if the sector were zeroed out, New York emissions would drop only another 18%, not close to its GHG reduction goals, unless action is taken in other sectors. There are just not enough GHG emissions left in this sector to get New York over the line. Something else must be done to deliver economy-wide reductions in GHG emissions.

Economists across the ideological and political spectrum are in agreement that introducing a price signal on GHG emissions is the single most effective measure that can be taken to influence the billions of energy-affecting decisions taken daily.²⁷ This viewpoint rests on the basic insight that making something more expensive, by imposing a tax or other price signal, means that people will buy less of it and tend to favor substitutes and/or consume less.²⁸ The rationale for imposing additional cost on the purchase of fossil fuels is that doing so is necessary to reflect

the externality cost—unchecked climate change—associated with GHG pollution.²⁹ Given a sufficient price signal disincentivizing purchases of carbon-based fuels, individual consumers and producers will decide what mix of conservation, efficiency, and carbon-free energy sources such as wind, solar, nuclear, and hydro to deploy. A carbon tax is also relatively unbureaucratic.³⁰

Emissions Reductions Bona Fides

Modeling and analyses, as well as some real-life experiments,³¹ have tended to confirm what economics tells us—that carbon pricing has the potential to reduce GHG emissions dramatically. Carbon pricing is also highly synergistic with other GHG reduction policies.³² Analyses of recent federal-level Democratic and Republican proposals have projected GHG emissions reductions of 49.4% by 2030³³ and 28% by 2025,³⁴ respectively.

²⁵ U.S. ENERGY INFORMATION ADMINISTRATION, ENERGY-RELATED CARBON DIOXIDE EMISSIONS AT THE STATE LEVEL, 2000-2014, at 10 tbl. 3 (Jan. 2017), <https://www.eia.gov/environment/emissions/state/analysis/pdf/table3.pdf>; see also NYISO REPORT, *supra* note 12, at 2 fig.1. Over this period, New York's electric sector fell from being the leading source of GHG emissions to being the third-highest source, with the transportation sector accounting more than twice the amount of emissions. *Id.*

²⁶ N.Y. STATE ENERGY RESEARCH & DEV. AUTH. (NYSERDA), NEW YORK STATE GREENHOUSE GAS INVENTORY: 1990–2014, at S-5 tbl. S-2 (Feb. 2017), <https://www.nyserda.ny.gov/-/media/Files/EDPPP/Energy-Prices/Energy-Statistics/greenhouse-gas-inventory.pdf>.

²⁷ See, e.g., *Pigou Club*, WIKIPEDIA https://en.wikipedia.org/wiki/Pigou_Club (last visited Oct. 10, 2017) (reported members); *Scientists and Economists*, CARBON TAX CTR., <https://www.carbontax.org/scientists-economists/> (last visited Oct. 10, 2017).

²⁸ Taxes that operate under this assumption are called “Pigouvian taxes,” in honor of Arthur Cecil Pigou who postulated that a market price that failed to reflect externality costs could be corrected by the introduction of a tax to reflect such costs. The “costs” of air pollution, including GHG emissions that result from burning fossil fuels, are classic externalities because they are not reflected in the purchase price of the fuel absent an intervention, such as the imposition of an “add-on” to reflect the environmental cost of emissions.

²⁹ In theory, GHG emissions reductions could also be achieved through highly intrusive, prescriptive, bureaucratic, and ultimately more inefficient and expensive measures such as command-and-control regulations (for example, dictating maximum GHG emissions per unit of energy produced), subsidy regimes (in which the government must determine which technologies to support instead of letting the market operate), or even nationalization (which would be based on the conceit that the government would know how to reduce emissions and finance the related capital expense to do so). Such alternatives are plainly in tension with the prevailing American ethos. The complex subsidy model has characterized much of New York's energy policy to date. Indeed, much of the promotion of renewables in the State Energy Plan revolves around one form of subsidy or another. See STATE ENERGY PLAN, *supra* note 16, at 26–41. A carbon price, on the other hand, more closely aligns with the predominant economic and political worldview of smaller government and private sector decision-making.

³⁰ See, e.g., NYISO Report, *supra* note 12, at 20 (comparing administrative burden of carbon cap-and-trade policy).

³¹ In the United Kingdom, where CO₂ emissions are now at their lowest levels since 1894, a carbon tax—in place since 2013 and which doubled to £18/ton in 2015—has been credited with a decisive role in dramatically reducing coal-based emissions. Simon Evans, *Analysis: UK Carbon Emissions Fell 6% in 2016 After Record Drop in Coal Use*, CARBON BRIEF (Mar. 6, 2017, 12:32 AM), <https://www.carbonbrief.org/analysis-uk-cuts-carbon-record-coal-drop>. In British Columbia, the Ministry of Finance reports that from 2007 to 2014, the province saw a 5.5% decrease in emissions, while the population increased by 8.1% and its real gross domestic product increased by 12.4%. *British Columbia's Revenue-Neutral Carbon Tax*, B.C., <http://www2.gov.bc.ca/gov/content/environment/climate-change/planning-and-action/carbon-tax> (last visited Oct. 10, 2017).

³² See ADELE C. MORRIS ET AL., BROOKINGS INST., STATE-LEVEL CARBON TAXES: OPTIONS AND OPPORTUNITIES FOR POLICYMAKERS 28–29 (July 28, 2016) [hereinafter BROOKINGS REPORT], <https://www.brookings.edu/wp-content/uploads/2016/07/State-level-carbon-taxes-Options-and-opportunities-for-policymakers.pdf> (carbon tax generates market signals throughout the energy supply chain; imposed on top of existing climate and energy policies it can incentivize additional abatement up to marginal costs reflected in tax rate); NYISO REPORT, *supra* note 12, at 62 (in electric sector, a “carbon charge would thus complement existing, more targeted clean energy policies; by identifying additional sources of low-cost abatement, a carbon charge would improve the economic efficiency of meeting the state's energy and environmental goals”); Bill McKibben, Opinion, *Why We Need a Carbon Tax And Why It Won't Be Enough*, YALE ENV'T 360 (Sept. 12, 2016), https://e360.yale.edu/features/why_we_need_a_carbon_tax_and_why_it_won_be_enough (carbon taxation “the one big action that encompasses all the others”).

³³ See the Carbon Tax Center's analysis of the Managed Carbon Price Act of 2014. *Bills*, CARBON TAX CTR., <https://www.carbontax.org/bills/> (last visited Oct. 10, 2017).

³⁴ The conservative Climate Leadership Council (CLC) proposal to tax CO₂ emissions at \$40 per ton beginning in 2019, and rising annually at inflation plus 2%, has been estimated to achieve a 26–28% reduction in CO₂ emissions from 2005 levels by 2025. DAVID BAILEY & DAVID BOOKBINDER, CLIMATE LEADERSHIP COUNCIL, A WINNING TRADE: HOW REPLACING THE OBAMA-ERA CLIMATE REGULATIONS WITH A CARBON DIVIDENDS PROGRAM STARTING AT \$40/TON WOULD YIELD FAR GREATER EMISSIONS REDUCTIONS 3–4 (Feb. 2017), https://www.clcouncil.org/wp-content/uploads/2017/02/A_Winning_Trade.pdf; accord Charles Komanoff, *Baker-Shultz Carbon Tax Would Let U.S. Keep Its Paris Pledge*, CARBON TAX CTR. (May 30, 2017), <https://www.carbontax.org/blog/2017/05/30/baker-shultz-carbon-tax-would-let-u-s-keep-its-paris-pledge/> (evaluating CLC proposal and finding 27% reduction from 2005 levels by 2025).

Analyses of state-level proposals in New York,³⁵ Massachusetts,³⁶ Rhode Island,³⁷ Vermont,³⁸ Oregon,³⁹ and Washington⁴⁰ have projected economy-wide decreases in GHG emissions ranging from 5% to over 40% compared to business as usual cases, depending on the tax level and other factors. In British Columbia, the best example of an existing subnational carbon tax, the Ministry of Finance reports Canada-leading reductions in GHG emissions of 5.5% between 2007 and 2014 even though the tax topped out at the relatively modest value of C\$30 per ton in 2012.⁴¹

Reduction of GHG emissions, and the fossil fuel combustion that creates them, can also be expected to yield important “co-benefits” by reducing emissions of other pollutants that also are byproducts of combustion.⁴² Unlike GHG emissions, which are harmful globally in the aggregate, companion emissions such as nitrogen oxides, sulfur oxides, particulate matter, and hazardous

air pollutants, cause adverse public health to immediate or local receptors (i.e., people nearby the emissions). Consequently, to the extent that combustion of GHG-emitting fuels declines, so also will public exposure to such “conventional” pollutants long regulated by environmental agencies. Communities hosting industrial facilities and major transportation arterials, typically lower-income and minority communities,⁴³ would accordingly benefit from the reduction of these “co-pollutants.”

