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# CARBON TAX: READY FOR PRIME TIME?

by Michael J. Zimmer\*

## INTRODUCTION

The international debate over reducing worldwide carbon emissions increasingly focuses on effectively reducing carbon emissions by formulating novel policy tools after the Kyoto Protocol expires in 2012. One recommendation posits that if a tax is levied on carbon emissions it would promote environmentally-minded business decisions, encourage incremental investment in new clean technology, attract the necessary level of capital formation in impacted sectors, and achieve national and global environmental goals. Yet, to effectively reduce carbon emissions, businesses and individuals will have to adopt significant lifestyle and behavioral changes and endorse choices with dramatic economic consequences. Rather than dwelling on the immediate impacts on business and household budgets, all users of energy must eventually confront and assume responsibility for reducing the economic and environmental consequences of carbon emissions. Once governed under the law of “commons,” carbon will now become governed by the laws of science, physics, and economics in global markets. To this end, the most effective plan will ensure that all sources of carbon are meaningfully addressed.

If economic markets were forced to integrate the cost of environmental externalities caused by carbon emissions into the costs of doing business, the ensuing price signals and economic incentives would force a dramatic shift toward developing cleaner energy sources and more sustainable energy habits. Economic consequences will likely be imposed on the industries that created carbon emissions if there is any hope of effectively reversing the legacy of environmental damage. This Article argues that implementing a tax on carbon dioxide (“CO<sub>2</sub>”) imposes economic accountability and would impact the use of precious resources in a more direct, transparent, and sustainable manner than any proposed cap-and-trade program. The critical issue is managing the perceived political consequences of exercising such policy choices.

A carbon tax would directly influence both industry and individual behavior with transparency, fairness, speed, and balance. Industry would have an economic incentive to reduce their carbon emissions to avoid the tax, which would likely be a cost passed on to consumers, and thus, the price signals created would modify consumer behavior. Accurate price signals for carbon (with diminished volatility) will also direct the marketplace so that clean renewable sources of power, energy efficiency, demand-side management, and combined heat and power technologies enjoy a level playing field with the CO<sub>2</sub>-producing conventional fossil fuel generation resources. A cap-and-trade system will reward traders, commodities merchants,

and financial institutions. An astute use of the federal tax system can build companies, development of equipment and technology, and ensure that physical investments are made in sustainable business models.

But the question remains whether the carbon tax is ready for widespread application in light of the clear impediments to, and uncertainty about, a cap-and-trade system. Currently, carbon trading cannot establish with reasonable accuracy how much carbon is being bought and sold over a period of time. The product is not physical, it is not readily usable, and the purchaser faces limited utility after the purchase is consummated. It is also subject to a level of reliance on fiduciary conduct that has been compromised in past decades and is not fully embedded in all global financial and legal systems. Industry self-reporting will remain an essential component to any new CO<sub>2</sub> emissions-control system, but the most effective policies will institute a further measure of verification and transparency. No technology can confirm and validate such continuous emissions monitoring for new CO<sub>2</sub> products in support of a cap-and-trade system.

## CARBON TAX BASICS

A “carbon tax” is a tax on the carbon content of fuels; effectively, it is a tax on the CO<sub>2</sub> emissions produced from burning fossil fuels.<sup>1</sup> The current prices of gasoline, electricity, oil, coal, and other fuels do not include the full economic costs of the health, resource, and environmental externalities associated with the broad usage of these energy sources in the United States and around the world. The failure to force industry and consumers to shoulder these externalities suppresses the economic incentive to develop and implement carbon-reducing measures like energy efficiency, renewable energy, advanced metering, storage, additional transmission, or clean technology. On the other hand, taxing fuels based on their carbon content infuses these incentives at every point in the chain of production and consumption, from an individual’s choice of the type and usage of vehicles, appliances, and housing, to business choices of product design, capital investment, facilities location, and government’s choices when setting regulatory policy direction.<sup>2</sup>

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## TAX VS. CAP-AND-TRADE

Regardless of whether creating a price for carbon emissions takes the form of a tax or tradable emissions allowances, the cost of carbon emissions will be passed through to the ultimate consumers. This fundamental market result occurs while ninety-eight percent of United Kingdom (“U.K.”) businesses recognize it is important to reduce the environmental impact of industry.<sup>3</sup> Over fifty percent of U.K. companies today are struggling with long-term strategic and business modeling decisions in the face of the current unstable policy and tax environment.<sup>4</sup> Interestingly, after global cap-and-trade emissions trading experience, almost sixty-six percent of U.K. companies welcome the use of the tax system to provide incentives for them to become carbon neutral.<sup>5</sup> Only the public policy processes fail to recognize this current market-based distinction in managing what has been characterized as one of the greatest market failures in the world today—that failure to clearly account for the externalities of fossil fuel use.

