

Cap and Trade versus a Carbon Tax

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Executive Summary

This research paper focuses on the arguments between cap and trade versus a carbon tax. A literature survey of over fifty news and web articles, and opinion pieces were used. This issue is fast changing in public policy as a cap and trade system has gained political ground. A carbon tax would be much more effective in reducing carbon emissions, so we must work now to influence our policy-makers to take this route.

The term “cap and trade” refers to a system that places limits on carbon emissions. If a utility can’t meet the imposed cap on carbon emissions, in the cap and trade system it can purchase additional permits from companies who are operating below the cap. Over time, the carbon cap would be lowered. This is supposed to raise the cost of emitting carbon and thus create an incentive for operating by using renewable power. In a cap and trade system, emission permits could be auctioned off. The revenue from the auctions could be used to give rebates or to reduce other taxes, partially offsetting higher prices. One big argument for the cap and trade system is that it is business-friendly and will produce jobs.

A carbon tax is just what it sounds like—a tax on carbon emissions, which would put an immediate monetary price on carbon dioxide pollution. Characteristics of a carbon can include gradual incremental increases to incentivize greater reduction in emissions, revenue-neutrality, and rebates of revenues to taxpayers.

The public interest does not appear to be served by a cap and trade system for several reasons, which include price volatility, the gaming that would become inherent in the system, and the lack of adequate accountability. Also, as mentioned previously, while a cap and trade system is supposed to be business-friendly, not all businesses are for the idea, and both conservative and liberal economists prefer a carbon tax over a cap and trade system.

The American Clean Energy and Security Act, or more simply, the Waxman-Markey bill, which is legislation for a cap and trade system, is currently working its way through Congress. Given the problematic nature of a cap and trade system versus the simplicity and efficacy of a carbon tax system, supporting a bad bill is worse than scrapping it and starting over because, given how imperative it is we reduce emissions at a steady rate, it is important we start the procedure in the right way. We also need more than just a carbon tax; we also need complementary policies such as a national Energy Efficiency Resource Standard (EERS) and a Renewable Energy Standard (RES) in order to facilitate the kind of real permanent change we need to see.

Cap and Trade versus a Carbon Tax

Introduction

This research paper focuses on the arguments between cap and trade versus a carbon tax. A literature survey of over fifty news and web articles, and opinion pieces were used. The paper begins with an explanation of what cap and trade is, what offsets are, and how a cap and trade auction would work. Then it presents what the arguments are for a cap and trade system, the arguments against, what a carbon tax is, and why it is different from a cap and trade system. It will explore what is in the public interest, and what the rational approach is to the issue of a cap and trade system versus a carbon tax. Then it will present recommendations based on the research. This issue is fast changing in public policy as a cap and trade system has gained political ground. A carbon tax would be much more effective in reducing carbon emissions, so we must work now to influence our policy-makers to take this route.

What is Cap and Trade?

The term “cap and trade” refers to a system that places limits on carbon emissions. It will establish a “commodities market for carbon, in which power providers can buy and sell emission permits” (Ray, 2009, para. 7). If, for some reason, a utility can’t meet the imposed cap on carbon emissions, it can purchase additional permits from companies who are operating below the cap. Over time, the carbon cap would be lowered. This would raise the cost of emitting carbon and thus create an incentive for operating by using renewable power (Ray, 2009, para. 8), and by exploring other clean technologies such as efficiencies.

There are “leaders from several major U.S. businesses and leading environmental groups” who have worked to enact federal legislation that would adopt a cap and trade system (United States Climate Action Partnership, 2009, para. 1). Twenty-six major U.S. corporations

have been involved in the effort. Among them are Duke Energy, and “PepsiCo, Dow, ConocoPhillips, Caterpillar and the ‘Big Three’ automakers” along with six nonprofits, all of whom have made a “cap-and-trade program the cornerstone of their pitch for revitalizing the economy. The coalition called on the incoming president and Congress to pass the legislation that they say is crucial for financing new technologies that, in turn, will generate green jobs (United States Climate Action Partnership, 2009, Madden, 2009, p. 29).

The United States Climate Action Partnership (USCAP) has claimed that “a cap and trade program has had previous success. It was used to help minimize the costs of complying with the Clean Air Act Amendments of 1990 – and dramatically reduced emissions of sulfur dioxide and nitrogen oxide” (United States Climate Action Partnership, 2009, para. 2).

