

10 reasons a carbon tax is trickier than you think

By David Roberts

House GOP leaders recently [confirmed](#) again what I [wrote last week](#): There isn't going to be a carbon tax in the next two years or, probably, for as long as the GOP controls the House. I've been asked by a few climate types, "Why not spend your time pushing for it rather than poo-pooing its chances?" It's a reasonable question. The answer, I suppose, is that I do not regard it with the same reverence as many economists and climate hawks.

That's not to say I wouldn't welcome a substantial, well-designed carbon tax. But is it the *sine qua non* of climate policy, the standard against which all climate solutions are measured and for which any sacrifice is justified? No. Those who support a carbon tax over cap-and-trade often tout its simplicity, but the fact is, there are plenty of ways to screw up a climate tax too. Not everything that goes under the name is worthy of support, especially if it's achieved at the expense of other liberal or green priorities. And given the current political milieu, it's likely that any carbon tax that *did* manage to pass would be a bum deal for America's poor and middle class. (Actually, that's probably true for anything that passes, period.)

Here are 10 reasons for a more tempered and realistic attitude toward a carbon tax.

1. It's conservative.

There's a reason so many conservative (and neoliberal) economists support carbon taxes: They fit comfortably in a worldview that says problems are most effectively solved by markets, with minimal government intervention.

Current markets have a flaw: They do not reflect the external costs associated with carbon dioxide emissions (namely, the impacts of a heating planet). The answer, economists argue, is to determine the "[social cost of carbon](#)" and to integrate that cost into markets via a carbon price, tax, or fee. With an economy-wide, technology-agnostic carbon tax in place, the market will eliminate carbon wherever it is cheapest to do so, insuring that we don't "overpay" for carbon reductions.

Implicit (and often explicit) in this view is the notion that *other* attempts to tackle carbon — say, EPA power plant rules, or fuel-economy standards, or clean-energy tax credits — are merely backdoor, inefficient ways of pricing carbon. If you get the social cost of carbon right

To save climate, no other policy tool comes close to a carbon tax

By Charles Komanoff & James Handley, Carbon Tax Center

Thank you for elucidating your reservations about placing a carbon tax at the heart of U.S. climate policy.

Until now, your many Grist posts critiquing carbon taxes have focused on political infeasibility. Now you've presented your *policy* objections. Thanks for bringing your concerns out into the open, with your typical clarity and brio.

No surprise: the Carbon Tax Center views a U.S. carbon tax as the *sine qua non* of effective climate policy — provided it builds toward a substantial price that *raises steadily and predictably over time*. With a ramped-up tax, the initial carbon charge can be modest, giving businesses and families time to adapt, while still broadcasting a clear price signal to begin shifting millions of decisions toward less energy and emissions — big decisions that determine design of vehicles and transport and that set the pace and nature of investment in low- and non-carbon energy; as well as the full gamut of household-level decisions, many of which can't and won't be touched without a carbon tax. Almost as importantly, a robust carbon tax *changes the culture* by broadening the definition of pollution and valorizing conserving behaviors with monetary rewards. OK, here are our counterpoints to your 10 points.

1. A carbon tax is conservative *and* progressive.

We don't think of a carbon tax as a *market* mechanism; there's no need to create a new market. It's a *price* mechanism. Call it a market *corrective* if you wish, but the term "market" is both a misnomer and a turnoff for carbon tax adherents (actual and potential) who don't identify with market ideology.

A carbon tax would correct existing markets that systematically under-reward virtually every action, every device, every innovation that reduces fossil fuel use because the prices of those fuels omit the costs of climate damage (not to mention most of the other harms from mining and burning coal, oil and gas).

We don't accept your suggestion that economists and policy-makers need to "get the social cost of carbon right" in order to set a carbon tax. For one thing, no two economists will ever agree on that number. More importantly, every climate-aware person already lives with the knowledge that the social cost of carbon is enormous: the likely descent of human civilization into

and levy an economy-wide tax that prices all tons of carbon equally, then you have optimized the market, carbon-wise. All other regulations and subsidies will only serve to disrupt market efficiency. They are sand in the gears, as it were.