### PRICE PREDICTABILITY

A carbon tax sets a market clearing price that encourages predictable energy prices. Predictability is important because when future energy and power prices can be reliably calculated in advance, energy-critical decisions can be made with the full awareness of carbon price signals. Once these price signals are added to the costs that industry must factor into the cost of doing business, they can affect plant and building design considerations, new clean technology development, electricity storage and deployment for industry, and appliance selection and the purchase of the family car for the individual.<sup>6</sup>

The United States has had tradable permits for sulfur dioxide (“SO<sub>2</sub>”) since the enactment of the Clean Air Act Amendments of 1990. In that period, the tradable permits have varied in price by over forty percent.<sup>7</sup> Yet due to carbon’s higher relative market penetration within the United States and global economy, compared to that of SO<sub>2</sub>, similar price fluctuations would likely affect all aspects of the U.S. economy, including consumer spending, budgeting, capital expansion, and inflation.<sup>8</sup>

### SIMPLE ADMINISTRATION

The carbon content of every form of fossil fuel is precisely known, as is the amount of CO<sub>2</sub> released when that fuel is burned.<sup>9</sup> This precision presents few technical problems for documentation or measurement. The type of fuel and the amount purchased or used is already tracked by most industrial and private consumers. Thus, instituting a carbon tax would require few, if any, additional reporting or accounting burdens, while enjoying clarity and transparency.

In addition, administering the carbon tax could utilize current tax collection mechanisms and existing enforcement, compliance, reporting, and administrative resources. In contrast, the cap-and-trade approach embraced by the financial industry envisions creating a complex new system for compliance reporting, audits, and verification with an uncertain value proposition in return. Without developing rigorous new accounting and verification mechanisms, such a system is unworkable and will be highly volatile and subject to gaming, thereby undermining confidence and certainty in planning the outcome. A carbon tax is much more feasible than

a cap-and-trade system, except for the threat of its dire political consequences.

### TIMING

A carbon tax can be implemented much more quickly than a cap-and-trade program. This factor is critical to the effectiveness of any CO<sub>2</sub> emissions reduction policy because time is of the essence from a scientific performance basis.<sup>10</sup> So far, cap-and-trade has proven to be unsuccessful in reducing carbon emissions in the European Union and other global markets.<sup>11</sup> Although a cap-and-trade system has been extremely successful in the United States for reducing SO<sub>2</sub> emissions in the past decade, the SO<sub>2</sub> model is not dispositive for carbon. A carbon cap-and-trade program will have to be designed one hundred times larger in scale than its SO<sub>2</sub> counterpart, which creates an enormous problem of scale, complexity, administration, and cost of compliance for cross-border purposes. In a comparable example, the success of the U.S. acid rain program required solid data collection and transparent verification combined with the use of continuous emissions monitoring technology. Readily available technology does not currently exist for filtering or capturing CO<sub>2</sub>. Carbon storage or sequestration will likely take another decade to become cost effective and will create operational de-rating of ten to thirty percent, water supply demands, fuels shifting, and higher operating costs to succeed.

Cap-and-trade systems are also complex and difficult to design. Issues concerning the proper level of the cap, timing, allowance allocations, pre-emption, certification procedures, standards for use of offsets, penalties and regional conflicts must all be addressed before the system can be implemented.<sup>12</sup> These issues require complex operational and political considerations that surely would hinder any timely solution to regulating U.S. CO<sub>2</sub> emissions. Further, while this design and implementation process is taking place, polluters are free to continue unchecked while uncertainty reigns for another decade. A cap-and-trade approach for CO<sub>2</sub> will not be as effective as a carbon tax in the

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short term because it will lag behind the needs of the marketplace, scientific inquiry, and global policy making. It would not offer transparency, nor a clear stable price signal to support capital investment and new investment decision-making until 2020.