Economic Impact

Beyond the emissions reductions that are the animating impetus for implementation of a carbon tax, several studies have concluded that, even as stand-alone fiscal policy, a well-designed state-level carbon tax can improve outcomes in relevant indicia such as state gross domestic product, employment,

³⁵ A proposed carbon tax in New York starting at \$35/metric ton and rising \$15 per year until reaching \$180 per ton has been projected to reduce GHG emissions by 35.9% by 2040 compared to a no-action scenario. Sara Hsu, A Carbon Tax for New York State 11, <http://gelfny.org/wp-content/uploads/2015/12/NYSCarbonTaxWhitePaper.pdf> [https://perma.cc/ZL37-C2DB].

³⁶ The Massachusetts Department of Energy Resources study modeled three scenarios of carbon taxes beginning at \$10/ton and rising to \$50, \$75, and \$100 by 2040, respectively. The low, medium, and high cases modeled economy-wide GHG emissions reductions of approximately 5–10% below the no-tax base case scenario. MASS. DOER REPORT, *supra* note 15, at 110 fig.V.3. The relatively modest drops in emissions in the Massachusetts study are attributed to a relatively inelastic demand for fossil fuels, especially over the short term; the relatively small commodity price increases resulting from the carbon tax rates modeled; and Massachusetts’s status as a relatively low CO₂-emitting state. *Id.* at 112.

³⁷ A study of a carbon tax in Rhode Island projected GHG emissions reductions ranging between approximately 20% and 42% below 1990 levels (and approximately 22% and 44% from business as usual (BAU)) by 2040 attributable to a tax of \$15/metric ton rising \$5 per year until reaching \$135/ton. The difference of outcomes in the model is attributed to varying policy choices with respect to allocation of the revenues raised. SCOTT NYSTROM, REG’L ECON. MODELS, INC. (REMI), THE ECONOMIC, FISCAL, EMISSIONS, AND DEMOGRAPHIC IMPACT OF A PRICE ON CARBON DIOXIDE IN RHODE ISLAND, at 33 fig.5.1, 34 fig.5.2 (Apr. 8, 2015) [hereinafter RI REMI], http://www.energizeri.org/uploads/5/4/5/8/54586171/the_economic_fiscal_emissions_and_demographic_impact_of_a_price_on_carbon_in_ri.pdf.

³⁸ SCOTT NYSTROM, REMI, THE ECONOMIC, FISCAL, EMISSIONS, AND DEMOGRAPHIC IMPLICATIONS FROM A CARBON PRICE POLICY IN VERMONT 29 (Nov. 13, 2014) [hereinafter VT REMI], http://www.energyindependentvt.org/wp-content/uploads/2015/04/REMI_Final.pdf (carbon taxes starting at \$5 per metric ton and topping out in three scenarios at \$50, \$100, and \$150 per ton applied to the non-electric sectors yielded emissions reductions of 16%, 31%, and 41% from a no-tax baseline by 2040).

³⁹ JENNY H. LIU & JEFF RENFRO, NW. ECON. RESEARCH CTR., CARBON TAX AND SHIFT: HOW TO MAKE IT WORK FOR OREGON’S ECONOMY, at 5 fig.A & tbl.A (Mar. 1, 2013) [hereinafter OREGON NERC], <https://www.pdx.edu/nerc/sites/www.pdx.edu/nerc/files/carbontax2013.pdf> (utilizing British Columbia carbon tax as basis, modeled a tax on CO₂e of \$10 per ton, rising \$10 per year until reaching a maximum amount of \$60 per ton; GHG emissions modeled to decrease by 10.6% from 1990 levels and approximately 17% from BAU case).

⁴⁰ A carbon tax rejected by voters in a referendum in Washington State in 2016 would have imposed a revenue-neutral carbon tax at an initial level of \$25, rising annually by 3.5% plus inflation per year until reaching \$100 per ton in 2016 dollars. *Our Policy*, CARBON WASH., <http://yeson732.org/plain-language/> (last visited Oct. 10, 2017). The tax was projected to reduce GHG emissions by approximately 2% per year until 2050. Yoram Bauman, *The #1 Question from Progressives about Revenue-Neutral Carbon Taxes*, SIGHTLINE INST. (Oct. 30, 2017, 6:47 AM), <http://www.sightline.org/2014/10/30/the-1-question-from-progressives-about-revenue-neutral-carbon-taxes/>. A subsequent proposal from Washington’s Governor Inslee would impose a tax at similar levels, but with the majority of proceeds going toward education, and the remainder primarily toward jobs and sustainable infrastructure spending. Gov. Jay Inslee, Policy Brief, *Leading the Fight Against Carbon Pollution* (Dec. 2016), http://ofm.wa.gov/budget17/highlights/201719_policybrief_CarbonPollution.pdf.

⁴¹ See *supra* note 31.

⁴² See, e.g., JONATHAN J. BUONOCORE ET AL., AIR QUALITY AND HEALTH CO-BENEFITS OF A CARBON FEE-AND-REBATE BILL IN MASSACHUSETTS, <https://1jf7652uqh8csljrqt8yp9l-wpengine.netdna-ssl.com/wp-content/uploads/2017/04/Study-Carbon-Pricing-and-Public-Health.pdf> (last visited Oct. 10, 2017); see also George D. Thurston & Michelle L. Bell, *The Human Health Co-benefits of Air Quality Improvements Associated with Climate Change Mitigation*, in GLOBAL CLIMATE CHANGE AND PUBLIC HEALTH 137 (2014); Susan C. Anenberg et al., *Global Air Quality and Health Co-benefits of Mitigating Near-Term Climate Change Through Methane and Black Carbon Emission Controls*, 120 ENVTL. HEALTH PERSP. 831 (June 2012).

⁴³ See, e.g., JAMES K. BOYCE & MANUEL PASTOR, ECON. FOR EQUITY & ENV’T, COOLING THE PLANET, CLEARING THE AIR: CLIMATE POLICY, CARBON PRICING, AND CO-BENEFITS 37–39 (Sept. 2012), https://www.peri.umass.edu/fileadmin/pdf/published_study/Cooling_the_Planet_Sept2012-1.pdf; Katie Valentine, *The Co-Benefits of Pricing Carbon: How Lowering Local Pollution Can Help Achieve Environmental Justice*, THINKPROGRESS (Sept. 24, 2012, 7:01 PM), <https://thinkprogress.org/the-co-benefits-of-pricing-carbon-how-lowering-local-pollution-can-help-achieve-environmental-a6ae350e1ccd/>.

disposable income, and income distribution.⁴⁴ In effect, there may not necessarily be a tradeoff between cutting emissions and economic growth.⁴⁵ These studies suggest that there is a double policy win available to enacting states: reduced emissions (GHGs and co-pollutants) and improved local economies. Moreover, carbon tax proposals often include mildly redistributive rebates to low- and moderate-income households intended to reverse the regressivity that would otherwise be a feature of a broad-based consumption tax. If one favors redistributive policies to ameliorate income inequality, then a carbon tax could be seen as a triple policy win.

Considerations in the Design of a State-Level Carbon Tax

Designing a state-level carbon tax should be guided by three primary considerations: effectiveness, fairness, and efficiency. Of these, the first two are essential (without the first you have no tax, without the second you have no deal), while there may be more tolerance to loosen the demands of the latter. These considerations boil down to two essential elements that are the sine qua non of any carbon tax scheme: an adequate price signal and protection against operation of the tax in such a way that it would worsen conditions for the least well off and the middle class.

Price signal. First and foremost is the price signal itself, which is the core purpose of a carbon tax. To be effective, the carbon price must be set high enough to achieve significant emissions reductions. The tax should steadily rise in accordance with a pre-existing schedule to send a clear long-term signal to the marketplace, thereby allowing economic actors sufficient time to make and implement investment decisions to lower their carbon emissions (e.g., next vehicle and appliance purchases for

individuals, capital expense planning for businesses). Currently pending state carbon tax proposals range from \$5–35 per ton for initial rates, with scheduled escalations to \$60–185 per ton.⁴⁶

Avoid regressivity. Broad consensus exists among carbon tax advocates that a carbon tax should not increase economic burdens on the poor and lower middle class. Like all broad consumption taxes, such as the sales tax, a carbon tax would have this result absent other interventions. Therefore, a carbon tax should be wedded to offsetting measures to protect the least well off against the regressivity that a naked carbon tax would entail.⁴⁷ Such measures might include dividend payments or refundable income tax credits focused on the lowest quintiles of the population, or an offsetting reduction in existing regressive taxes, such as sales or payroll taxes.⁴⁸ Advocates of a universal approach prefer distributing dividends evenly per capita or per household, pointing out that such a plan would also be progressive and redistributive because the collection of the tax will fall on higher income brackets in greater dollar amounts due to their greater absolute carbon footprint.⁴⁹

These two features—an adequate price signal and protections against regressivity—are the essential minimum for any carbon tax. But they are far from the end of the story. Other important design considerations include:

- Scope of emissions covered
- Sectors covered
- Allocation of revenue and related considerations of environmental justice
- Leakage and competition
- Regional application

⁴⁴ See BROOKINGS REPORT, *supra* note 32, at 22 (some models suggest that carbon tax swaps can produce net pro-growth economic benefits); Peter Vail & Dallas Burtraw, *Putting Carbon Taxes to Work: Efficiency and Distributional Issues*, RES. FOR THE FUTURE (Mar. 22, 2016), <http://www.rff.org/blog/2016/putting-carbon-tax-revenues-work-efficiency-and-distributional-issues> (using carbon tax revenue to reduce existing distortionary taxes could lead to more economic growth); see also MASS. DOER REPORT, *supra* note 15, at 91–94; RI REMI, *supra* note 37, at 13–26; VT REMI, *supra* note 38, at 12–16; OREGON NERC, *supra* note 39, at 10–16. In addition, British Columbia's experience suggests that local economic benefit is compatible with carbon tax-driven emissions reductions. See, e.g., NOAH MELTON & JOTHAM PETERS, NAVIUS RESEARCH INC., IS BRITISH COLUMBIA'S CARBON TAX GOOD FOR HOUSEHOLD INCOME? 10 (July 2013), <http://www.naviusresearch.com/wp-content/uploads/2016/06/BC-Carbon-Tax-Full-Study.pdf> (average British Columbian household is better off with the carbon tax than without); see also *British Columbia's Revenue-Neutral Carbon Tax*, *supra* note 31 (carbon tax funded reduction of 5% in first two personal income tax rates, low-income tax credit, rural homeowner benefit, reductions in general and small business corporate income tax rates, industrial property tax credit).