The problems with this worldview are too many to list here, much less to litigate. Economists [James Galbraith](#) and [Dean Baker](#) argue that free markets are a myth; all markets everywhere are already designed, shaped, and regulated, usually to the benefit of the wealthy. Economist [Dani Rodrick](#) argues that industrial policy — “picking winners and losers” — is ubiquitous, a feature of all advanced economies, whether acknowledged or not. Sociologist [Fred Block](#) argues that virtually every industrial success story (e.g., [fracking](#)) can be traced to government-supported innovation.

Anyone familiar with the [U.S. electricity sector](#) knows that there is little resembling a market in that Rube Goldberg hodgepodge of overlapping jurisdictions and quasi-monopolies. The entire U.S. coal sector depends on supply from the Powder River basin, which is public land administered by the government. Internal-combustion vehicles are heavily favored by a century of road-building and sprawling land use.

And so on. There is no pristine “free market” for regulations and subsidies to besmirch. The game is always rigged, and right now it’s rigged in favor of the fossil-fueled status quo. The notion that a problem like climate change, with its century-spanning effects and potentially existential risks, will be solved exclusively or even primarily with “market mechanisms” is a religious doctrine, not a realistic appraisal.

What government proactively plans, encourages, and accomplishes is just as important to the climate struggle as what the market penalizes. Put more bluntly: the spending matters as much as the taxing. Which implies that ...

2. It’s the revenue, stupid.

Brookings [notes](#) that ...

... a carbon tax starting at \$20 per ton and rising at 4 percent annually per year in real terms would raise on average \$150 billion a year over a 10-year period while reducing carbon dioxide emissions 14 percent below 2006 levels by 2020 and 20 percent below 2006 levels by 2050.

\$150 billion a year — pretty soon you’re talking about real money! That could be used to support cleantech R&D or deploy renewable energy or build green infrastructure ... or it could be used for none of those.

chaos in the face of wholesale climate disruption. Our job as advocates isn’t to fix the “right” price of carbon but to maximize the internalization of carbon’s societal costs into the prices of fossil fuels. (Could any politically viable carbon tax capture the *entire* social cost?)

And we emphatically reject the insinuation that we’re beholden to a purist belief that complementary measures to control and reduce carbon are irrelevant or harmful. Like you, we’re painfully aware of the multitude of ways in which market barriers like split incentives, inadequate information and path-dependence impede innovation and buy-in for energy efficiency and renewables. Therefore, like you, we strongly support regulatory standards, especially those that address inefficiency in product and building design. Still, let’s be realistic about their limits:

- Standards and regs tend to motivate threshold-meeting behavior but no more.
- Standards and regs provide no incentive to conserve on *usage* — by right-sizing new homes, for example; or driving less; etc.
- We can’t expect standards and regs to address more than a subset of the thousands of types of machines, appliances and vehicles that collectively consume the world’s energy.
- Standards don’t catch up to new products until they’ve been adopted widely — and have “locked in” energy waste (e.g., plug loads).
- Standards and regs generate zero revenue and thus can’t figure in tax or fiscal “deals.”

As you note, David, there is no pristine “free market” in energy or anything else. But so what? By itself a carbon tax won’t level the playing field, but it will lower the tilt. And as the tax rises, the tilt will diminish, allowing clean energy and a conservation ethic to compete with dirty energy and an ethic of waste.

2. “Revenue recycle” will help the tax to rise.

We think you’ve got the revenue matter backwards.

Revenue treatment is important, of course, as befits any new tax that puts hundreds of billions a year in play. But rather than fund cleantech R&D and green infrastructure, we need to direct the revenue to support productive economic activity and offset the hit to poor and middle-income families’ disposable incomes. Doing so will help win the political buy-in to legislate periodic renewal of the annual rises in the tax that will drive the needed changes in behavior, infrastructure and R&D far better than subsidies.

Point is, what happens to the revenue should be at the *center* of climate hawks' negotiating strategy; it's not some peripheral bargaining chip.