There is a built-in flux in a cap and trade system. According to accountancy professors Elfrink and Ellison (2009) the system would:

...either allow emitters to either reduce pollution and increase profits (or reduce expenses), or continue to pollute at excessive levels and pay a price. In theory, the system is self-balancing, allowing underpolluters to offset excessive polluters so that a set level of emissions is not exceeded. At the center of these schemes are emission allowances (EA). EAs are essentially licenses to emit a specified amount of pollutants over a specific time period. A government entity issues the EAs and limits the authorized permits to match a desired level of emissions. The EAs are given, sold, or auctioned to polluters. On reconciliation days, polluters must possess sufficient EAs to cover their emissions, purchase additional EAs from the marketplace, or pay a fine. Companies with excess EAs can sell or trade their excess credits. The government can reduce the

available EAs over time and thus, gradually reduce the amount of GHG in the atmosphere until the desired level is reached. (Elfrink and Ellison, 2009, p. 30)

In essence, in a cap and trade system, emission allowances become a business commodity.

Makhijani (2007) analyzed the European experience with a carbon cap program. He concluded, “Free emissions allowances to existing users reward inefficiency, create inequities between new and existing users of fuels, and penalize those who have taken early action to reduce emissions (134). He also stated, “Free allowances are relatively ineffective in reducing CO₂ emissions, especially in a context of trying to create a level playing field for new users of fossil fuels” (134).

What are offsets and how would a Cap and Trade auction work?

In a cap and trade system, emission permits could be auctioned off. The “revenue thus raised could be used to give consumers rebates or reduce other taxes, partially offsetting...higher prices (Krugman, 2009, para. 8).

Ray (2009) explained it another way, as he stated, “The emission permits could be auctioned off by the government, and the proceeds used to promote the use of renewable energy or distributed to taxpayers to offset higher energy costs that likely would result under strict emission limits (para. 10). Ray also stated that utilities claim if they have to pay for permits, the cost will be passed on to customers (para. 11). He wrote, “Utilities already know they likely will have to make expensive upgrades to their power plants to comply with the cap. Requiring them to buy the permits as well could drive up the cost of electricity to unreasonable levels” (para. 12).

The issue of price volatility involved in permit auctioning would add complexity to the whole system. Regarding price volatility, Lipow (2009) stated:

Trading is simply another form of carbon pricing. Yes the nominal driver is the cap. But from the point of businesses and consumers, what drives their behavior is how much it costs to buy a permit. Just as a carbon tax can be set too low, even a carbon cap whose ultimate target is stringent can be set with too high an initial ceiling (para. 8).

The concept sets an arena for market forces to flux according to business need.

House Energy and Commerce Committee Chairman Henry Waxman, and co-Chairman Ed Markey have introduced a bill, officially entitled “The American Clean Energy and Security Act,” but as Yale Environment 360 (2009) stated, “most people who follow this issue simply call it Waxman-Markey” as it is named for its sponsors, Rep. Henry Waxman (D-CA) and Ed Markey (D-MA) (para. 1). More will come later on this bill, but regarding offsets, Chipman (2009) stated Waxman is “offering power producers and companies such as steelmakers free pollution permits” (para. 7). The allowances “may be worth as much as \$40 billion a year, according to Mike McKenna, president of MWR Strategies, a policy consulting firm based in Washington (Chipman, 2009, para. 8). Waxman’s bill is a break from “Obama’s proposal to auction off all permits to help pay for a middle-class tax cut and offset higher energy costs for some consumers” (Chipman, 2009, para. 9).

What are the arguments for Cap and Trade?

One big argument for the cap and trade system is that it is business-friendly. Executives from corporations such as Duke Energy Corp., ConocoPhillips and Caterpillar Inc. have met with the White House Chief of Staff Rahm Emanuel, and climate advisor Carol Browner, to discuss what rules they support for capping greenhouse gases (Chipman, 2009, para. 1).

Another proponent is GE CEO Jeffrey Immelt, who, according to Chipman, claimed that the current cap and trade bill being considered will “help the struggling U.S. economy revive

while also cutting global warming pollution, reducing the risk of dangerous climate shifts (2009, para. 16).

A spokeswoman for the Natural Resource Defense Council (NRDC), an environmental group and member of USCAP, argued another positive. “‘It’s a jobs plan,’ said Julia Bovey... ‘Having a clean energy sector that leads the rest of the world is the best shot we have of not having jobs shipped overseas’” (Chipman, 2009, para. 17).

Because of this business-friendly approach, “chances of meaningful action on climate change, probably through a cap-and-trade system on emissions, have risen sharply” (Krugman, 2009, para. 1). Economist Krugman went on to argue, “the costs of an emissions-limitation program would be modest, as long as it’s implemented gradually. And committing ourselves now might actually help the economy recover from its current slump” (Krugman, 2009, para. 4).

The Washington Times writer LoBianco (2009) presented another argument as he stated, “President Obama is banking on \$300 billion to come in by 2022 from a cap-and-trade plan to reduce greenhouse gases, according to a source with knowledge of the president’s proposed budget” (para.1). According to LoBianco, “Mr. Obama expects money from the climate-change proposal to start rolling in by 2012, and that amount would come in over the subsequent 10 years as companies purchase carbon offsets” (2009, para. 2). The prospect of getting 300 billion in revenue for the government might very well guarantee presidential support for some version of the Waxman-Markley bill.