⁴⁵ OREGON NERC, *supra* note 39, at 20. The study additionally concluded that a well-designed carbon tax could increase competitiveness in some industries. *Id.*

⁴⁶ See *supra* notes 35–40 and accompanying text. Typically, in the proposed state carbon tax regimes, the tax is levied at the point of extraction or first sale into a state. The carbon tax bill currently pending in New York would apply the carbon tax to fossil fuel distributors and utilities. See N.Y. Assembly Bill No. 107 (proposing to add N.Y. TAX LAW § 289-h, among other provisions).

⁴⁷ Carbon-taxed expenditures form a greater percentage of household income at the lower brackets, although higher brackets tend to pay more carbon tax in absolute dollars. See, e.g., BROOKINGS REPORT, *supra* note 32, at 21.

⁴⁸ A simple reduction of the income tax rate at the lowest brackets will not make low-income earners whole because when an emissions tax rate is high enough to produce meaningful emissions reductions, the lowest quintile is projected to pay more in carbon taxes than it pays in income tax. See MASS. DOER REPORT, *supra* note 15, at 55–56. Therefore, the lowest quintile's income tax payments do not form a pool sufficient to offset those taxpayers' carbon tax burden. Even making income tax credits "refundable," i.e., payable as a refund even beyond taxes paid, is only a partial solution that cannot reach nonfilers. For a thoughtful consideration of alternative measures intended to make the lowest-earning population whole, see *id.* at 43–59. The difficulty of using the tax system to fully protect the lowest income brackets has led many to favor a dividend system. *Id.*

⁴⁹ *Household Impact Study*, CCL, <https://citizensclimatelobby.org/household-impact-study/> (last visited Oct. 10, 2017).

These other features are discussed below.

Scope of emissions coverage. The scope of the carbon tax should include other important GHGs, especially methane, which has 25 times the global warming potential of carbon dioxide over a 100-year period.⁵⁰ In the case of natural gas, the principal methane emissions are associated not with combustion but with fugitive emissions during the extraction and distribution processes.⁵¹ A tax on natural gas can account for these emissions by applying the tax not just to the carbon dioxide emissions from natural gas combustion,⁵² but to an imputed “methane coefficient” derived to represent the full life-cycle emissions in the natural gas production process.⁵³

Without reflecting the impact and cost of methane emissions, a carbon tax would unduly favor natural gas usage. Indeed, important questions have been raised about whether, with respect to overall heat-trapping impact, U.S. GHG emissions have actually declined over the past decade, as often reported,⁵⁴ after accounting for fugitive methane releases.⁵⁵

Treatment of electric sector emissions. A major policy consideration is whether to include the electric sector in a state-level carbon tax. A comprehensive analysis of carbon taxation in Massachusetts suggested that electric sector emissions be exempted from state carbon tax proposals because of the Commonwealth’s relatively decarbonized electric generation, the small additional emissions reductions modeled, and because of complications in applying a price to the carbon content of emissions associated with imported electric generation.⁵⁶ By

contrast, pending carbon tax legislation in New York maintains electric utilities within its scope.⁵⁷

A unique consideration with respect to a New York carbon tax is the potential for NYISO to implement a price on carbon in the electric sector. A report prepared for NYISO by the Brattle Group in August 2017 (NYISO Report) recommended imposing a carbon charge of \$40 per ton on electricity generated in the state and including imported electric generation within the scope of the charge in order to avoid leakage.⁵⁸ NYISO has not yet taken action on the recommendation. With the NYISO Report on the table, careful consideration should be given to determining how a carbon tax would interact with a potential NYISO charge. Were NYISO to move ahead with a carbon charge proposal, an economy-wide carbon tax would need either to exempt electricity from its scope, or credit back the NYISO price (as well as the RGGI price) to avoid double taxation. Alternatively, the NYISO charge could be eliminated in the event that a state economy-wide tax, with the electric sector within its scope, is enacted.

Far from being in tension, there is every reason to believe that the existence of an economy-wide state carbon tax would be complementary to and would strengthen the impact of the NYISO price. An economy-wide carbon tax would address two important limitations of a NYISO carbon charge rooted in the limits of NYISO’s jurisdiction. First, NYISO administers wholesale pricing and dispatch on the New York electric grid. Accordingly, only grid participants would face the NYISO carbon charge.⁵⁹ As a result, a NYISO charge could encourage

⁵⁰ *Direct Global Warming Potentials*, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC), IPCC FOURTH ASSESSMENT REPORT: CLIMATE CHANGE 2007, § 2.10.2 (2007), https://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html. If a 20-year time comparison is used, methane has 72 times the global warming potential. *Id.* More recent IPCC data shows methane’s global warming potential over these timeframes to be 34 and 86 times that of CO₂ in the 100-year and 20-year timeframes, respectively. Gayathri Vaidyanathan, *How Bad of a Greenhouse Gas Is Methane?*, SCI. AM. (Dec. 22, 2015), <https://www.scientificamerican.com/article/how-bad-of-a-greenhouse-gas-is-methane/>.

⁵¹ See, e.g., Clifford Krauss, *Exxon Aims to Cut Methane Leaks, a Culprit in Global Warming*, N.Y. TIMES, Sept. 25, 2017, <https://www.nytimes.com/2017/09/25/business/energy-environment/exxon-methane-leaks.html>.

⁵² Natural gas’s CO₂ emissions are substantially lower than carbon emissions associated with burning either coal or petroleum products. *How Much Carbon Dioxide Is Produced When Different Fuels Are Burned?*, U.S. ENERGY INFO. ADMIN., <https://www.eia.gov/tools/faqs/faq.php?id=73&t=11> (last reviewed June 8, 2017).

⁵³ The Rhode Island study followed this approach. RI REMI, *supra* note 37, at 10. The Massachusetts study included a small markup related to methane leakage. See MASS. DOER REPORT, *supra* note 15, at 84.

⁵⁴ See, e.g., *U.S. Energy-Related CO₂ Emissions Fell 1.7% in 2016*, U.S. ENERGY INFO. ADMIN.: TODAY IN ENERGY (Apr. 10, 2017), <https://www.eia.gov/todayinenergy/detail.php?id=30712>.

⁵⁵ Joe Romm, *Methane Leaks Erase Climate Benefit of Fracked Gas, Countless Studies Find*, THINKPROGRESS (Feb. 17, 2016, 8:25 PM), <https://thinkprogress.org/methane-leaks-erase-climate-benefit-of-fracked-gas-countless-studies-find-8b060b2b395d/>.

⁵⁶ In reaching this recommendation, the Massachusetts study specifically excluded an expectation that a substantial percentage of the motor vehicle fleet and space heating would convert to electricity before 2040. MASS. DOER REPORT, *supra* note 15, at 36.

⁵⁷ Assembly Bill No. 107 (proposing to add N.Y. TAX LAW § 289-h, among other provisions).

⁵⁸ Several studies have suggested methodologies for determining a reasonable carbon emissions value for imported electricity. See, e.g., NYISO REPORT, *supra* note 12, at 6–8, 23–26; MASS. DOER REPORT, *supra* note 15, at 38–41. In California, the CO₂e emissions rate for imported “unspecified sources” is assigned a historically- and regionally-based default rate, which suggests that the problem is not insoluble. CARB, *Guidance for California’s Mandatory Greenhouse Gas Emissions Reporting § 5.7* (Mar. 9, 2017), <https://www.arb.ca.gov/cc/reporting/ghg-rep/ghg-rep-power/epe-faqs.pdf>; see also NYISO REPORT, *supra* note 12, at 14.

