

**The Case for a Carbon Tax:
Getting Past Our Hang-ups to Effective Climate Policy
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Precis

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The Case for a Carbon Tax sets out ten reasons to favor a carbon tax over the alternative policies of (1) government subsidies, (2) "command-and-control" style environmental regulation under the older parts of the Clean Air Act, and (3) cap-and-trade.

One: "Government is bad at picking winners, and losers are good at picking governments." The source of this famous saying is surprisingly hard to pinpoint. Its relevance to climate policy is hard to miss. When faced with a problem as large and daunting as climate change, there is a temptation to expect too much from governments. We demand that governments actually *solve* the problem, rather than create the conditions under which a solution is found. In an era of endless political campaigns and promises, voters in democratic countries have gotten accustomed to the idea that government should play the role of "fixer." This is mistaken thinking. Innovation in technology to reduce greenhouse gas emissions is going to have to come from the private sector. Above all, innovation requires a *price signal*. The whole point of a price signal is that it does not pick a winner; it lets markets do that. An appropriate price signal on the emissions of greenhouse gases will unleash a competition among innovators to come up with the best and cheapest technologies to reduce emissions.

Two: Economic efficiency. Not only do we want a competition among innovators and entrepreneurs finding ways to reduce emissions, economic efficiency demands that there be a *fair* competition. Without a "fair" competition, it is not assured that the lowest cost reductions will prevail. For example, regulating under the Clean Air Act does not set up a fair competition because in general, the U.S. Environmental Protection Agency has been politically forced to regulate under the Clean Air Act mostly by making industries just *do their best* to reduce pollution. There is nothing fair about letting coal-fired power plants pollute just because they tried their putative "best" to reduce their pollution. For years, the default regulatory option was to require that coal-fired power plants install scrubbers to reduce sulfur dioxide emissions. Alternative means of reducing emissions have

emerged that suggest scrubbers are not particularly cost-effective. Economic efficiency demands that the ultimate arbiter of environmental performance be the market, and not the E.P.A.

Fundamentally, an economy facing 21st century challenges must *sort* industries, top to bottom, by carbon dioxide emissions. A carbon tax does this. Especially in an era of falling natural gas prices, many older, less efficient coal-fired power plants cannot survive a competition in which carbon dioxide emissions are priced. This is precisely the kind of sorting that cannot be done efficiently by the Clean Air Act which, by commanding and controlling, basically asks each industry to try its best, with EPA's lenience and attentiveness doled out in rough proportion to each industry's political power. The simple genius of a carbon tax is that it aggregates disparate pieces of information throughout the economy, transmitting a price signal at every stage in which there is fossil fuel usage, and transmitting it in proportion to the carbon emissions of the production process.

Three: broader incentives to innovate. The Canadian province of British Columbia has in place a carbon tax of \$30 per ton of carbon dioxide. I was a resident of British Columbia during the five-year phase-in period for the B.C. carbon tax. In 2009, with the B.C. carbon tax barely a year old, I undertook a large home renovation to increase living space. What surprised me was that my contractor was very aware of the carbon tax, and was able to tell me in very specific dollar terms what the carbon tax meant for my renovation project. He was thus able to explain how much shorter the payback periods were for energy-efficient options such as high-efficiency furnaces and windows and doors, solar water heating, and combined water and space heating equipment. How did a construction contractor become such an expert on the effects of the carbon tax? He had become an expert on the carbon tax was that he already had clients like me who had inquired and demanded that he do the analysis. This would have been unlikely under other systems with a less clear price signal.

Incentivizing innovation will require a broad price signal that ripples throughout the economy in order to take advantage of as many greenhouse gas reduction opportunities as possible. The strength of a carbon tax is it creates a broad, economy-wide price signal. Greenhouse gas reduction opportunities are diverse, and the only way to tap into all of them is to have a broad price signal. Pricing greenhouse gas emissions into energy prices sends a price signal that ripples throughout the entire economy, scrambling every single business in a search for a lower carbon footprint in the hopes that it can gain a price advantage over competitors.