The business-friendly argument is a compelling one that seems to have gained widespread approval. Amisha Patel, who is the policy advocate for climate change and energy issues for the California Chamber of Commerce, has stated, “We believe that market structures

like cap-and-trade are essential for businesses to meet their obligations until green technology comes to market” (*Environmental Health Perspectives*, 2009, p. A103).

Gernot Wagner is an Economist in the Climate and Air Program at the Environmental Defense Fund, and Nathaniel Keohane is Director of Economic Policy and Analysis at the Environmental Defense Fund, which is a nonprofit environmental advocacy group. Wagner and Keohane (2008) take the argument for a cap and trade system to a global scope, as they wrote:

For this reason, a cap-and-trade system could promote broad international participation. Developing countries would almost surely be net sellers in a global carbon market--both because they have ample low-cost abatement opportunities and because they're likely to receive more generous emissions targets than industrialized nations under an international agreement. As a result, emitters in the developing world could expect to earn substantial profits from abating emissions and selling allowances. Meanwhile, because advanced economies such as the United States and EU can set the terms of access to their own markets, they would have considerable leverage to persuade those other countries to take on binding emissions targets. (para. 15)

Their argument remains theoretical, as international cooperation and potential benefit must remain speculative.

The simplest argument might actually be that “perhaps the best reason to adopt a cap-and-trade program is because it isn't called a tax” (Richards, 2008, p. 12), as taxation, by its nature, remains a universally unpopular prospect.

What are the arguments against Cap and Trade?

There are several arguments against a cap and trade plan. Regarding one argument, Lipow (2009) wrote:

The main policy advantage cap-and-traders offer over a carbon tax is certainty. They claim that it is better to fix the ceiling on emissions and let the price vary than to fix the price and hope it produces the reduction you want. However, most cap-and-trade advocates favor an escape clause, a price ceiling which would trigger the issue of more permits, either because they see it as the price you have to pay to get a bill through, or because they honestly favor the policy. In either case, once you have an escape clause, you no longer have the certainty advocates tout so highly. (para. 2)

Politics and business interests factor largely in the weakness in a cap and trade bill.

But not all business concerns are being championed, according to James Duran. In the *Environmental Health Perspectives* (2009), the 12 December 2008 *Los Angeles Times* quoted James Duran, chairman of legislative affairs for the California Hispanic Chambers of Commerce, who called the plan “an economic train wreck waiting to happen” regarding how it will affect small businesses (p. A103).

Continuing with business concerns, Elfrink and Ellison (2009) stated there are “several accounting issues” in current and past use of EAs (page 30). Specific issues are:

- If EAs are recorded as assets, how are they valued and classified?
- How do the EAs and GHG emissions affect the profit and loss statement?
- When and how are liabilities imported?
- When and how are government grants recognized?
- Is revaluation of the related assets and liabilities appropriate?
- How does a participant account for sales of EAs?
- How do cap-and-trade events affect the statement of cash flows? (page 31)

Regarding accountability there appear to be several serious weaknesses. As Elfrink and Ellison stated, “Unfortunately, official guidance on these issues is shallow and underdeveloped, and accounting for EAs in practice lacks consistency” (2009, page 31). The authors argued, “Cap-and-trade systems give rise to numerous other accounting issues...[which] was the major justification given by the HASB for delaying action on this topic in 2007.” Two major issues the authors listed are, first that there are no “formal accounting guidelines,” and second, the “cap-and-trade transactions also need standardization” (page 33)

From the conservative think tank the American Enterprise Institute for Public Policy Research, authors Green, Hayward, and Asset (2007) agreed, as they stated the cap and trade system is “something of a false choice, as such regulation is a deeply troubled policy option. While trading may be superior to command-and-control, it is not necessarily superior to other alternatives, such as carbon-centered tax reform” (p. 2). More on a carbon tax follows in the next section.

The authors argued there are “significant limitations to the applicability of emissions trading for GHG [or greenhouse gas] emissions.” One example of limitations in applicability is there is “significant volatility in emission permit prices” in “SO₂ [sulfur dioxide] abatement through trading.” SO₂ cannot realistically be compared to CO₂, as they are not “comparable targets for emission reduction. Reducing SO₂ emissions did not require any constraint on end-use energy production or consumption. Coal-fired power plants had many low-cost options to reduce SO₂ emissions without reducing electricity production.” The authors went on to point out that “CO₂ is different: it is the product of complete fuel combustion. There is no ‘low-CO₂ coal,’ and the equivalent of SO₂ scrubbers does not yet exist in economical form” (Green, Hayward, and Asset, 2007, page 2).