#### LESS FRAUD AND MANIPULATION

The protracted negotiations necessary to develop a comprehensive and politically acceptable carbon cap-and-trade program leave the process vulnerable to parties shaping the program to maximize narrow economic benefits, maximizing their market positions in industry sectors, or constraining competition rather than designing an economically efficient system that maximizes public gain and a competitive U.S. economy. In a cap-and-trade program, although market prices will increase, just as with a carbon tax, the reasons for the increase are hidden in a maze of new bureaucracy, regulatory impositions, and cost partnerships that render it more opaque and politically attractive.

A carbon tax can be implemented with far less opportunity for manipulation. Carbon taxes are transparent and easily understandable by the public. Once the market targets for carbon are set, they can be readily adjusted according to market success or failure. However, it is this transparency and flexibility that makes a carbon tax politically undesirable because it is clear where and how society will have to take responsibility, make direct changes and improvements, and pay for the CO<sub>2</sub> by-products of society.

#### CAP-AND-TRADE IS A TAX IN ANOTHER FORM

The key attribute of cap-and-trade that has made it so popular is that future emission targets for reductions are fixed and known. This is mostly propaganda, however, because most cap-and-trade systems under development include a “safety-valve” provision. This safety valve would counter the operations of markets and provide for the auctioning of additional allowances if the price exceeds a certain predetermined value.<sup>13</sup> In addition, the knowledge of the future trajectory of carbon emissions is questionably valuable because there is no agreed-upon trajectory for achieving climate stability and preventing disaster.<sup>14</sup>

Cap-and-trade programs have traditionally provided initial allowances for free. Freely giving away financial assets prevents the government from reducing the economic costs of carbon control by cutting taxes elsewhere, or by providing rebates to protected classes of consumers. Certain industries capitalize upon the economic benefit and prioritize the costs in products regarding services, which flow generally to utilities and traditional energy providers. Costs are passed through twice to consumers; this was the case in European electricity markets following the European Emissions Trading System. While the newer proposed cap-and-trade programs include a government auction of permits to generate revenue and emulate the advantage of a carbon

tax,<sup>15</sup> I argue it is more effective to skip the middleman with its administrative costs and complexity, verification problems, and lack of transparency in favor of a clear tax. To succeed, the carbon tax would need to be coupled with other tax offsets in the tax code to be revenue neutral, and be managed in trust to avoid profligate political expenditures.

#### ECONOMIC EFFICIENCY

Setting a clearing price for carbon that can be periodically evaluated for its effectiveness in achieving public policy and market performance objectives is a simpler and more economically efficient approach than a cap-and-trade program. The cost of carbon can be set through a tax mechanism, and its progress in reducing energy intensity can be evaluated every five years. This built-in evaluation process permits adjustments to be made, which will ensure achievement of emission reduction goals. Technical inputs can be provided by DOE,

EPA, NOAA, and the National Academy of Science each cycle for review with final economic evaluations of the tax conducted by Treasury and the Federal Reserve.

In the United States, potential economic harm could be diminished by offsetting the revenue resulting from a new carbon tax upon its enactment, with mirroring reductions in the payroll tax, the corporate tax rate, and the alternative minimum tax. Additional revenue can be reserved in trust for government funding of clean energy technology and advanced energy R&D. Economic feedback would be provided with balance to benefit the corporate, small business, and individual tax payers to reduce the economic burden of the new carbon tax scheme by starting with a tax that is “revenue neutral.” The key effectiveness of a carbon tax program that is currently being overlooked is that such a tax may become revenue neutral. Revenue neutrality shifts the economic burden to industries requiring behavioral and competitive modification consistent with global policy shifts while preserving efficiency, energy intensity, and benefits of stability in the U.S. economy. No cap-and-trade proposal offers similar revenue neutrality and the specter of economic stability. Rather, cap-and-trade arguably creates some market winners, many market or industry sector losers, opportunities for gaming, and makes U.S. consumers the biggest losers of all.