3. "Revenue-neutral" means foregoing any money for climate solutions.

A "revenue neutral" carbon tax is one in which all of the revenue raised is returned automatically to taxpayers. Most of the carbon tax proposals floating around today are revenue neutral, mainly, as far as I can tell, because conservatives demand it. (Conservatives don't trust government with revenue.) There are three ways to achieve revenue neutrality, which I will list from most to least desirable:

- A [dividend system](#) (supported by James Hansen, Bill McKibben, and lots of other greenies) would distribute the carbon revenue to citizens on a flat per-capita basis, the same way Alaska distributes its [permanent fund](#) money.
- A similarly progressive option is to use carbon revenue to reduce payroll taxes, which are paid by around [80 to 90 percent of Americans](#).
- A *regressive* option is to use carbon revenue to reduce income taxes, which are paid by between [50 and 60 percent of Americans](#) and are the main source of progressivity in the U.S. tax system (wealthier people pay a higher rate). Replacing a [progressive tax with a regressive tax](#) would redistribute wealth upward. Unsurprisingly, that's the policy [supported by Republicans](#) like economist [Art Laffer](#), who have long loathed the income tax.

Note what all these uses of carbon revenue have in common: They do nothing to reduce carbon emissions or encourage clean energy. And to boot, they [wouldn't even reduce taxes much](#).

4. Carbon money should fund clean energy.

There are two distinct tasks for climate policy. One is to reduce carbon emissions at lowest cost. The other is to develop and deploy a new energy system. The evidence shows that a carbon tax is good at the first, but not great at the second. That's where the revenue comes in.

I was going to gather together the research on this, but then I discovered that [Mark Muro of Brookings](#) has done it for me. Bless you, Mark Muro of Brookings. (Pardon the long excerpt — all the emphases are mine.)

This is why we frame carbon tax revenue treatment as a macro-economic matter rather than an energy policy matter. (We say more about this directly below, at #3.)

3. "Revenue-neutral" helps us keep the carbon tax rising.

Like many carbon tax advocates, though not all, we (Charles & James) personally have progressive perspectives. Outside the Carbon Tax Center we advocate for robust government investment in education, public transportation, health protection, housing, and a broad spectrum of social services and support nets. Yet we ardently want carbon taxes to be close to 100% revenue-neutral (with minor and transitory exceptions for assistance for displaced workers and communities), for two reasons:

First, as you know all too well, it's next to impossible politically to direct carbon tax revenues to "good things" (e.g., green tech, mass transit) without also opening the floodgates for bads like "clean" coal, next-generation reactor loan guarantees, and biofuel boondoggles. Better to hold the line and continue to fund R&D from established pots of money.

Second, the carbon tax is going to have to rise steeply and steadily over a long time period to provide strong, ongoing incentives to phase out and finish off fossil fuels. Returning essentially all of the revenues to American households — whether through reductions in taxes like payroll taxes that discourage hiring and are distributionally regressive, or monthly electronic "dividends," or a combination — is essential to winning support for the rising carbon tax. Indeed, we want Americans to find these revenue return mechanisms so appealing that they will *welcome* ongoing rises in the carbon tax level so as to expand their size (and, ultimately, sustain them in the face of the declining carbon tax base as fossil fuel use dwindles, as we discuss in #6, below).

4. A strong enough carbon tax will indeed drive investment to clean energy.

We don't dispute Mark Muro's assertion in his ["Carbon Tax Dreams"](#) post that we'll never usher in massive cleantech investment or otherwise shrink fossil fuel use and carbon emissions to near zero with just the price signals from a carbon tax that starts at a mere \$15 to \$20/ton and rises only 4% a year faster than inflation. The Carbon Tax Center's [carbon tax spreadsheet model](#) yields the same conclusion. So does a pocket calculator: assuming 3% annual inflation, a tax rising 4% a year faster than inflation would take a decade to double in nominal terms, and almost two decades to double in

The sticking point here is that while the conventional wisdom among carbon pricers holds that higher dirty energy prices will provide the right market signals to entrepreneurs, who will then develop and deploy clean new technologies, a ton of evidence suggests that **pricing alone won't generate enough deployment to get us where we need to go**. Instead, it is becoming increasingly obvious that along with pricing we need a direct technology deployment push.