Regarding the international arena, the authors predicted an entirely different scenario from Wagner and Keohane's:

A cap-and-trade approach to controlling GHG emissions would be highly problematic. A lack of international binding authority would render enforcement nearly impossible, while the incentives for cheating would be extremely high. The upfront costs of creating institutions to administer trading are significant and likely to produce entrenched bureaucracies that clamor for ever-tighter controls on carbon emissions. Permit holders will see value in further tightening of caps, but will resist efforts outside the cap-and-trade system that might devalue their new carbon currency. Higher energy costs resulting from trading would lead to economic slowdown, but as revenues would flow into for-profit coffers (domestically or internationally), revenues would be unavailable for offsetting either the economic slowdown or the impacts of higher energy prices on low-income earners. (Green, Hayward, and Asset, 2007, p. 10)

According to their assessment, they see economic problems stemming from this system just as James Duran did.

Lipow (2009) argued that even with a good cap and trade system, market volatility would come into play. He stated that a good system would have:

...100 percent auctioning of permits—no offsets, no escape clause, expiration dates for permits, and maybe a very low floor. It may auction quarterly, but is unlikely to have restrictions on resale. That means you end up with a lot of volatility and a large carbon trading sector that will join the carbon lobby to try and weaken the first iteration of cap tightening. A good carbon tax will have both scheduled escalation and special escalation when emissions drop more slowly than intended. (Lipow, 2009, para. 15)

According to his assessment, the best cap and trade system is problematic. He went on to assess a “mediocre” cap and trade system which would:

....auction 80 percent or more of permits, allow few offsets, and have lengthy or zero expiration dates for permits. Banking will reduce volatility a little, but at the expense of keeping prices lower on average. Offsets and grandfathered permits will increase volatility much more than banking will reduce it. And the imaginary reductions produced by offsets will both lower permit prices and real emissions reductions. A mediocre carbon tax will only have scheduled escalation, and it will require legislative intervention to raise carbon prices more than that. (Lipow, 2009, para. 16)

In Lipow’s side-by-side assessment with carbon tax, the cap and trade system is shown as unwieldy and unstable, and riddled with political maneuvering.

In concluding this section on the argument against cap and trade, the *Progressive Democrats of America* (2009) have posted on their website a list of issues regarding the system, which would agree with the previously stated arguments. Their list includes: price volatility in cap and trade; the relative length and difficulty in enacting a cap and trade system versus enacting a carbon tax; the complexity of a cap and trade system which would involve networks of traders, lawyers, consultants and transaction costs, and a price signal that is based on a quantity of pollution (para. 6).

What is a Carbon Tax and why is it so different?

A carbon tax is just what it sounds like—a tax on carbon emissions. According to the information posted on the *Progressive Democrats of America* website (2009), there are three characteristics to a carbon tax. The first is the tax itself, which would be levied “at the first point of sale on the carbon content of fuels,” which would put an immediate monetary price on

“carbon dioxide pollution from burning fossil fuels” (para. 1). A carbon tax that has gradual incremental increases would incentivize both industry and consumers to reduce carbon emissions. At the same time the “development, investment and switching to non-fossil fuel energy” would be encouraged (para. 1). According to the *Progressive Democrats of America’s* article, “A carbon tax can enhance U.S. competitiveness by reducing dependence on fossil fuels and improving the economy’s energy efficiency. If accompanied by border tax adjustments, a carbon tax will not disadvantage even energy-intensive U.S. firms and will create incentives for our trading partners to enact their own carbon taxes” (2009, para. 1).

The second characteristic of an effective carbon tax would be revenue neutrality. The tax would need to be large enough:

.... to encourage low-carbon economic decisions over the long term. Because low- and moderate-income households spend a larger fraction of income for energy, a carbon tax has the potential to be regressive. A revenue-neutral carbon tax that returns revenues to the public minimizes regressivity and does not burden the economy with additional taxes. (*Progressive Democrats of America*, 2009, para. 2)

The third characteristic of an effective carbon tax is revenue recycling. The *Progressive Democrats of America* article stated:

Carbon tax revenues can be recycled by regular (e.g., monthly) equal “dividends” to all U.S. residents. Alternatively, they can be dedicated to reducing regressive taxes such as the federal payroll tax, with provision for the unemployed. As carbon-tax rates steadily rise, existing taxes would be phased out. (2009, para. 3)

The concept of a carbon tax thus described would have flexibility while steadily decreasing emissions.