⁵⁹ NYISO REPORT, *supra* note 12, at 18–19 (NYISO would administer the carbon charge in commitment, dispatch, and settlement processes).

leakage to “behind the meter” fossil fuel-based generation, such as dedicated natural gas- or diesel-burning units, because such units would not bear the carbon charge.⁶⁰ On the other hand, imposing a carbon tax on the fuels powering such units would equalize the playing field and eliminate the price advantage such units would otherwise enjoy over centralized NYISO-administered power generation. A second concern about the carbon charge recommended in the NYISO Report, acknowledged by its authors, is the potential for a carbon price imposed on electricity to discourage eventual electrification of transportation and space heating, an important strategic component of economy-wide decarbonization.⁶¹ Absent a carbon charge, the fossil fuels combusted in those sectors would enjoy a corresponding price advantage over electrified transportation and heating. In fact, the NYISO Report specifically recognized the value of an economy-wide carbon tax in counterbalancing unintended disincentives to electrification⁶² that an electric-sector-only carbon charge might entail.⁶³

The “problem” of revenue. The effort to advance carbon taxes has been beset by a surprisingly debilitating discussion about what to do with the revenue. On one side are proponents who advocate a revenue-neutral approach in which new revenues should be either refunded to state residents or used to fund tax reductions. On the other side are those who favor using the revenue to further support renewables, mass transit and other infrastructure projects, energy efficiency measures, climate adaptation, and/or social welfare spending to protect those most vulnerable to the effects of climate change.⁶⁴

The principal reasons that many carbon tax advocates favor revenue-neutral treatment of proceeds should be expressly stated. Much of the preference comes down to two beliefs. One is that

maintaining revenue neutrality is the best way to broaden and deepen political support for a carbon tax over the long term. By basing a carbon tax on a no-growth-of-government approach, many climate activists believe that a carbon tax will be more acceptable to principled moderates and conservatives who, while recognizing the threat of unchecked climate change, also are committed to small government principles and do not want climate change policy to be the occasion to expand government. More broadly, many proponents believe that tying carbon tax revenues to highly visible periodic dividend checks or other rebates will build popularity for a carbon tax over the long term, including for increases in the tax over time so long as such increases translate directly to increased dividend checks.

In addition to these political assessments, many proponents of revenue neutrality are also attracted by the intellectual “elegance” of a revenue-neutral tax, which would drive down emissions by virtue of “internalizing” externality costs in everyday transactions without any new fiscal outlay. Other proponents of revenue neutrality argue that revenues should be allocated to judicious tax reductions. In this view, carbon taxes could be a first step in aligning taxes more generally with desired economic outcomes by removing drags on beneficial activities such as work while shifting taxation onto polluting activities that should be discouraged. In addition, several analysts find tax reductions to have a greater stimulative economic impact than dividends or rebates.⁶⁵

These two competing alternatives within the revenue-neutral camp—dividends/rebate and offsetting tax reductions—each raise distinct forward-looking fiscal issues beyond climate policy. Dedicating carbon tax revenue to fund direct payments to individuals or households shares features with minimum or universal basic

⁶⁰ Such an unintended consequence could exacerbate REV’s own incentives available to decentralized fossil-burning generation units because of their grid-supporting attributes such as ready “dispatchability.” See, e.g., MATTHEW CHRISTIANSEN & ELIZABETH B. STEIN, THE RISE OF DG: OPTIONS FOR ADDRESSING THE ENVIRONMENTAL CONSEQUENCES OF INCREASED DISTRIBUTED GENERATION (Feb. 2016), <http://guarinicenter.org/wp-content/uploads/2016/02/DG-Policy-Br-Rough-Draft-vFINAL.pdf> [<https://perma.cc/M6DG-SMKT>]. Many large electric users, such as universities, military installations, hospitals, and industrial sites, frequently operate on-site generation units, such as simple-cycle natural gas units or fossil-burning combined heat and power units. Indeed, such configurations are often encouraged under the rubric of “micro-grids.” Many other facilities have backup generation that owners may be tempted to deploy in non-emergency situations if economic incentives provide sufficient inducement. Presumably, when such units do not participate in NYISO’s dispatch system, and provide power only to their host or other dedicated users, the NYISO carbon price would not apply.

⁶¹ See, e.g., CARB, FIRST UPDATE TO CLIMATE CHANGE SCOPING PLAN 101 (May 2014), https://www.arb.ca.gov/cc/scopingplan/2013_update/first_update_climate_change_scoping_plan.pdf (“Electrification in the transportation and building sectors must coincide with decarbonization of electricity supply”); JÜRGEN WEISS ET AL., BRATTLE GROUP, ELECTRIFICATION: EMERGING OPPORTUNITIES FOR UTILITY GROWTH (Jan. 2017), http://www.brattle.com/system/news/pdfs/000/001/174/original/Electrification_Whitepaper_Final_Single_Pages.pdf (counter-narrative to utility death spiral based on electrification-driven decarbonization strategies for transportation and heating); Max Wei et al., *Deep Carbon Reductions in California Require Electrification and Integration Across Economic Sectors*, ENVTL. RES. LETTERS (Jan.-Mar. 2013), <http://iopscience.iop.org/article/10.1088/1748-9326/8/1/014038>.

⁶² NYISO REPORT, *supra* note 12, at xi (carbon charge on all sectors would be the “most elegant solution”).

⁶³ Two other important shortcomings of the carbon charge discussed in the NYISO Report relate to the scope and plan of the proposal, and not to its jurisdictional limitations. One is that the NYISO carbon pricing does not appear to apply to methane, or to any GHG other than CO₂, at least as conveyed in the NYISO Report. The other is that the proposal does not appear to contemplate the escalation of the carbon price over time.

⁶⁴ The use of funds to help lower-income individuals reduce their carbon footprint and therefore their exposure to the carbon tax would further both environmental and social equity goals. Programs in this vein could include increased support for home energy efficiency, electric vehicles, and mass transit.

⁶⁵ See BROOKINGS REPORT, *supra* note 32, at 22; OREGON NERC, *supra* note 39, at 20. *But see* MASS. DOER REPORT, *supra* note 15, at 8–9, 47–48 (tax reduction-only strategy inequitable).

income proposals that have originated well outside the confines of environmental policy⁶⁶ and suggests one funding mechanism to support such ends. On the other hand, to the extent the revenues of a carbon tax may be used to offset or displace traditional tax types, such as income, payroll, property, sales, or business activity taxes, a carbon tax suggests a means to begin to “re-base” the tax system away from incidence upon (and therefore disincentivizing) productive and useful activity—such as work, home ownership, and business formation—and toward activities society wishes to discourage, such as pollution. It is fairly easy to argue that, because of its existing tax structure,⁶⁷ New York presents a particularly strong case for using a substantial portion of the proceeds of a carbon tax to offset the state’s large complement of activity-distorting taxes.

Another potential use of proceeds is payment for New York-based activities that extract GHGs from the atmosphere—the other side of the coin from taxes on GHG-emitting activity. Logically, such payments would be made at the same price per ton of GHGs applied to emissions—after all, the social cost of carbon based on its warming impact is the same for a ton of avoided emissions as a ton of pollutants removed. In fact, many scientists now believe that emissions reductions alone are no longer sufficient to avoid calamitous climate change impacts and that some sort of extraction strategy will be necessary to return atmospheric concentrations of GHGs to sustainable levels.⁶⁸ Under current market conditions, however, there is little economic incentive for doing so. More parochially, instituting a carbon payment system also holds out the prospect of making New York a center for the development of such technology, and the investment and employment that could follow.⁶⁹

Environmental justice considerations. Environmental justice advocates frequently support the allocation of carbon tax revenue toward spending on climate adaptation and related infrastructure projects. Such proposals generally focus on protecting

those most vulnerable to climate change, typically based on geographic location. It should be noted for consideration in this debate that, even in revenue-neutral formulations, a carbon tax can readily be structured to avoid regressivity and even be redistributive.⁷⁰ This is so because upper income brackets will tend to pay more carbon tax considering their generally larger (or multiple) residences and more frequent use of equipment and services requiring heat and power, such as transportation including air travel. If the rebate of revenues is level per capita or per household, then those expending less than average in absolute dollars on the carbon tax will come out ahead, even if they pay more carbon tax as a proportion of household income.⁷¹ In fact, dedication of too great a share of carbon tax revenue to spending puts this redistributive effect at risk and will leave lower-income carbon tax payers unprotected from a carbon tax’s inherent regressivity.⁷²

Carbon tax proposals, therefore, can readily be designed to protect against regressivity, and can even be redistributive, even if none of the revenues are allocated to expenditures. Furthermore, as noted above, all carbon taxes will tend to depress emissions of co-pollutants emitted during fossil fuel combustion.⁷³ Both of these significant outcomes of a revenue-neutral carbon tax plan would tend to benefit environmental justice communities. Consequently, the debate over whether to allocate proceeds in a revenue-neutral fashion or to support spending on new projects reduces in part to differences in the perceived value of distributing proceeds in a universal fashion—to generate and maintain broad political support for the tax over the long term, including increases in the tax rate over time—versus the value of infrastructure spending (and whether such spending, targeted tax reductions, or dividends is a more effective way to allocate resources to lower- and middle-income households). Resolving such a debate is well beyond the scope of this article—the debate ranges far beyond environmental policy, as commonly understood—and the breadth of

⁶⁶ Numerous economists, activists, and Silicon Valley tech sector representatives have called for the establishment of a basic minimum or basic universal income in recognition of the employment displacement taking place due to technology and automation. See Frances Coppola, *Top Economists Endorse Universal Basic Income*, FORBES (Aug. 31, 2017, 2:03 AM), <https://www.forbes.com/sites/francescoppola/2017/08/31/top-economists-endorse-universal-basic-income/>.