One hint of this comes from the modelers. Under neither of their respective carbon tax proposals do the Brookings or MIT groups forecast that emissions will drop enough to even come close to the 80 percent cut in emissions below 1990 levels that is the nation's long-term carbon emissions goal. Yes, fossil fuel use would go down, oil imports would shrink slightly, and emissions would decline, but much more work would need to be done to tackle global warming. Similarly, an interesting [analysis](#) by the Breakthrough Institute concluded that a \$20 per ton carbon tax would offer just one-half to one-fifth the incentive of today's subsidies for the deployment of solar, wind, and other zero-carbon technologies.

These results reflect the growing body of literature that has begun to suggest—and document—that **broad economy-wide pricing strategies alone induce only modest technology change and deployment**. Last year, Matt Hourihan and Rob Atkinson of the Information Technology and Innovation Foundation [ran through](#) some of the literature pertaining to a wide range of industries, while at the same time, scholarship specifically on energy has been accumulating.

[Ackerman](#) argued a few years ago that getting the price right is necessary but far from sufficient to mitigate climate change and that **direct public sector initiatives are required to disrupt path-dependencies and accelerate learning**. [Acemoglu and others](#) more recently demonstrated that the optimal carbon policy is not one-sided but involves both carbon taxes and direct research subsidies. They urge immediate action.

Turning to empirical evidence, [Calel and Dechezleprêtre](#) looked at company patenting patterns under the EU emissions trading system (a cap-and-trade pricing scheme) and concluded that the system has had very little impact on low-carbon technology change. And then, earlier this year, a Swiss-German team [found](#) that the EU system has

real terms. That's way too slow a ramp-up, considering that a carbon price of \$40/ton of CO₂ would add a mere 36 cents to a gallon of gasoline and 1.5 cents/kWh to the average U.S. retail electricity price.

We need a carbon tax that quickly gets to much higher rates than that. It doesn't have to *start* like gangbusters; indeed, it shouldn't, since families, businesses and institutions all need (and deserve) time to adapt to the new reality of higher fuel and energy prices. A steady and steep ramp-up rate is far more important and beneficial than a high starting point.

These considerations make the ideal carbon tax close to that embodied in legislation introduced in 2009 by Representative John Larson (D-CT). [Rep. Larson's carbon tax](#) starts at \$15/ton and rises *each year* by \$10-\$15, with the actual increment depending on whether emissions are being driven down fast enough. In the tenth year of a carbon tax, the CO₂ price would be between \$100 and \$145 per ton of CO₂ under the [Larson bill](#), vs. \$28-\$37 per ton for Muro's scenarios.

That 3-fold to 4-fold difference in the respective tenth-year carbon price would start to narrow eventually, though not until the start of the fourth decade, in absolute terms — indicating how fundamentally different the Larson tax scenario is from Mark Muro's. The corollary, David, is that while your boldfaced assertions that “pricing alone won't generate enough [clean-energy] deployment to get us where we need to go” and “broad economy-wide pricing strategies alone induce only modest technology change and deployment” may well hold for the undersized and only gradually rising tax levels you cited in your post, they don't necessarily apply to the kind of robust tax presented in Rep. Larson's bill.

We do take seriously Frank Ackerman's caveat in the [paper you cited](#), that “Price incentives alone cannot be relied on to spark the creation of new low-carbon technologies.” But recall that Ackerman, writing in 2008, was in part responding to an [IMF report](#) published earlier that year whose year-2100 climate “targets” could have come from the Koch Brothers playbook: a CO₂ concentration of 550 ppm, annual declines in emissions of only 0.6% till then, and a carbon tax starting at around \$1/ton of CO₂ and rising by just 67 cents a year. We suspect Dr. Ackerman would have a more sanguine view of the “market pull” of a carbon tax whose rate, like Larson's, is a full order of magnitude greater than what the IMF envisioned.