#### ISSUES IN DESIGNING THE CARBON TAX

None of the current carbon tax discussions are ready for implementation yet for several reasons:

##### 1. LACK OF ADEQUATE ENFORCEMENT AND STRATEGY FOR TAX

Additional tax and energy specialists would need to be shifted from the U.S. DOE and EPA to the U.S. Treasury Department. Initially, additional staffing would be required for

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the additional rulemaking, audits, enforcement, and advisory work. Tax treaties and the World Trade Organization are in place to administer international consequences. Within a decade, administrative precedents could be established, and staffing management would likely decline as the tax system is largely self-implementing thereafter.

## 2. ABILITY TO RATCHET

The whole reason for implementing a tax for carbon is to harness economic power to quickly attack a serious environmental problem. The goal is to create a market for reducing greenhouse gas emissions in order to avoid the extraordinary costs of climate change-induced adaptation. To ensure that emissions reductions are actually occurring, rather than simply permitting people to pay more in order to emit much like they are paying more to continue to drive, a ratcheting mechanism can be studied. The ratchet would periodically increase the tax rate depending on the emission reductions achieved, evaluated every five years through the processes shared above. This will provide a consistent price signal to encourage development of less carbon-intensive technologies, accelerate clean technology deployment and planning certainty, and stimulate a societal behavioral shift toward sustainable business and commercial practices to maintain U.S. competitiveness.

This ratcheting plan was introduced to the House of Representatives in April 2007 when Representative Stark (D-CA) introduced a bill to amend the Internal Revenue Code of 1986 to impose a tax on fossil fuels based on their carbon content.<sup>16</sup> This structure could be adapted to begin at \$10 per ton of carbon content and increased by \$10 per ton every five years until the United States reaches an annual emissions level that does not exceed a specified level of CO<sub>2</sub> emissions. This structure would reward early company actions and establish an economic benchmark, while recording market reaction and response and managing price volatility.

## 3. NOT AS WORKABLE FOR TRANSPORTATION AND COMMERCIAL BUILDINGS

The cap-and-trade system or carbon tax may not impact the transportation and commercial building sectors as effectively as the electric power production sector. More focus is provided on stationary sources through cap-and-trade while mobile and building sources are ignored. The new fuel efficiency standards for passenger and non-passenger vehicles, however, will create a more direct impact on the transportation sector. In addition, green buildings could benefit from a required market evaluation of energy efficiency improvements in building appraisals upon sale or resale. Moreover, a cost of capital, insurance reductions and resale valuation “adders” from LEED certified new or existing buildings could be implemented with clearer market signals. Federal tax credits, accelerated depreciation, state building codes, and state tax incentives could round out this market for construction where substantial CO<sub>2</sub> savings are possible through funding with carbon tax revenues. The new recognition of forestry and agricultural impacts might also favor a tax solution to cut back administrative costs in these important carbon markets.

## 4. REQUIRES AN OVERHAUL OF ENERGY AND ENVIRONMENTAL TAXES IN THE TAX CODE

Consistent with the enactment of a new carbon tax, existing tax provisions in the Internal Revenue Code would require review for consistency and “deadwood” overhaul. Legacy decisions of the past are not the building blocks of our national future. The outdated or inconsistent provisions in the tax code must be removed as part of a carbon tax enactment. A tax or fee could be levied on CO<sub>2</sub> emissions, which would establish the costs of such emissions with clarity. The market can then establish the emission level and degree of market penetration in a revenue neutral environment engaging in classic tax planning and capital investment in carbon tax avoidance strategies. This fosters a more productive market transaction than the artificial cap-and-trade scheme with uncertain prices, little transparency, additionality and verification concerns—with no corresponding guarantees of similar levels of capital support for investment in physical assets to reduce carbon.

## 5. PROBLEMS WITH SOCIAL STEWARDSHIP

The neediest citizens of our country need a set-aside of funds from any new tax revenues. This set-aside should be split between improving multi-family housing stock upon audit and Low Income Housing Energy Assistance Program fuel assistance, and affordable housing incentives, structures and support administered through state, county, and city governments and foundations. A cap-and-trade system offers no contribution to our obligations for social stewardship.

## 6. WATER IMPACT ANALYSIS

No carbon strategy should be considered credible without analyzing the water impact of the technology choices and strategies for the future. Specifically, the analysis should include the technology’s impact on water resources, water availability, and sustainability for CO<sub>2</sub> purposes administered through EPA and the Army Corps of Engineers.