⁶⁷ New York is a top-10 taxer of income, sales, property, and business taxes. See *supra* note 2.

⁶⁸ See Chris Mooney, *The Sudden Urgent Quest to Remove Carbon Dioxide from the Air*, WASH. POST, Feb. 26, 2016, <https://www.washingtonpost.com/news/energy-environment/wp/2016/02/26/weve-reached-the-point-where-we-need-these-bizarre-technologies-to-stop-climate-change/>.

⁶⁹ Numerous technological approaches to CO₂ extraction are “in beta.” See, e.g., Nicola Jones, *Can Pulling Carbon from Air Make a Difference on Climate?*, YALE ENV’T 360 (Dec. 10, 2015), http://e360.yale.edu/features/can_pulling_carbon_from_air_make_a_difference_on_climate/; Adele Peters, *This Machine Just Started Sucking CO₂ Out of the Air to Save Us from Climate Change*, FAST CO. (May 31, 2017), <https://www.fastcompany.com/40421871/this-machine-just-started-sucking-co2-out-of-the-air-to-save-us-from-climate-change>; *Ctr. for Negative Carbon Emissions*, ARIZ. STATE UNIV., <https://cnce.engineering.asu.edu/> (last visited Oct. 10, 2017). In the distant (and hopeful) eventuality that activity increases to the point that such payments become financially burdensome, the policy could be revisited.

⁷⁰ Both the New York bill and the Republican proposal issued by Climate Leadership Council are redistributive, allocating carbon tax proceeds raised from the top quintiles to the bottom. N.Y. Assembly Bill No. 107 (proposing to add N.Y. Tax Law § 289-j, among other provisions, which would return 60% of proceeds to low- and moderate-income residents); JAMES A. BAKER, III, ET AL., CLIMATE LEADERSHIP COUNCIL, *THE CONSERVATIVE CASE FOR CARBON DIVIDENDS 2* (Feb. 2017), <https://www.clcouncil.org/wp-content/uploads/2017/02/TheConservativeCaseforCarbonDividends.pdf> (per U.S. Dept. of Treasury, bottom 70% would come out ahead under proposal).

⁷¹ *Household Impact Study*, *supra* note 49.

⁷² Charles Komanoff, *The Climate Solution That Boosts Income for Over 60% of Americans – The Ones Who Most Need It*, CARBON TAX CTR. (Sept. 15, 2017), <https://www.carbontax.org/blog/2017/09/15/worsening-income-inequality-should-broaden-support-for-carbon-dividends/>.

⁷³ See *supra* notes 42–43 and accompanying text.

issues involved perhaps explains the difficulty carbon tax advocates have faced to date in reaching a serviceable consensus.

One might think that those favoring action on emissions reductions could relatively easily reach consensus on second-order questions like the allocation of revenue—after all, revenue is a good problem to have, and money has the favorable property of being fungible and infinitely divisible—but the issue has been a bedeviling one. The division over how to allocate carbon tax revenue famously resulted in the failure of a 2016 carbon tax referendum, which embodied a revenue-neutral approach, in Washington State.⁷⁴ The dangers of division among carbon tax advocates over revenue allocation issues are plain to see.

One possible basis for compromise between these two well-meaning constituencies—“pure” environmental policy advocates and environmental justice communities—might be to package a carbon tax with a separate “polluter pays” assessment on fossil fuel producers and importers, along the lines of the tax that originally funded Superfund cleanups.⁷⁵ Such a revenue stream could be directed exclusively toward mitigation and “just transition” projects, while keeping the carbon tax itself revenue neutral and tied to popular dividends, rebates, or tax cuts. In the absence of an alternate revenue source for such projects, it may be money’s property of infinite divisibility that will allow for hybrid solutions and compromises.

Leakage, imports, and competition. Many commentators on carbon taxes have been concerned about the potential for leakage—i.e., the possibility that purchasing may be redirected to out-of-state untaxed sources of the carbon fuels.⁷⁶ Indeed, to the extent such leakage occurs, it will frustrate the tax’s emissions reduction goals as well as deprive the taxing jurisdiction of revenue. What to do?

One option is nothing. Consider: state economies that must import their fossil fuels are already “leaking” significant economic value. According to one study, in Massachusetts, which has an

energy profile similar to New York in many respects,⁷⁷ 5–6% of gross state product (GSP) leaks out of state through its energy imports.⁷⁸ Several other studies have likewise projected net benefits to state economies, as measured by employment, wage growth, and GSP attributable to implementation of carbon taxation.⁷⁹ In other words, considered as an economic measure only, state-level carbon taxes repeatedly have been shown to be a net economic positive.

Additionally, revenue neutrality arguably offers its own form of antidote, at least in part, to the problem of leakage. Unlike other taxes imposed by New York over the decades, a revenue-neutral tax by definition would not be additive, and could be deliberately structured to offset some of New York’s most anticompetitive and most complained-about taxes. For example, directing carbon tax proceeds to offsetting, say, sales, payroll, or property taxes that inhibit people and companies from relocating to or remaining in New York would tend to counterbalance anticompetitive effects that a carbon tax may otherwise have on price structure.

Moreover, New York’s economy surely already suffers from some leakage attributable to many other taxes and regulations imposed over the course of New York’s history of developing protective social legislation and financing its governmental machinery. Examples include the state’s taxes on income, payroll, real property, gasoline, and business franchises; its workers compensation rates;⁸⁰ and the existing charge on carbon emissions imposed under the RGGI regime.⁸¹ In all these cases, New York has concluded that the benefit of adopting relatively high taxes and protective legislation or regulation outweighed other considerations. New York could simply conclude that the value of a carbon tax outweighed potential concerns about competitive impacts. But as shown above, the evidence to date suggests such a tradeoff is unnecessary.

None of which is to say that measures should not be taken to mitigate adverse effects on particular sectors of the economy or population, regardless of the aggregate benefit that a carbon tax

⁷⁴ See, e.g., David Roberts, *The Left vs. a Carbon Tax*, Vox (Nov. 8, 2016), <https://www.vox.com/2016/10/18/13012394/i-732-carbon-tax-washington>.

⁷⁵ The Superfund Revenue Act of 1986 amended the Internal Revenue Code to extend the environmental tax on petroleum and certain chemical feedstocks for five years, through 1991. See Superfund Amendments and Reauthorization Act of 1986, Pub. L. No. 99-499, 100 Stat. 1613.

⁷⁶ Under a state carbon tax regime, leakage pressures could be expected to manifest in the principal categories of economic activity subject to leakage under a carbon tax: purchase of gasoline and transportation fuels, wholesale and industrial electricity markets, provision of space heating, and purchase and sale of products (manufactured and agricultural). The markets for each are subject to differing dynamics bearing on the form and extent of potential leakage.

⁷⁷ Both New York and Massachusetts feature a relatively well-decarbonized electric sector, significant importation of electricity, and a largely services-based economy.

⁷⁸ MASS. DOER REPORT, *supra* note 15, at 92.

⁷⁹ MASS. DOER REPORT, *supra* note 15, at 92; see also *supra* note 44. No study reviewed for this article has concluded that leakage outweighed other economic benefits, let alone environmental benefits.

⁸⁰ See *supra* note 2. New York ranked third in a 2016 survey of workers’ compensation premiums. See OR. DEPT. OF CONSUMER & BUS. SERV., 2016 OREGON WORKERS’ COMPENSATION PREMIUM RATE RANKING SUMMARY (Oct. 2016), http://www.cbs.state.or.us/external/dir/wc_cost/files/report_summary.pdf. In the case of gasoline, where New York is already on the losing end of a tax-based price gradient with its neighboring states, some leakage surely already occurs and could increase in the event of a carbon tax further increasing the pump price. A carbon tax of \$35 per ton would translate into an increase of approximately 31 cents per gallon. See, e.g., Andrew Ratzkin, *You Say You Want a REV Solution: Considering New York’s Marquee Energy Initiative as Climate Change Policy*, 41 COLUM. J. ENVTL. LAW 471, 511. While we would expect some loss of sales where people can with a modest effort cross to other states, cross-Hudson tolls tend to make this behavior uneconomic downstate where the majority of the population resides.

⁸¹ See, e.g., NYISO REPORT, *supra* note 12, at 8 (35–37% leakage under RGGI); SHELLEY WELTON ET AL., CTR. FOR CLIMATE CHANGE LAW, COLUMBIA LAW SCH., REGULATING ELECTRICITY IMPORTS INTO RGGI: TOWARD A LEGAL, WORKABLE SOLUTION 1 (Aug. 2013), https://web.law.columbia.edu/sites/default/files/microsites/climate-change/files/Publications/Fellows/RGGI%20paper_Final%20Aug%2021_2013.pdf (imports make up approximately 16% of New York’s electricity).

would be expected to deliver. Arguably, then, a carbon tax should include offsetting tax reductions for sectors especially sensitive to out-of-state competition, such as manufacturing and agriculture. In fact, several proposed and existing subnational carbon taxes feature an offsetting tax reduction (or exemption) to address such effects.⁸² In New York, a carbon tax could be coupled with industrial property tax exemptions or other forms of support, such as those long sought by New York manufacturing trade associations.⁸³ Although it would be complicated to implement on the state level, a feature refunding the imputed carbon tax on exported goods could also be considered.