The bottom line, then, David, is that “the [carbon tax revenue] use for which climate hawks should be

stimulated only limited adoption of low-emissions technology and that **research, development, and deployment (RD&D) technology “push” measures induced more action.** This group concluded that none of the first three phases of the trading system were “capable of triggering increased non-emitting technology adoption” and that “only renewable-technology pull policies had this effect.”

And so we arrive back at the revenue: The accumulating evidence and the appropriate fit of the tax to its use argue heavily for at least a portion of the revenue of any carbon pollution fee to be applied to direct investment in energy system clean-up, whether through R&D or later-stage deployment supports.

In short, the tax side is not enough. Effective climate policy also requires *spending*.

This is commensurate with some of the revenue being rebated to low-income taxpayers, or used to reduce taxes, or wasted on the fake long-term deficit problems. Public investment in clean energy is not the *only* legitimate use of the revenue. But it is the use for which climate hawks should be advocating most strongly.

5. Carbon taxes are regressive.

I mentioned this is passing already, but it’s worth emphasizing. On their own, carbon taxes [hit the poor harder](#) because the poor spend a larger proportion of their income on energy. It isn’t difficult to solve that problem. Using the revenue to reduce payroll taxes would do it. Setting aside some revenue for direct rebates to low-income taxpayers would do it. (By the way, the Waxman-Markey bill [did exactly that](#).)

But swapping a carbon tax for the income tax wouldn’t. Using carbon tax revenue to reduce the deficit wouldn’t. If climate hawks want progressivity — and they should, if they hope for broad grassroots support — they’ll have to fight for it.

6. Carbon tax revenue is supposed to decline.

Remember, the goal of a carbon tax is to decarbonize the economy. As carbon declines, carbon tax revenues will decline, unless the tax is almost continuously ramped up. This wouldn’t matter so much for revenue earmarked for clean energy or direct rebates. There will be less need for that revenue as the economy decarbonizes.

But what if carbon taxes have replaced payroll taxes, which fund Social Security? As revenue declines, so will funding for Social Security. Not good. Or what if carbon

advocating most strongly” depends greatly on the size of the carbon tax. In the case of a carbon tax that is small and stays that way for a long time, maybe the lion’s share of the revenue should go to clean-energy RD&D. Not so, however, for a robust carbon tax, i.e., one with sustained, predictable and sizeable increases from each year to the next. There, the market pull (including long-term price expectations) should suffice to elicit clean-tech innovation and revolution. In that case, however, “revenue return” is mandatory — ethically, to offset households’ higher energy costs, and politically, to forge and maintain the constituency to keep the tax level rising.

5. Tax regressivity is an anathema . . . but curable.

No argument here, David, though we spin this issue a bit differently. We agree that (i) leaving revenue use out of the picture, a carbon tax has a greater proportional impact as household income declines, and (ii) progressive revenue treatment such as a revenue swap on payroll taxes, or pro rata dividends, or low-income support, can mitigate and eliminate the regressivity.

The Carbon Tax Center insists on such progressive treatment, though we concede that a final bill may be less than scrupulous on this score. (We also question the extent to which Waxman-Markey would have solved this problem, but we’ll save that discussion for another time.)

6. The eventual decline in revenue is a non-problem.

“The fact that a carbon tax is intended to phase itself out over time,” as you put it well, David, belongs in the class of problems that at this juncture should matter only to extreme policy wonks.

The Larson Bill, which we discussed under Point #4 above, and which certainly falls on the “aggressive” end of the carbon tax rate spectrum of, doesn’t reach max revenue until Year 18, when the annual intake is projected to plateau at just under \$800 billion. (Note: that figure, which is drawn from our modeling of the

taxes have replaced income taxes? As revenue declines, individual tax burdens will decline, which will delight conservatives, but should be a source of concern for liberals in favor of active government. The fact that a carbon tax is intended to phase itself out over time cannot have escaped the attention of its conservative supporters.