On December of 2008, several environmental groups met in order to discuss a national carbon tax as a viable policy option for addressing climate change. The groups were Environmental and Energy Study Institute (EESI), Carbon Tax Center, Climate Crisis Coalition, Friends Committee on National Legislation and Friends of the Earth. They focused on the different benefits—environmental, economic, economic-efficiency, logistical and political—of a national carbon tax, especially one that is “phased-in and revenue-neutral” (Environmental and Energy Study Institute, 2008, para. 1) The Environmental and Energy Study Institute (2008) posted a website article on the event that stated, “many economists have called for enactment of a carbon tax as the simplest, easiest to administer and most transparent approach to carbon pricing, despite the conventional wisdom that a ‘cap and trade’ regime is key to a political consensus” (para. 1).

According to the Environmental and Energy Study Institute’s article, the speakers at the event came up with a list of carbon tax benefits and characteristics, including a potential redistribution of revenues:

- a carbon tax would impose a per-unit tax on the carbon dioxide in fossil fuels. The revenue generated by the tax would then be applied to a payroll tax rebate and transition assistance for affected industries.
- A carbon tax, in comparison to a cap and trade program, has the benefit of being transparent, efficient, simple, less sensitive to the market and lower in administrative costs. Taxing upstream in production will be easiest to implement, i.e. natural gas processors, petroleum refineries, etc.
- If the revenue from a carbon tax is returned to the public, it could be done via a payroll rebate or a household lump sum, so that the public can decide which clean

technologies they want to invest in, rather than the government. Although a carbon tax would be a regressive tax, an accompanying system that returns revenue to the public could make it a progressive policy.

- Current cap and trade programs in place for greenhouse gases have not always been successful in reducing emissions and have been subject to market volatility.
- Though calls for energy efficiency are important, standards will be difficult to enforce without a price driver such as a carbon tax. (2008, para. 3)

Authors Green, Hayward, and Asset (2007) produced a list of their regarding the “advantages of a revenue-neutral, carbon-centered tax reform” which are as follows:

- Effectiveness and efficiency
- Incentive creation
- Less corruption
- Elimination of superfluous regulations
- Price-stabilization
- Adjustability and certainty
- Preexisting collection mechanisms
- Keeping revenue in-country
- Mitigation of general economic damage (pp 5-7)

As the authors stated later in their article:

A program of carbon-centered tax reform, by contrast, lacks most of the negative attributes of cap-and-trade, and could convey significant benefits unrelated to GHG reductions or avoidance of potential climate harms, making this a no-regrets policy. A tax swap would create economy-wide incentives for energy efficiency and lower carbon

energy, and by raising the price of energy would also reduce energy use. At the same time, revenues generated would allow the mitigation of the economic impact of higher energy prices, both on the general economy and on the lower-income earners who might be disproportionately affected by such a change. Carbon taxes would be more difficult to avoid, and existing institutions quite adept at tax collection could step up immediately. Revenues would remain in-country, removing international incentives for cheating or insincere participation in carbon-reduction programs. Most of these effects would remain beneficial even if science should determine that reducing GHG emissions has only a negligible effect on mitigating global warming. (Green, Hayward, and Asset, 2007, pp. 10-11)

They further explored the potential consequence of a “modest” carbon tax of \$15 per ton of CO₂. This would result in “an 11 percent decline in CO₂ emissions,” (Green, Hayward, and Asset, 2007, pp. 11). It would also raise the usage of non-coal-based energy forms. The price of coal-based energy would be affected which, as the authors stated, “is to be expected in any plan genuinely intended to reduce GHG emissions” (Green, Hayward, and Asset, 2007, pp. 11). Refund mechanisms on tax revenues would be simple to set into place. As the authors wrote, “these tools could significantly reduce the economic costs of the tax and quite possibly provide economic benefits” (Green, Hayward, and Asset, 2007, pp. 11).

Providing an example of a carbon tax bill, Komanoff (2009) wrote on the America’s Energy Security Trust Fund Act of 2009 by Rep. John B. Larson, chair of the House Democratic Caucus and fourth-ranking Democrat in the House of Representatives (para. 1).

Komanoff stated the new bill builds and improves on Rep. Larson’s 2007 bill with these provisions:

- The first-year tax rate is \$15 per ton of carbon dioxide.
 - The rate rises by \$10/ton *per year*.
 - After five years, that increase rate is automatically bumped up to \$15/ton if U.S. emissions stray from an EPA-certified glide path to cut emissions by 80% from 2005 levels in 2050.
 - To protect domestic manufacturers, the bill authorizes the Treasury Department to impose a “carbon equivalency fee” on carbon-intensive products imported from non-carbon-taxing nations.
 - Clean-tech R&D and investments are eligible for \$10 billion a year in tax credits.
 - Impacted workers and industries are eligible for transition assistance of \$7.5 billion in the first year; this is phased out after year 10 but still totals \$41 billion.
 - All other revenue is tax-shifted to Americans via reductions in payroll taxes.
- (paragraph 2)

According to the author, an impressive part of the Larson bill is its “carbon tax *level*”; with an increment rate of either \$10 or \$15 a ton per year — implying annual increases of at least 10 cents per gallon of gasoline and $\frac{3}{4}$ of a cent per kWh for electricity on a national-average basis — producers, consumers and intermediaries will be moved inexorably to lower-carbon investments and choices” (Komanoff, 2009, para. 6).