Furthermore, because of the nature of regulating point sources of emissions, regulation of greenhouse gas emissions under the Clean Air Act can only be applied to a handful of facilities. Although this handful of facilities accounts for most of the greenhouse gas emissions, they are a small fraction of the number of facilities that emit. By regulating under the Clean Air Act, we miss the opportunity to tap into the entrepreneurial energies of that vast majority of emitting facilities.

Four: Deeper and steadier incentives to innovate. Many have already made the argument that command-and-control regulation is inefficient and ineffective. The most fundamental flaw of regulating greenhouse gas emissions command-and-control style under the Clean Air Act is that the price signal favoring low-carbon or non-carbon alternatives is one generated by an administrative process, rather than a market process. I do not revisit those arguments. The economists have won the debate, and almost everyone accepts that a price on carbon dioxide emissions is needed.

While very limited government subsidization of some research and development of renewable and alternative technologies may be warranted. But the most relevant choice is between cap-and-trade and a carbon tax. Cap-and-trade is an instrument whereby an overall limit, or "cap," is set on total national emissions, and emitters can trade amongst themselves in mostly unregulated market transactions to allocate those emissions. Although cap-and-trade and carbon taxes both encourage innovation to reduce emissions, the two are not equal in their ability to induce innovation. There are at least three ways in which a carbon tax will better encourage innovation than a cap-and-trade program. First, a carbon tax introduces a steadier price signal than cap-and-trade. Cap-and-trade sets the quantity of emissions, but lets the price fluctuate according to market demand. Investors interested in lower-carbon or non-carbon alternatives would rather not have price volatility. Second, if a cap-and-trade program is successful in encouraging innovation in greenhouse gas-reducing technologies, the ironic effect is that this innovation will reduce the price of emissions permits and thereby reduce the price incentive to innovate. A carbon tax, by contrast, represents a continuing price signal to find lower-carbon alternatives. Finally, if a cap-and-trade program gives away emissions permits instead of auctioning them – which history suggests politicians would much prefer – then emitters with these free permits will have less incentive to innovate because innovation would reduce the value of those emission permits. The free allocation of allowances creates an asset in the hands of emitters, something that does not happen under a tax regime. The fact that innovation could reduce the value of that asset is a disincentive for those emitters to find cost-saving innovations.

Five: carbon taxes do not subsidize the formation of capital. People seem to think that capital in the form of buildings, facilities, and structures is an unambiguously good thing. Most economists believe that capital accounts for the difference in wealth between developed countries and under-developed countries. But capital has a downside: when we discover that there is something harmful or inefficient about the expensive capital we have acquired, it can be very difficult to get rid of that capital.

The whole problem of climate change should have clued us in to this problem with capital. One reason that addressing climate change is so difficult is because the world has trillions of dollars' worth of coal-fired power plants that cannot be simply unplugged overnight and replaced with other energy sources. How did this happen? The line of thinking that led to the accumulation of excess capital went something like this: cheap electricity is an unambiguously good thing, because it lowers production costs and generally makes life better for the general populace. But cheap electricity requires expensive capital, and so government assistance to help form this capital must be a good thing, too. Coal for electricity generation has thus always been heavily subsidized, enjoying numerous tax benefits. The sale of coal itself can be eligible for taxation at a lower rate or may be deducted from income under a favorable "percentage depletion" method, which allows a deduction that *exceeds* the value of the coal itself. This has all been in the name of cheap electricity, but now we are stuck with all of this capital, and the owners of this capital will vigorously resist change that devalues their capital.

This specious line of thinking continues to haunt energy policy today, as we dream up even more ways to help the "right" technologies flourish, even those that maintain our coal-related physical capital. Unbelievably, the Internal Revenue Code even considers "refined coal" – coal that is treated to have lower emissions – eligible for the renewable energy production tax credit! Only a lawyer could find such an audacious interpretation of "renewable energy" plausible. A carbon tax is the only climate policy that does not subsidize the formation of capital.

Six: Respect for federalism. A carbon tax is the one climate instrument that allows individual states to truly pursue climate policy without interference from the federal government. There was a time when both Congress and a handful of Western states – those that were part of the "Western Climate Initiative" – were pursuing cap-and-trade programs in parallel. Cap-and-trade legislation died on Capitol Hill, and all of the states except California dropped out of the Western

Climate Initiative. But for a time, there was some talk of how the two cap-and-trade programs were going to be reconciled.