7. The carbon lobby will want to axe EPA regulations in exchange.

[Exxon has been supporting a carbon tax](#) (notionally) for several years, but it's made clear that it sees such a tax as "[an alternative to costly regulation](#)." This is what everyone's favorite dirty-energy lobbyist Frank Maisano recently [wrote](#) (behind a paywall):

No carbon tax should be considered before serious regulatory reform is undertaken. The U.S. EPA is moving forward on an approach that regulates carbon, which is akin to fitting a square peg in a round hole. Not only is it legally dubious, but it is not likely not work in practice, either.

Suffice to say, the fossil fuel lobby would never give a carbon tax their OK unless EPA regulations on carbon (and possibly other pollution regs) were scrapped. We saw this fight [play out once already](#), around the cap-and-trade bill.

Unless it was for a high-and-rising tax (which is unlikely), that would be a terrible trade for greens. The [implicit carbon price in EPA regs](#) is higher than an explicit tax would likely be. In developing regulations, EPA uses the government's official "social cost of carbon," which is around \$26/ton. There's good reason to think that figure is [dramatically too low](#). But it is already higher than a politically realistic carbon tax.

8. The carbon lobby will want to axe clean-energy support programs in exchange.

The same argument goes for clean-energy subsidies: the [implicit cost of carbon in those subsidies](#) is far higher — two to five times higher — than a \$20/ton carbon price. Trading subsidies for a tax would, especially in early years, represent far less direct support for clean energy.

9. The environmental benefits are uncertain.

The great benefit of a carbon cap over a carbon tax is that a cap ensures a particular level of emissions reductions (yes, yes, depending on how carbon offsets are used). The thing with a tax is, no one can be sure in advance how much it will reduce emissions. The history of environmental policy is one of [overestimating costs](#),

Larson bill assuming annual rises of \$12.50/ton, may change with revisions to the model now underway.) Well before then, there should be ongoing discussions about how to replace that revenue stream as it slowly and predictably shrinks. Indeed, given the amounts in question, we would expect those discussions to be a central feature of public policy in future decades.

7. EPA regulation of climate pollution may not measure up to its regulation of public-health pollution.

This issue should be straightforward. Greens should hold the line on health-and-safety rules pertaining to the energy sector — emission limits governing pollutants like NOx and mercury (e.g., [Mercury and Air Toxics Standards](#)); mining and combustion waste (a/k/a [Coal Combustion Residuals](#)); fugitive emissions like methane; and "macro" regs like the [Cross-State Air Pollution Rule](#). But prospective EPA rules directed at CO2 emissions may be another matter entirely.

Based on the authoritative 2011 [paper](#) by Burtraw et al. for Resources for the Future, new EPA regs will at best reduce greenhouse gas emissions (GHG's) in 2020 by only 13% from 2005 levels. Further reductions would be harder to come by, given that "a regulatory approach is likely to lead to less innovation ... than would occur under a flexible incentive-based program" such as a carbon tax. Moreover, unlike a carbon tax, GHG regulations would [generate zero revenue](#).

Symbols matter, and EPA authority on public-health pollution is vital. But EPA regulation of CO2 may be less valuable than you presume, David. (That EPA uses a \$26/ton social cost of carbon in its analyses doesn't mean that its regulations are designed to bring the same reductions as would result from a \$26/ton price.)

8. A robust carbon tax will do far more for clean energy than direct subsidies.

See #4, above, for our argument that a strongly rising carbon tax will drive investment to clean energy. In the limited space available here, we add that phasing out clean-energy subsidies would build political momentum to get rid of subsidies for fossil fuels and other forms of dirty energy.

9. Certainty in emission reductions is overrated.

That "no one can be sure in advance how much [a carbon tax] will reduce emissions" may well be the number one canard about carbon taxes. After all, what is the use of knowing now precisely how fast emissions will shrink, when we know that they have to shrink as fast as possible, which means faster than any carbon tax

so chances are good that the initial tax level will be set conservatively.