An important counter-leakage effect of a state-level carbon tax may be the incentive the tax, if optimally designed, can give to other states to enact their own carbon taxes. For example, presume New York is taxing the carbon content of fracked gas imported from Pennsylvania, or petroleum refined in New Jersey or Texas.⁸⁴ Policymakers in these exporting states presumably would dislike the fact that New York alone would enjoy the revenue earned from such taxes. Now suppose New York's tax

provides a credit to the extent that the carbon content of imported fuels has already been taxed elsewhere. In that case, it would be possible—and economically rational—for those other states to impose their own carbon tax, to retain the proceeds for themselves because doing so would not place the other states' exports to New York (or other states imposing a carbon tax) at more of a disadvantage than had already been the case. In this way, coupling a carbon tax with a carefully constructed exemption for goods already carbon-taxed could help incentivize the extension of carbon taxes to other states. Such a development would advance the carbon tax's chief policy goal because GHGs would then be taxed across a broader geographical and economic area. Of course, the spread of carbon taxation would also attenuate leakage and competitive impacts: to the extent other states follow suit, any gradient favoring untaxed jurisdictions will tend disappear.⁸⁵ Indeed, a similar dynamic has been expressly recognized as positive feature of various national-level proposals.⁸⁶ Moreover, such treatment would also tend to strengthen the constitutional bona fides of a carbon tax if challenged by out-of-state producers.⁸⁷

⁸² MASS. DOER REPORT, *supra* note 15, at 71–72; *I-732 Will Help Washington Manufacturers Comply with the New Clean Air Rule*, CARBON WASH. (Nov. 4, 2016), <https://yeson732.org/i-732-will-help-manufacturers-comply-clean-air-rule/>; *British Columbia's Revenue-Neutral Carbon Tax*, *supra* note 31 (industrial property tax credit).

⁸³ For example, for several years the Manufacturers Association of Central New York has called for the enactment of an industrial property tax credit, the Empire State Apprenticeship Program, and various small business tax credits, such as the reduction of the personal income tax rate as applied to small business. See *Legislative Memos*, MANUF. ASS'N OF CENT. N.Y., <https://www.macny.org/advocacy/legislative-memos/> (last visited Oct. 16, 2017). Potentially, protection of manufacturers could extend to refunding imputed carbon taxes to in-state manufacturers of exported goods.

⁸⁴ In practice, in an energy-importing state like New York, a tax on fossil fuels would tend to function as a tax on imports, almost by definition. *But see 2016 Oil & Gas Production Data*, N.Y. DEPT. OF ENVTL. CONSERV. (July 5, 2017), <http://www.dec.ny.gov/energy/36159.html> (12,943 oil and gas wells reported operating in New York in 2016).

⁸⁵ It is also possible that the existence of a carbon tax could help New York defensively. If U.S. goods may face duties in retaliation for withdrawal from the Paris Agreement, New York carbon-taxed goods may be positioned to seek an exemption. *Carbon Tariffs and the EU's Steel Industry*, ECONOMIST, Feb. 16, 2017, <https://www.economist.com/news/finance-and-economics/21717101-border-taxes-carbon-may-be-counterproductive-carbon-tariffs-and-eus-steel>; Coral Davenport, *Diplomats Confront New Threat to Paris Climate Pact: Donald Trump*, N.Y. TIMES, Nov. 18, 2016, <https://www.nytimes.com/2016/11/19/us/politics/trump-climate-change.html>.

⁸⁶ BAKER ET AL., *supra* note 70, at 1 (“Border adjustments for the carbon content of both imports and exports would protect American competitiveness and punish free-riding by other nations, encouraging them to adopt carbon pricing of their own.”); Ted Halstead, *A Climate Solution Where All Sides Can Win*, TED (Apr. 2017), https://www.ted.com/talks/ted_halstead_a_climate_solution_where_all_sides_can_win (“Suppose Country A adopts a carbon dividends plan, and Country B does not. Well, to level the playing field and protect the competitiveness of its industries, Country A would tax imports from Country B based on their carbon content. Fair enough. But here's where it gets really interesting, because the money raised at the border would increase the dividends going to the citizens of Country A. Well, how long do you think it would take the public in Country B to realize that that money should be going to them, and to push for a carbon dividends plan in their own land? Add a few more countries, and we get a new climate domino effect.” (at minute 8:05)).

⁸⁷ Full treatment of the constitutionality of a carbon tax primarily falling on imported fuels is beyond the scope of this article. For a thorough consideration of related questions about permissibility of carbon charges on electrical imports into a state, see WELTON ET AL., *supra* note 81.

However, a few considerations are in order. First, a carbon tax should be designed to apply in a nondiscriminatory manner. In the case of New York, it may be a helpful fact that the state has an existing fossil fuel extraction industry, albeit a small one. See *2016 Oil & Gas Production Data*, *supra* note 84. The existence of an in-state fossil fuel sector treated identically would tend to support a finding of nondiscrimination in the event of a constitutional challenge to the tax under the dormant Commerce Clause. Additionally, as noted in the text above, the availability of a carve-out for imported fuels already taxed would also support the tax against a challenge from out-of-state producers. Second, cigarette taxes, broadly directed by most states to wholly out-of-state importers for public health purposes closely analogous to the environmental and public welfare purposes of a carbon tax, are widespread and in good constitutional standing. Third, *Rocky Mountain Farmers Union v. Corey*, 730 F.3d 1070 (9th Cir. 2013)—which upheld California's application of its low carbon fuel standard to out-of-state fuel producers, not electricity—has been interpreted as “leaving ample room for novel state efforts to address climate change,” Shelley Welton, *Plugging the Leaks: Can RGGI Regulate Emissions from Imported Electricity?* (Part 2), 24 ENVTL. L. IN N.Y. 193, 193 (Dec. 2013), perhaps even more so in the case of fuel importation than electricity. See also WELTON ET AL., *supra* note 81, at 19 (*Rocky Mountain Farmers Union* case was expected to have a “major impact in shaping how the [dormant Commerce Clause] is applied to the novel field of state carbon regulation”). Fourth, California's assessment of border-like charges to imported electricity based on carbon content also remains in good standing. NYISO REPORT, *supra* note 12, at 15. Lastly, the Federal Power Act would not apply to a carbon tax falling on fossil fuels, and therefore such a tax would face one less legal hurdle than charges on imported electricity under consideration to protect the RGGI states from leakage problems in that market.

Other jurisdictions may be induced to adopt carbon taxes not only by the incentives created by a “trading partner” state’s carbon tax, but also through direct invitation to cooperate, as in the case of RGGI. Indeed, the best strategy for dealing with leakage may be the one adopted by RGGI: go regional.

Regional approach. An interstate accord to apply a carbon tax to a group of states would accomplish a number of objectives with respect to leakage. Most obviously, a regional approach would mitigate or eliminate competitive disadvantages certain businesses within a taxing state would suffer when faced with out-of-state competitors who would not otherwise be subject to a carbon tax.⁸⁸ And a regional approach would subject a greater quantity of GHG emissions to the tax and its reduction pressures, thereby increasing the overall effectiveness of the tax as a climate policy tool.

Seeking a regional tax accord certainly would be more complex than pursuing a New York-only tax due to an increased number of actors and circumstances to be considered and accommodated in designing the tax. At the same time, a regional approach could make the task of adopting a carbon tax easier politically, if lawmakers and citizens gain confidence that a level playing field will extend beyond their single state.

To be worthy of the name, any regional approach to a carbon tax should contain certain bare-minimum common features across participating jurisdictions: the types of pollutants and the sources and sectors subject to the tax should be part of a common regional floor. Similarly, agreement on the initial rate of taxation and scheduled increases are also fundamental to any pact. (However, if any jurisdiction desired to expand the scope of the application of the tax or to exceed the minimum tax rates imposed, there should be no basis for any objection by neighboring states.) Other features of the tax could be left to participating states to determine on their own. For example, allocation of revenues, whether to increase the scope or rate of taxation beyond the regional minimum, and whether to term the carbon charge a tax or fee⁸⁹ could all safely be left to each state.

Most of the states now considering a carbon tax are located together in the Northeast: Massachusetts, Connecticut, Rhode Island, and Vermont all have produced studies and/or pending legislation. Rhode Island, where the state economy is especially sensitive to Massachusetts, has already included in its study consideration of the impact of enacting a tax alone or in sync with Massachusetts.⁹⁰ These states suggest an obvious nucleus for a regional carbon tax.⁹¹

Several possible mechanisms suggest themselves for proceeding on a regional basis. In one scenario, the participating states could convene and adopt a common plan, using the RGGI process as a model. Another possibility is that states could proceed individually, but include conditionality in their enabling state legislation to postpone the effective date of the tax until, say, one or more abutting states adopt a carbon tax with specified minimum features.⁹² In either scenario, however, it would obviously be beneficial for the states to convene to discuss the common features upon which they can mutually agree.