The carbon tax level, according to Komanoff, is “robust” but what may make it politically feasible is that:

only a small and declining fraction of the revenue is earmarked for new programs. As noted, by the tenth year, 98% of incoming revenue (96% of cumulative) will be recycled to workers and their families. This should be attractive to growth advocates, deficit hawks and advocates for working families. (2009, para. 7)

In a final in-depth listing of the main arguments for a carbon tax, Easterbrook (2009) listed:

- Such a system would be far less complex than any cap-and-trade scheme. The McCain-Lieberman greenhouse gas cap-and-trade proposal, which drew 43 votes in the Senate in 2005, was 491 sections long. And that was just the authorizing legislation, not the tens of thousands of pages of administrative orders required to put the bill into force! The Obama plan is likely to be equally complex by the time it wends its way through Congress.
- Because carbon cap-and-trade systems are inherently super-complex, they are nearly certain to be “gamed”—defeated by gimmicks, litigation, and special-favors lobbying. Lawyers will always think of pretexts faster than regulators can repair flaws in the language of complex regulation. America’s approach to environmental regulation is already too steeped in litigation. A carbon cap-and-trade system would make this problem worse.
- Whatever you tax, you get less of. Today America mainly taxes labor and capital—but we want more of both! We don’t want more carbon, so let’s tax that instead.
- Owing to simplicity, enforcing a broad-based carbon tax is imaginable. Enforcing a broad-based carbon cap-and-trade scheme is hard to imagine.

- If carbon is taxed, individuals—not government—will make the decisions about greenhouse-gas reduction strategies. Individuals have a *much* better track record at economic decision-making than government does.
- Carbon taxes will offer a clear, easy-to-understand profit incentive to those who devise carbon-reduction technology—so inventors and engineers will get to work. Conversely, cap-and-trade programs will offer an incentive to game the system; so pollsters and lobbyists will get to work.
- The only policy failure concern about a carbon tax is that individuals and firms will simply pay the tax rather than reduce emissions. This is possible, but unlikely: experience shows that individuals and firms change behavior to reduce taxation.
(para. 3)

Point five’s subjective statement is from a conservative point of view.

As a final note, perhaps one of the best characteristics of a carbon tax is that any tax worth supporting, according to environmental tax expert Milne (2008), has a “built-in brake. If one gives too many exemptions...there's not much left to tax” (para. 21).

What is in the public interest?

The public interest does not appear to be served by a cap and trade system for several reasons, which include price volatility, the gaming that would become inherent in the system, and the lack of adequate accountability. Also, as mentioned previously, while a cap and trade system is supposed to be business-friendly, not all businesses are for the idea, and both conservative and liberal economists prefer a carbon tax over a cap and trade system.

According to Romell (2009), “Proposed federal efforts to reduce greenhouse gas emissions through "cap-and-trade" programs would raise electricity prices for Wisconsin customers, a group of Midwestern utilities said Wednesday” (para. 1). The group is called Midwest Consumer Utilities, which includes Madison Gas and Electric Co. and the WPPI Energy “which serves 50 customer-owned electric utilities providing power in Wisconsin, Upper Michigan and Iowa” (Romell, 2009, para. 2).

According to one projection, utility rates could “jump by as much as 63% from 2012 to 2030” (Romell, 2009, para. 2). Midwest Consumer Utilities claims that an auction-based cap and trade system would hurt consumers the most, for if emission allowances were sold through auctions, none of the money would be used to reduce utility rates and prices could rise by 19% to 63% from 2012 to 2030 (as quoted by Romell, 2009, para. 6). This kind of increase would mean that Wisconsin customers could be paying as much as \$609 million to \$2.1 billion in 2012 alone, and by 2030 the annual extra costs could total as much as \$5.7 billion.

There is also a certain psychology involved in the different forms of regulation. Under a cap and trade system, “regulated industries can buy and sell what are, in effect, permits to pollute” (Journal of Property Management, 2009, p. 17).

Price volatility is another issue involved in cap and trade mechanisms, while carbon taxes do not contribute to price volatility. Instead they contribute:

...some certainty to energy prices - a \$100 tax on a ton of carbon emissions would raise coal prices an estimated 14.6 percent, for instance - the ETS carbon price fluctuates on average 17 percent each month, according to Robert Shapiro, a former U.S. under secretary of commerce for economic affairs.