That's what typically happens with cap-and-trade systems — compliance costs are overestimated, there are too many emission permits issued, permit prices plunge, and there's little financial incentive to reduce emissions. But a cap-and-trade program has a built-in protective measure: *the cap*. Emissions are either falling or they aren't, and if they aren't, the cap provides a statutory basis for further action. It's not perfect, but it's something.

What happens if a tax isn't reducing emissions enough? It means Congress has to raise it. How much does Congress like raising taxes? How much do American voters like it when Congress raises taxes? Now imagine raising a tax repeatedly, on an ad hoc basis. Unless taxes take on a very different political valence in U.S. politics, that looks like a nightmare. The carbon tax could end up limping along at hopelessly low levels for ages, like the U.S. gasoline tax.

Now, theoretically, the tax could be programmed to rise a certain percentage each year, like the one Brookings modeled. Or there could be a "look back" provision that periodically assesses the tax's performance and adjusts it accordingly. But ...

10. All political incentives push toward a poorly designed tax.

It's true that a carbon tax can be well-designed. For economists, that means using the revenue to reduce [distortionary taxes](#). For clean-energy hawks, it means using the revenue to spark cleantech growth. For both, it means provisions that automatically boost the tax if emission reductions are not on track. (And there are other considerations too: how far upstream to levy the tax, how to deal with cross-border "leakage," etc. This post could have been even longer, trust me.)

The worst possible thing to do from both perspectives would be to set the tax at a static, low level and use a bunch of the revenue to carve out special deals for various industries. Then you'd get the economic hit from the tax *and* malign distributional issues.

And yet ... that is exactly where all the incentives point. There are many financial interests involved. Every one of them will be leaning on legislators to a) keep the tax as low as possible and b) secure them favorable treatment.

This same rent-seeking spectacle took place around the climate bill. But another benefit of a cap-and-trade system is that no matter how distributional issues are

and/or other possible measures can deliver?

The climate calamity is many orders of magnitude more dire and global than the acid rain problem. So can we please stop grafting the acid rain model onto climate? The declining sulfur cap in the 1990 Clean Air Act Amendments was intelligently tailored to estimates by limnologists of Northeast U.S. lakes' remaining capacity to withstand acid rain emissions. But we've already overshot the 350 ppm target for climate sustainability; atmospheric CO₂ is at 390 ppm and rising. There's no safe level for CO₂ emissions now or in the foreseeable future. Any target — 17% less by 2020, 40% less by 2030, 80% less by 2050 — is no more than a talisman.

What happens, you ask, if the carbon tax isn't reducing emissions enough? In some proposals, the tax would rise automatically, in others Congress would have to raise it. But either way it's crucial to structure revenue return so that a clear majority of Americans come out ahead and will back increases in the carbon tax rate. (See Points #2 and #3, above.) Built-in, recurring increases will not only obviate the need to return to Congress constantly; they will instill transformative price signals in America's energy systems, infrastructure, land use and culture that, collectively, will move us from fossil fuels to clean energy.

10. & Summation. Climate advocates' job is to maximize political incentives for a robust carbon tax.

All political incentives push toward climate inaction, period, and not just toward a poorly designed carbon tax. We can either give up . . . or we can keep working to break the impasse — primarily by building support from below, but also by choosing policy strategically.

Since giving up isn't an option, let's start by reviewing what we've established about carbon taxing thus far:

- Carbon taxing has potential appeal on both sides of the political aisle (Point #1).
- "Revenue recycle" can build the constituency to enable the tax to rise. (#2 & #3)
- A high enough carbon tax will spur investment in clean energy, without subsidies. (#4 & #8)
- Tax regressivity is anathema, but curable. (#5)
- Eventual revenue decline isn't a problem. (#6)
- EPA regulation of climate pollution isn't in the same league as a serious carbon tax (#7)
- Emission-reduction certainty is overrated. (#9)

To these assertions, let's add this:

- The ballpark magnitude of revenue from a carbon tax is knowable in advance — giving a