The Politics

While daunting, the politics of a carbon tax in New York should be more favorable than in many other states. In addition to New York’s long status as an environmental leader dating back to the earliest days of environmental law, the state also has the distinct advantage of not being highly dependent economically on or beholden politically to the fossil fuel industry;⁹³ with a fracking ban in place, New York is not home to significant fossil fuel extraction.⁹⁴ To the extent that the fossil fuel industry contracts, most of the pain will tend to land elsewhere.

A coalition to support carbon taxes can readily be envisioned. At its center, of course, are the environmentally-minded who champion the GHG emissions reduction goals on their own terms, and businesses in competition with fossil-based fuels—such as wind, solar, biomass, heat-pump, energy efficiency

⁸⁸ BROOKINGS REPORT, *supra* note 32, at 23 (“best resolution is to harmonize carbon pricing policies across jurisdictions to eliminate distortions in trade and investment”).

⁸⁹ Whether to call a carbon charge a tax or fee should in principle depend on the use of the proceeds. If the charge is fully rebated and never used to support government activity, then a strong argument can be made for calling the levy a fee.

⁹⁰ RI REMI, *supra* note 37, at 37.

⁹¹ Washington, Oregon, and California all have considered or adopted carbon taxes and pricing to varying degrees and suggest another potential regional grouping.

⁹² One model is the interstate compact on electoral college reform whereby a state would award its electoral votes to the national majority vote winner, but only after states collectively representing a majority of electoral votes had adopted like legislation. Interestingly, New York is one of 10 states that has adopted contingent legislation in this area. *National Popular Vote Interstate Compact*, WIKIPEDIA, https://en.wikipedia.org/wiki/National_Popular_Vote_Interstate_Compact (last edited Oct. 3, 2017).

⁹³ New York’s fossil fuel industry mostly comprises distributors and retailers. Once upon a time, several of the major oil companies—Mobil, Exxon, and Texaco—had headquarters in the state. See James Barron, *Exxon Will Move Its Headquarters To Texas*, N.Y. TIMES, Oct. 27, 1989, <http://www.nytimes.com/1989/10/27/nyregion/exxon-will-move-its-headquarters-to-texas.html>; Elsa Brenner, *Morgan Stanley Seals Deal on Texaco Headquarters*, N.Y. TIMES, Mar. 31, 2002, <http://www.nytimes.com/2002/03/31/nyregion/in-business-morgan-stanley-seals-deal-on-texaco-headquarters.html>; Albert Scardino, *Mobil Relocating New York Headquarters to Virginia*, N.Y. TIMES, Apr. 25, 1987, <http://www.nytimes.com/1987/04/25/nyregion/mobil-relocating-new-york-headquarters-to-virginia.html>. Those days have long passed.

⁹⁴ *But see supra* note 87.

providers, etc.⁹⁵ This core can be expanded if a proposal and a supporting coalition are carefully constructed. For example, New York's electric utility industry, already having made significant progress in reducing its carbon profile, stands to greatly expand its market share if carbon taxes accelerate the electrification of transportation and ambient heating, both of which presently rely substantially on fossil fuels in the form of gasoline and diesel, and natural gas, propane, and heating oil, respectively.⁹⁶ Additional business support can perhaps be won by dedicating a portion of a carbon tax's proceeds to funding one or more long-standing goals of the state's manufacturing sector, such as reducing or eliminating the industrial property tax.⁹⁷ On the left side of the spectrum, climate activists have increasingly succeeded in forging links with social equity constituencies in recognition that low-income communities tend to be the most vulnerable to climate change as well as to the more traditional "co-pollutants" emitted in tandem with GHGs.⁹⁸ However, many argue that these communities have more to gain economically from government-funded investment in infrastructure needed to support an energy transition than from investment indirectly incentivized by a carbon price signal combined with the income distribution possible in a revenue-neutral scenario. While it would be interesting to test these propositions empirically or through modeling, the price of enthusiastic support among organized labor and environmental justice constituencies is likely to be support for the expenditure side of carbon tax revenue allocation.

Current Proposals

Presently in New York, one carbon tax bill has been introduced, and an additional bill is expected shortly as of this writing.⁹⁹ The pending bill, which was first introduced by Assemblymember Cahill and Senator Parker in the previous legislative session in 2015,¹⁰⁰ now numbers 29 sponsors, co-sponsors, and multi-sponsors.¹⁰¹ It would establish an immediate carbon tax of \$35 per ton, rising by \$15-per-ton increments until reaching \$185 per ton after 10 years. The bill attempts to straddle differences over how to allocate revenue by dedicating 60% of its proceeds to revenue-neutral purposes in the form of tax credits to the low- and moderate-income residents, while directing 40% of the proceeds to investments in climate change adaptation measures, as well as mass transit and other just transition measures. The bill in its current form therefore addresses some but not all of the concerns raised in this article. Some of the key features discussed that are lacking include a rebate or dividend mechanism that would capture nonfilers or those whose income tax liability is too small to offset their carbon burden; an offset geared toward manufacturers or farmers whose products may be subject to close price competition; a mechanism to tax imported electricity; an exemption for imported fuels or electricity already taxed; a feature to extend the tax to regional neighboring states; and a coefficient to capture fugitive methane emissions released during the life cycle of natural gas production. These features all can be addressed in negotiations as the bill advances. Indeed, one advantage of

⁹⁵ These businesses have increasing economic weight in New York and elsewhere. See, e.g., Natasha Geiling, *Clean Energy Employs More People than Fossil Fuels in Nearly Every U.S. State*, THINKPROGRESS (Mar. 27, 2017, 3:28 PM), <https://thinkprogress.org/clean-energy-more-jobs-than-fossil-fuels-32f615915399/>; Dana Varinsky, *Solar-Energy Jobs Are Growing 12 Times as Fast as the US Economy*, BUS. INSIDER (Jan. 26, 2017, 12:06 PM), <http://www.businessinsider.com/solar-energy-job-growth-2017-1>.

⁹⁶ NYISO REPORT, *supra* note 12, at 2–3; WEISS ET AL., *supra* note 61.

⁹⁷ While manufacturing constitutes a much smaller share of New York's economy than it did 60 years ago, many of the jobs that remain are relatively high-paying, are often unionized, and represent economic anchors for many upstate communities. OFFICE OF THE STATE COMPTROLLER, *THE CHANGING MANUFACTURING SECTOR IN UPSTATE NEW YORK: OPPORTUNITIES FOR GROWTH* (June 2010), <https://www.osc.state.ny.us/localgov/pubs/research/manufacturingreport.pdf> (manufacturing still major force in upstate labor market, accounting for 20% of private-sector wages).

⁹⁸ See *supra* notes 42–43 and accompanying text.

⁹⁹ The NY Renew's proposal is anticipated to direct 70% of carbon tax revenue to spending, and the other 30% to offsetting regressivity at the low end of the income spectrum. The initial rate of the proposed tax is expected to be \$35 per ton, rising by approximately 5% per year, plus inflation, through 2050. NY Renew's, *Climate and Community Investment Act, Draft Policy Outline* (Oct. 2017) (on file with author). The NY Renew's proposed revenue distribution closely tracks the break point where the tax would become regressive. That is, a certain minimum level of refund or other offsets to lower earners is required to avoid regressive effects. Komanoff has calculated that approximately two-thirds of proceeds must be refunded in a per-capita distribution system to offset a carbon tax's regressivity. See Komanoff, *supra* note 72. Thus, if under such a plan more than approximately 33% of revenues were allocated to spending or other purposes, lower earners would be harmed by a carbon tax. If the upper income brackets were excluded from the rebates, and the rebates were concentrated at the lower end of the economic spectrum, then more funds would be available for spending while keeping the lowest earners whole. The NY Renew's bill is expected to cut off rebates at an income level in the moderate income range; in the aggregate, a carbon tax would make earners above that level worse off. The key point here, though, is that if instead of devoting proceeds to spending, the entirety of the proceeds were devoted to rebates, the effect would be more redistributive than what NY Renew's is expected to propose.

A separate calculus applies to the question of whether to distribute rebates universally or to a smaller subset of taxpayers. How one comes out on that question may rest on how one assesses the relative merits of broad political support for an escalating carbon tax versus maximizing redistribution. Famously, the social security system opted for the universal approach, which in retrospect appears to have been effective in consolidating support for the program for over 80 years.

¹⁰⁰ Assembly Bill No. 8372 (introduced Aug. 24, 2015); Senate Bill No. 6037 (introduced Aug. 24, 2015).

¹⁰¹ Assembly Bill No. 107 (prefiled Jan. 4, 2017; sponsored by Assemblymember Cahill; 17 co-sponsors and four multi-sponsors); Senate Bill No. 2846 (introduced Jan. 17, 2017; sponsored by Senator Parker; six co-sponsors).

proceeding legislatively, as New York must, as opposed to in the form of a referendum, as was recently attempted in Washington State, is that changes and compromises can be negotiated up until adoption, whereas the text of a referendum is set months in advance of the voting.