Why bother? Why not let states determine for themselves if and how zealously they wish to pursue climate policy? A carbon tax is the one instrument that can be applied at the state or federal level, or at both levels. Furthermore, a properly-designed carbon tax is compatible with other methods of greenhouse gas control.

Seven: Carbon taxes are administratively simpler. We have already dismissed Clean Air Act regulation as poor climate policy. Command-and-control regulation is administratively difficult. It turns out that cap-and-trade is also a headache. Whereas a carbon tax draws on existing tax collection procedures – such as those that already exist at the gasoline pump – cap-and-trade will require the development of a new agency group to monitor emissions permit trades. In the United States, which has already enjoyed, at least by Washington standards, a fairly smooth set-up and execution of the sulfur dioxide cap-and-trade program, the costs of setting up a greenhouse gas cap-and-trade program would be manageable, but non-trivial. A Congressional Budget Office report estimated that a 2007 cap-and-trade bill that passed the Senate Committee on Environment and Public Works would cost about \$1.7 billion from 2009 to 2013 to implement, including the cost of hiring up to 400 new employees. This is not a lot of money for the federal government, but the United States is a wealthy country with an agency with experience in conducting cap-and-trade programs. Not only would some countries find a billion-dollar-plus price tag more challenging, some would find the set-up considerably more complicated. Several cases of online thievery have cast some doubt on the ability of even developed countries to maintain market integrity for emissions permits. By contrast, a carbon tax looks administratively very much like the kinds of sales taxes that even underdeveloped countries are able to implement. A program which has fewer administrative problems can be implemented more quickly, thereby addressing the problem of climate change sooner.

Eight: revenue raising. Even small-government libertarians would have to concede that if the revenues from a carbon tax were truly returned to taxpayers, taxing greenhouse gas emissions is better than taxing labor. In the United States, a carbon tax of \$30 per ton would generate \$145 billion in annual revenue, which could finance a ten percent cut in personal and corporate income taxes, and then some. How does an income tax cut sound to conservatives? Even if this is not pursued, cash-strapped governments at many levels could no doubt usefully restore funding to primary education, health care, policing, infrastructure, and other pressing needs that have been deferred, or redistribute carbon tax revenues

only to the poorest individuals and households, thereby preventing the carbon tax from being regressive.

Nine: international coordination. Almost every international treaty has sought to oblige signatories to abide in a certain common code of behavior. The Kyoto Protocol is an exception. By acknowledging "common but differentiated responsibilities," the Kyoto Protocol sets out a schedule by which developed countries must reduce their emissions but developing countries do not. The hope was that if the developed countries took the first step, developing countries would follow. This hope has failed spectacularly.

The plain reality is that China and India will not, in any time frame that could avoid climate change, consider quantitative limits on emissions as required by the cap-and-trade programs that the Kyoto Protocol seemed to contemplate. China and India are likely to be more open, however, to a global carbon tax. For one thing, governments get to keep the proceeds from a carbon tax, so that it does not smack of an externally imposed mandate that intrudes onto sovereignty. Also, a global carbon tax, insofar as it really looks more like international treaties that have been successfully negotiated in the past – in which signatories all agree to do the same thing – is a policy that is more likely than Kyoto to gain the kind of international agreement that will be needed to actually solve the climate policy problem. No one disputes that in order for greenhouse gas emissions to be reduced, global cooperation is required. A carbon tax stands a better chance of achieving this than the alternatives.