"We're looking at very, very volatile energy prices," said Shapiro, who is currently the chairman of Sonecon, an economic advisory firm. "Business leaders need to know energy prices when they decide whether to invest in more energy efficient products." (Block, 2008, para 11-12)

Taking this into account, a cap and trade system would actually hinder energy efficiency efforts, which is the very thing it is supposed to promote.

The public interest appears to be served in several ways by a revenue-neutral, revenue-recycling carbon tax. We would all pay the tax. Utilities would pay it based on their carbon emissions and then they would pass the cost on to consumers. We would all also pay the tax whenever we fill up at the pump, "based on the content of fossil carbon in the fuel" (Schlesinger, 2005, para. 4).

However, we are all going to pay for the utility costs one way or another, whether we are in a cap and trade system or under a carbon tax.

Member of the National Academy of Sciences and dean of the Nicholas School of the Environment and Earth Sciences at Duke University, Schlesinger (2005) lists several advantages to a carbon tax that are not present in a cap and trade system. A carbon tax would:

- provide the maximum incentive for bright engineers to improve the efficiency of fossil fuel use in all sectors of society.
- maximize the potential for important "cross-sector" transfers of efficiency. For instance, if engineers find efficient ways to reduce CO₂ emissions from the power plants that provide our electricity, the utilities' carbon tax savings could be passed along to consumers.

- might make it cheaper to operate an electric car than a gas-powered one. More of us would be motivated to buy electric cars, especially given the price of gasoline these days.
- not necessarily mean a net increase in our cost of living. Carbon tax revenues could be directed to general government expenditures, so that income tax rates could be reduced for all Americans -- or perhaps those at the lower income levels. Importantly, our current income tax structure provides no personal choice to reduce our tax; indeed, the more we earn, the more we pay on April 15. (para. 6-8)

Schlesinger also stated, “A tax on carbon, which would show up in higher costs for electricity or gasoline, would provide an incentive for each of us to use energy more efficiently if we wanted to pay lower taxes” (2005, para. 8).

There is no question that we have to reduce our carbon footprint, and the most viable way to do so is to introduce some kind of carbon pricing system. As University of Chicago professor Weisbach (2008) stated:

If we are to have a carbon pricing system, the critical issues are about designing it to work well--broad coverage, auctions in the case of permits (or no grandfathering of taxes), flexibility, and broad international participation should be the central goals. A tax can achieve these goals more easily than a permit system. (para. 8)

A carbon tax is cleaner, simpler, quicker to implement, would provide easier accountability, would provide real incentives not just to utilities but to the public in general to become more energy efficient, and bears the possibility of a distribution of revenues back to the public.

What are recommendations based on the research?

As mentioned previously, The American Clean Energy and Security Act, or more simply, the Waxman-Markey bill, which is legislation for a cap and trade system, is currently working its

way through Congress. As the *Yale Environment 360* posted on June 18, 2009, “No matter what form it finally takes, the bill is historic. For the first time, the U.S. government would cap and regulate emissions of carbon dioxide” (para. 1).

However, should we be going this course?

According to the *Yale Environment 360* article, eleven people who are prominent in the environmental and energy fields were asked for their views on the legislation, and “a majority of the environmentalists said they supported the bill—despite its many flaws—because it represents the beginning of an effort to rein in greenhouse gas emissions” (2009, para. 1 and para. 4).

Given the problematic nature of a cap and trade system versus the simplicity and efficacy of a carbon tax system, supporting a bad bill is worse than scrapping it and starting over because, given how imperative it is we reduce emissions at a steady rate, it is important we start the procedure in the right way.

Opponents to the Waxman-Markey bill agree. They argue the bill has been “irrevocably compromised” and that it “makes so many concessions to powerful industrial lobbies that it will do little to effectively reduce greenhouse gas emissions” (*Yale Environment 360*, 2009, para. 5). Another powerful criticism is that it would strip the Environmental Protection Agency (EPA) of “its recently acquired ability to administratively regulate CO₂ emissions from coal plants” (*Yale Environment 360*, 2009, para. 5).

According to Phil Radford, Executive Director of Greenpeace USA, the Waxman-Markey bill “falls short” of President Obama’s “vision of clean energy jobs and not letting special interests dominate politics” (*Yale Environment 360*, 2009, para. 9).