<p>settled (i.e., no matter how the permits are allocated), the cap remains the same and the environmental benefits are guaranteed. When it comes to a tax, however, loopholes and kickbacks reduce environmental benefits. Securing those benefits will be a constant, running battle. Environmentalists will be “those people who are constantly fighting to raise taxes.” That is unlikely to endear them to the public or generate support for other green initiatives.</p> <p>To sum up</p> <p>A well-designed carbon tax would be a fantastic thing. In my dream world, it would start at \$50/ton and rise 5 percent a year. Twenty-five percent of the revenue would go to rebates for low-income taxpayers; 25 percent would go to reducing payroll taxes; the rest would go to public investments in clean energy RD&D and infrastructure. Whee!</p> <p>Even a tax considerably smaller than that, done right, could enable Obama to meet the emission reduction goals he pledged in Copenhagen. It might also inspire other countries to follow suit, or at least convince other countries that the U.S. is finally in the climate game. It would be a big deal.</p> <p>But a carbon tax is not magic. If climate hawks go into negotiations accepting that carbon pricing must be revenue neutral, that market incentives can solve climate change on their own, that government spending and regulatory actions merely inhibit proper market functioning, that the overall tax burden needs to be reduced, that deficit reduction is an overriding short-term priority ... well, even if they come out of that negotiation with a carbon tax (which, as noted earlier, they won't), it will be low, regressive, and ineffective. And they will have worked themselves into an ideological corner that will be difficult to escape.</p> <p>Worse yet, what if they make all those concessions and come out of it with nothing? The concessions will remain on the record forever, serving as the baseline to future negotiations. (That's pretty much how the cap-and-trade battle worked out.)</p> <p>What's needed on climate change, ultimately, is a wholesale, society-wide commitment to remaking energy, agricultural, and land-use systems along low-carbon lines. “Market mechanisms” like a carbon tax are a crucial part of that effort, especially as a source of funding, but they are in no way a <i>substitute</i> for that effort. We won't get out of this that easily.</p>	<p>carbon tax salience in fiscal and tax reform.</p> <p>Unlike revenue from selling tradable emission permits, which would be subject to the extreme price volatility that has characterized every carbon cap-and-trade system, the revenue from a carbon tax is sufficiently predictable to serve as a building block for tax overhaul. (The inevitable lag in responding to the price signal makes this particularly true in the tax's initial years, which happen to be the most politically germane.)</p> <p>Earlier, under Point #4, we referenced the carbon tax proposed by Rep. John Larson, which our modeling suggests would reduce U.S. emissions by 30% within a decade while stimulating employment and economic activity. The Larson bill also includes border tax adjustments to protect domestic energy-intensive industries and to nudge U.S. trading partners to enact their own carbon taxes, leading to a global carbon price.</p> <p>The Larson bill could be said to be patterned on the British Columbia carbon tax, which went into effect in 2008 at a rate of roughly \$9 per ton of CO2 and was incremented annually to its current (2012) level of approximately \$27. On every criterion — climate, macro-economic, distributional, political — the tax appears thus far to be a resounding success. Consider:</p> <ul style="list-style-type: none"> • BC's carbon tax funds reductions in payroll, income, sales and corporate income taxes. • BC has experienced strong economic growth and reductions in CO2 emissions, both absolute and relative to the rest of Canada. • The BC political party that instituted the tax was retained in power in the next election. <p>To be sure, there are big differences between British Columbia and the 50 U.S. states, including hydro-rich BC's effective exemption of electricity from its tax. Nevertheless, these lessons are ours for the taking: first, it may be better to square up to the political pain of raising the carbon price than to hide it; and second, a tax with transparent and ironclad revenue recycling can build the political appetite for raising the tax level to the point where deep carbon cuts actually take place.</p> <p>In sum: a carbon tax isn't the whole answer, yet a transparent, briskly rising carbon tax will spur the development of many answers large and small that add up to a cultural transformation. Taxing carbon aligns everyone on the side of reducing emissions as fast and as far as possible. In reach, transparency and affordability, no other policy tool comes close.</p>
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