Ten: Economic efficiency, again. The world's most vibrant economies are fossil fuel-powered. So fundamental is fossil fuel combustion to economic health that it will take a long time, and much willpower, to sufficiently wean economies off of fossil fuels. A widespread and sustained effort to accomplish this is like dieting: as anyone who has ever been on a diet could tell you, it will take long-term resolution and commitment. Dieters will also be able to tell you that some days are better than others, but long-term habits are more important. A consistent carbon tax, annually adjusted for inflation, represents a long-term commitment. It is superior to cap-and-trade because a cap remains fixed no matter what happens in a given year (cap-and-trade programs may allow permit "banking" and "borrowing" across years, but that would only imperfectly simulate the flexibility offered by a carbon tax). In economic downturns, carbon dioxide emissions fall; in those years having a "loose" cap is a missed opportunity to reduce emissions even more, and perhaps develop some lower-carbon "habits." Carbon dioxide emissions in Europe and in the United States dropped precipitously in 2009, enough to push these Kyoto signatories startlingly far towards meeting their

Kyoto commitments. Such a time of depressed asset prices would have been an excellent time to invest in emissions reductions, but only a carbon tax would have incentivized those investments, not cap-and-trade.

What a carbon tax does, which cap-and-trade and other alternatives do not, is to keep up a consistent and persistent price signal. In a year like 2009, the economic slowdown would have destroyed all price incentives to reduce carbon dioxide emissions. That would have been a year of missed opportunities to lock in some progress. Economic efficiency demands that the opportunities to reduce emissions be taken not just at the places where emissions reductions are the cheapest, but also *when* they are cheapest. A carbon tax allows that to happen, whereas a cap-and-trade program robotically demands the same amount of emissions reduction, year after year, no matter what the economic circumstances. This is not economically efficient.

Those are ten reasons for conservatives to favor a carbon tax.

So why are carbon taxes so politically unpopular? One reason is that we seem to have a political allergy to anything with the word "tax" in it. In fact, some research suggests that if we were to label this policy a "fee," people might be less likely to oppose it.

But euphemizing is not the answer. The answer is to persist in making the plainspoken argument that if emissions reductions are required, it will cost money. Carbon taxes are the *least* costly way of achieving emissions reductions. Politicians talking down to the electorate only reinforce dumb conventional "wisdoms." The dumb conventional wisdom we must debunk is that we can get something for nothing. This is the hidden strategy for politicians that advocate for broad government subsidies, command-and-control regulation ("punishing the polluter," eliding the fact that energy costs often get passed on to consumers), and to some extent cap-and-trade. There must be honest and realistic talk about the increased energy prices that everyone must pay, as well as the economic and social consequences of failure to act. The case must be also laid out for how a carbon tax is the instrument that minimizes that cost and minimizes governmental interference.

Some are also concerned that carbon taxes are regressive, because raising energy and transportation costs would disproportionately hurt poorer households, for whom energy and transportation costs are a larger fraction of their budget. But recycling the revenues from a carbon tax can fix this. A redistribution of just a fraction of carbon tax revenues can make poor households whole. Moreover, even

without such a revenue distribution targeting poor households, a carbon tax would be, on the grand scale of things, one of the smallest insults visited upon the poorest Americans.

Reducing greenhouse gases will require significant changes in the way that we generate and consume electricity. Governments are not very good at orchestrating these kinds of changes. Private enterprises like Microsoft, Google, and Apple Computer are very good at changing large-scale behavior very quickly. Given that some very quick and large-scale ramp-up in renewable energy technologies is needed, the way to support renewable energy is to tax all things carbon, not try to subsidize things non-carbon. Ultimately, trying to subsidize, mandate, or otherwise prop up all things non-carbon has this pushing-on-a-string futility.

Fortunately, opposition to carbon taxes is a mile wide but an inch deep. Resistance to carbon taxes are based on broad but superficial misperceptions which can be broken down with persistent, simple, plain-spoken messaging. The message that needs to be conveyed is that all plans for reducing emissions will cost money. Even if some policies to reduce emissions do not *obviously* cost money, ultimately people pay, be it as taxpayer, automobile owner, electricity user, or just a consumer of goods in a fossil-fuel-powered economy. A "tax" only *sounds* worse than everything else. In reality, a carbon tax is the least costly way of reducing emissions, especially when the revenues are recycled back into the economy. A carbon tax offers the most opportunities to reduce emissions, giving society the chance to choose from the widest variety of ways to reduce emissions, and to choose the least costly ones. Finally, a carbon tax is something that can be easily and quickly deployed, because it can be implemented much like a sales tax, making it feasible for almost any country or any state or province. A carbon tax is the best option for reducing greenhouse gas emissions.