Radford stated:

The science is clear: the United States and the developed world must cut emissions 25 to 40 percent below 1990 levels by 2020 to avoid catastrophic climate impacts. This legislation at best provides a 4 to 7 percent cut below 1990 levels in that time frame, and it is likely to get worse in the Senate. While 4 percent is something, it's like building a 4-foot levee in New Orleans as the waters rush in at 40 feet. Here's a sampling of what the bill gives away:

1. The bill would not force polluters to cut their own pollution until more than a decade from now. Instead, they could buy "offsets," paying a farmer who temporarily traps CO₂ in the soil by not tilling it as much, rather than preventing pollution at the smokestack.
2. The Renewable Energy Standard requires less new clean energy than we will have without this bill passing.
3. The bill strips away some of the Clean Air Act authority to reduce coal plant pollution in new plants, as well as the EPA's authority to regulate global warming pollution under the Clean Air Act. (*Yale Environment 360*, 2009, para. 10-13).

The result, according to Radford, is that "coal companies won't need to cut their pollution, and the president will lose the power to regulate coal under the Clean Air Act, which could very likely cut global warming pollution as much as, or more, than this bill" (*Yale Environment 360*, 2009, para. 14).

By this assessment we would be going backward, not forward in cutting emissions. Denis Hayes is the President of the Bulitt Foundation and board chairman of the American Solar

Energy Society, and National Coordinator of the first Earth Day, and he listed his dislikes of the Waxman-Markey bill, as follows:

- It allows 2 billion tons of offsets a year. Trading “permits” is fine; trading “offsets” eventually will shred the law’s effectiveness. Offsets are hard to regulate and the international offset bubble is already growing rapidly.
- The bill’s goal for 2020 — the easiest reductions — is a wimpy 17 percent cut in carbon emissions below 2005 levels, which essentially guarantees that the world will pass some tragic climate tipping points. It gets tougher later, but I don’t care about easily abandoned promises to make really hard cuts by 2050. What matters is what we are willing to do today.
- The bill auctions only 15 percent of the carbon permits for now. It should auction 100 percent. A 100 percent auction would function as an efficient carbon tax, with the tax rate set each year by the market and revenues distributed through open public processes. The bill’s approach represents back-room politics that mostly favor the powerful polluters who have spent a fortune fighting against climate legislation.
- The bill awards 10 times as much money to speculative carbon capture and sequestration projects as to all green jobs training and aid to displaced workers, combined. (*Yale Environment 360*, 2009, para. 20-24)

Despite these serious flaws, Hayes wrote, he would “hold his nose” and vote for the bill because the problems are “huge but discrete, and they can be addressed in the years ahead” (*Yale Environment 360*, 2009, para. 19 and para. 25).

Michael Brune, Executive Director of the Rainforest Action Network, listed further problems in the bill as:

- For starters, it sets the wrong target: Scientists state that an atmospheric concentration of 350 parts per million of CO₂ is the upper limit for a stable climate; this bill aims for 450. Moreover, although the international community is calling for cuts of 25 to 40 percent below 1990 levels by 2020, this bill aims for 4 percent.
- The bill's largest flaw, however, is the inclusion of 2 billion tons of carbon offsets annually. These offsets represent a massive loophole that will allow polluters to meet their carbon reduction obligations by paying someone else not to pollute, rather than reducing their own emissions. Experience shows that as much as two-thirds of the time offsets don't work, particularly under current regulations in the agribusiness and forestry industries. A coal company could "offset" its pollution by paying a logging company to raze a rainforest for a palm plantation in Indonesia — destroying some of the most biodiverse ecosystems on earth, and releasing massive amounts of carbon. To succeed in the fight against climate change, we must reduce emissions from fossil fuels AND stop destroying rainforests. (*Yale Environment 360*, 2009, para. 45-46).

In the end, several of the Waxman-Markey critics, including Brune, conclude it is better to start over and fight for a stronger bill than pass the current, watered-down version. (*Yale Environment 360*, 2009, para. 5 and para. 47).

Starting over and fighting for a stronger bill would keep the concept of a carbon tax alive and viable. According to authors Larson, Hansen, Metcalf, Shapiro, and Hoggan (2008) we

would need to convince the public we need a carbon tax, and to do that, “we should send a clear message that carbon emissions cause climate change, build a coalition of vocal allies to build support, ensure that proceeds are handled clearly and simply, contribute some of the revenue to green energy technology directly, inspire political leadership and implement the new tax during a period where gas prices are low” (p. 2).

We also need more than just a carbon tax; we also need complementary policies such as a national Energy Efficiency Resource Standard (EERS) and a Renewable Energy Standard (RES) in order to facilitate the kind of real permanent change we need to see, as promoted by the American Council for Energy-Efficient Economy (ACEEE) (ACEEE, 2009, p. iii).

Right now, according to Romm, the Waxman-Markey bill is “the only game in town” (*Yale Environment* 360, 2009, para. 18). In that case, it’s time to introduce a new game. We must work to defeat this bad bill and introduce a better one quickly for, as Bales and Duke (2009) stated, “If we do not take action immediately, greenhouse gas abatement costs will rise sharply” (para. 11). There is no more time to prevaricate. We must effect real change and do it now.

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