## CONCLUSION

A fair assessment of these strategy alternatives and implementation consequences is critical because the national choices we make in managing carbon will become the foundation of the next environmental initiatives: water management, brown-field restoration, and new patterns of U.S. real estate and community development. The business model, market solution, and strategies for CO<sub>2</sub> will set the stage for the next global trading product—water rights—because of its implications for health, new power generation, food, and weather impacts on famine, economic growth, and power production.

Our future course in managing carbon may be unclear, but the stakes involved in the choice between a new trading system or the tax system are quite high. After watching market based responses artificially built around trading and financial risk management from savings and loans, dot-coms, electric power marketing, natural gas marketing, agricultural commodities, and sub-prime mortgage lending, a fresh innovative approach built around the federal tax system could become a powerful tool of

market-based action across stationary, mobile, and building emission sources. This true market-based approach also ensures that physical investment will match with financial risk management strategies to diminish volatility and achieve the desired result. Other financial derivatives wrapped around trading schemes do not provide that comfort, and limit the return and benefits to narrow sectors of society and create distortions in markets.

The consequences of a developed and imposed carbon tax should be consistently offset against other less desirable business and individual taxes striving for revenue neutrality. The revenues should never be converted into sources of new funding for grand social programs or legislative earmarks that benefit political elites, instead of benefiting true markets, U.S. companies, industries, and the underlying public policy objectives of the carbon tax operating in a global economy. Carbon can become a driver for innovation and job creation and technology advancement in the 21st century as opposed to being a mere externality. Success will depend upon the choices we make managing the laws of science, economics, and politics with balance and true protection of U.S. markets and industry. In addressing honestly the greatest market failure of the 20th century, we can create an economic renaissance built on sustainable and sound technology and business practices.



## Endnotes: Carbon Tax

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<sup>1</sup> See Introduction, Carbon Tax Center website, <http://www.carbontax.org/introduction/#what> (last visited Mar. 4, 2008) [hereinafter Carbon Tax Center Introduction].

<sup>2</sup> Carbon Tax Center Introduction, *id.*

<sup>3</sup> PRICEWATERHOUSECOOPERS, SAVING THE PLANET – CAN TAX AND REGULATION HELP? 11 (July 2007), available at [http://www.pwc.co.uk/pdf/saving\\_the\\_planet.pdf](http://www.pwc.co.uk/pdf/saving_the_planet.pdf) (last visited Mar. 4, 2008).

<sup>4</sup> PRICEWATERHOUSECOOPERS, *id.* at 16.

<sup>5</sup> PRICEWATERHOUSECOOPERS, *id.* at 29.

<sup>6</sup> Tax vs. Cap-and-Trade, Carbon Tax Center website, <http://www.carbontax.org/issues/carbon-taxes-vs-cap-and-trade> (last visited Mar. 4, 2008) [hereinafter Tax vs. Cap-and-Trade].

<sup>7</sup> *Doffing the Cap*, ECONOMIST, June 14, 2007, available at [http://www.economist.com/finance/displaystory.cfm?story\\_id=9337630](http://www.economist.com/finance/displaystory.cfm?story_id=9337630) (last visited Mar. 4, 2008).

<sup>8</sup> *Doffing the Cap*, *id.*

<sup>9</sup> Carbon Tax Center Introduction, *supra* note 1.

<sup>10</sup> INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: SYNTHESIS REPORT SUMMARY FOR POLICY MAKERS 20 (2007), available at [http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4\\_syr\\_spm.pdf](http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr_spm.pdf) (last visited Mar. 4, 2008).

<sup>11</sup> Clare Davidson, *Carbon Trading's Real Colours*, BBC NEWS, May 16, 2006, available at <http://news.bbc.co.uk/2/hi/business/4985332.stm> (last visited Mar. 4, 2008).

<sup>12</sup> Tax vs. Cap-and-Trade, *supra* note 6.

<sup>13</sup> Tax vs. Cap-and-Trade, *id.*

<sup>14</sup> Tax vs. Cap-and-Trade, *id.*

<sup>15</sup> *Doffing the Cap*, *supra* note 7.

<sup>16</sup> Save Our Climate Act of 2007, H.R. 2069, 110th Cong. (2007).