Summary

The foregoing considerations suggest some elements that can fairly be considered settled as to what should be included in carbon tax. Other considerations are more appropriately the subject of continued discussion among stakeholders; compromises will surely have to be made.

As set forth above, any carbon tax proposal in New York should contain the following elements:

- A robust and transparent price signal escalating over time.
- Protective features to avoid regressivity.
- Scope of covered emissions broad enough to include not only carbon dioxide, but all the principal GHGs, especially fugitive methane, taxed at their carbon dioxide equivalent (CO₂e) value.
- Coverage of the electric sector, including imported electricity, either in conjunction with a NYISO carbon-pricing plan, or through direct coverage under the tax.
- An exemption or offset for imported carbon already taxed to encourage adoption of carbon taxes by other states.
- Consideration of potential efficiency gains by swapping the proceeds of carbon tax revenues for reduction of activity-inhibiting taxes. This is an especially relevant consideration in New York, considering its existing high taxation profile. For purposes of social equity, such reductions should be targeted to existing taxes disproportionately falling on lower-income populations, such as payroll, low-bracket income taxes, and/or sales taxes.
- Include a special case tax reduction for selected current state taxes imposed on manufacturing and agriculture.
- Consider a dedication of some of the proceeds to funding carbon-negative technologies, based on tons of CO₂e extracted. Especially in early years, this would be a negligible commitment of funds. If carbon extraction technologies grow significantly, adjustments could then be made, if necessary.

- In general, favor revenue neutrality over expenditures in light of the persuasive case that revenue-neutral allocations, in the form of dividends or, potentially, carefully selected tax offsets, can be more redistributive than spending measures. Recognize that while this may be an ideal position on the merits, further political accommodation may be needed.
- Consider developing a separate revenue stream dedicated to just transition and adaptation measures, perhaps analogous to the former Superfund “polluter pays” tax, such as a special levy on the fossil fuel industry or via a settlement trust funded with the proceeds from pending investor fraud lawsuits against fossil fuel companies initiated by attorneys general in New York and other states.¹⁰²

Conclusion and Next Steps

With federal action on climate, at least for the time being, going in reverse, there is more impetus and need than ever for states to take the lead, as many have observed. Putting a price on carbon to reflect the externality cost of GHGs is generally agreed to be the single most effective measure that can be taken to reduce GHG emissions on an economy-wide basis, and is synergistic with other, more narrow policies intended to reduce GHG emissions (e.g., vehicle fuel economy standards or renewable energy tax incentives). Depressing GHG emissions will also realize health benefits by reducing emissions of co-pollutants along for the ride with GHG emissions.¹⁰³ In addition to the environmental benefits, which are the core purpose of carbon pricing, imposing a carbon tax, according to several studies and limited real-life experience, has been found to yield economic benefits to the jurisdiction imposing the tax, especially where the jurisdiction is a net importer of fossil fuels. A carbon tax can and should be structured progressively to avoid regressive features that would characterize a carbon tax unadorned by revenue-return features.

In addition to these straightforward policy benefits, carbon taxation, in its revenue-neutral variants, unavoidably introduces rising themes in current thinking on economic and fiscal policy, including basic minimum or universal income and repositioning of the tax base, and offers the potential to create a market in the development of carbon-negative technologies and other industries of the future.

Let’s face it: New York is already a notoriously high tax state. Looked at one way, already-high taxes pose a significant hurdle to proposing a new one. On the other hand, a carbon tax offers New York an opportunity to start to rethink its fiscal structure. Adopting a revenue-neutral state-level carbon tax has the potential to usher

¹⁰² Press Release, Attorney Gen. Eric T. Schneiderman, A.G. Schneiderman, Former Vice President Al Gore and a Coalition of Attorneys General from Across the Country Announce Historic State-Based Effort to Combat Climate Change (Mar. 29, 2016), <https://ag.ny.gov/press-release/ag-schneiderman-former-vice-president-al-gore-and-coalition-attorneys-general-across>. Such a use would be consistent with the use of funds derived from tobacco lawsuits to fund other state purposes such as education. Press Release, Attorney Gen. Eric T. Schneiderman, A.G. Schneiderman Announces \$550 Million Settlement with Big Tobacco that Ensures Billions in Future Compensation to New York State, Counties, and NYC Arising Out of Landmark 1998 Agreement (Oct. 20, 2015), <https://ag.ny.gov/press-release/ag-schneiderman-announces-550-million-settlement-big-tobacco-ensures-billions-future>.

¹⁰³ See *supra* notes 42–43 and accompanying text.

New York to the forefront of creative fiscal policy, economic change, and innovation, as well as environmental policy. Revenue-neutral or not, however, the key imperative is to impose a price signal that can drive systemic reduction of GHG emissions.

Perhaps most important of all, adoption of a carbon tax by New York—because of its prominent profile both nationally and globally—would offer a hopeful example of progress at a time when the federal government has abandoned its leadership role on climate policy. New York’s executive leadership and lawmakers should initiate discussion with nearby states about a regional carbon tax. As part of this effort, New York—along with neighboring states, if possible—should commission a study to examine the environmental and economic impacts of a regionally imposed carbon tax, and thereafter promptly enact legislation to bring the tax into effect. If successful, New York’s example could be expected to be emulated and give strength to carbon taxing efforts beyond the region. The spread of carbon taxes would in turn both benefit the climate and level the playing field for early-adopter carbon-taxing states.

Andrew Ratzkin (andrew.ratzkin@gmail.com) is an environmental and energy-sector lawyer.

LEGAL DEVELOPMENTS

ASBESTOS

Second Circuit Affirmed Remand of Asbestos Action

In a summary order, the Second Circuit Court of Appeals affirmed the remand of an asbestos personal injury action to New York state court. The defendant had removed the case pursuant to the federal officer removal statute. The Second Circuit noted that the plaintiffs had abandoned all claims arising from asbestos exposure at a government facility, eliminating claims against which a government-contractor defense could be asserted, and rejected the defendant’s argument that claims giving rise to original jurisdiction in federal court must be formally dismissed for a properly removed case to be remanded. The Second Circuit also rejected the argument that the federal court should have retained jurisdiction on the basis of diversity of citizenship. The Second Circuit said the defendant could only sustain removal based on diversity where diversity existed both when the case was filed and when it was removed. The court indicated that in this case there was no dispute that there was not complete diversity at the time of filing. *Chapman v. Crane Co.*, 2017 U.S. App. LEXIS 9732 (2d Cir. May 31, 2017).

Appellate Division Affirmed Ruling That Merchant Mariner’s Release of Asbestos Claims Was Unenforceable

The Appellate Division, First Department, ruled that a release executed in 1997 by a plaintiff’s decedent did not bar the plaintiff

from bringing a personal injury action in 2015 alleging that exposure to asbestos-containing products manufactured by the defendant’s predecessor in interest caused the decedent’s mesothelioma. The decedent gave the release in connection with an earlier federal lawsuit also alleging exposure to asbestos. The release provided that the decedent gave up the right to bring future actions for “any new or different diagnosis that may be made” as a result of exposure. The First Department found that the defendant had not met its burden of proving that the release was enforceable under the Federal Employers’ Liability Act (FELA), which requires strict scrutiny of releases. FELA applied because the alleged exposure took place while the decedent served in the Merchant Marine; the Jones Act provides merchant mariners with a right of action for injuries arising out of performance of their duties and incorporates FELA by reference. The First Department considered the context in which the decedent executed the release and determined that it was impossible to conclude that he had actually received a diagnosis at that time. Given the lack of evidence that the decedent knew of actual risks to which he was exposed, the court found that the release was unenforceable. Justice Tom dissented, writing that the release was enforceable because it was properly limited to risks known to the parties at the time of execution, including the risk of mesothelioma. *South v. Chevron Corp. (Matter of New York City Asbestos Litigation)*, 153 A.D.3d 461 (1st Dept. 2017).

ENERGY

Appellate Division Upheld Permits for Restarted Power Plant

The Appellate Division, Third Department, affirmed dismissal of proceedings challenging permits granted by the New York State Department of Environmental Conservation (DEC) for operations at a natural gas electric generating station located on the shore of the Hudson River in the Town of Newburgh. The station was forced offline by a storm that flooded the station in October 2012 during a time in which the station’s then-owner had filed for bankruptcy and was seeking to sell the station. After the storm, the owner sought authorization to sell the station to a bidder that intended to demolish it. That sale was not consummated, and the station was eventually sold to the respondent, which obtained authorization to resume operations. The Third Department found that DEC was not required to hold a public adjudicatory hearing prior to issuing final updated Title V and State Pollutant Discharge Elimination System permits for the station. On the merits, the Third Department concluded that DEC had a rational basis for its determination that a “mixing zone” where discharges of warm water from the station would cause surface water temperatures near the discharge point to occasionally exceed the regulatory maximum complied with DEC regulations. With respect to the Title V permit, the Third Department was not convinced by the petitioner’s argument that the permitting process required new source review because it involved reactivation of a permanently shut-down facility. The