

Moving the U.S. Off Carbon With Less Pain, More Gain  
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Many environmentalists assume that putting a price on carbon and creating a renewable energy economy will require major public sacrifice. But the Sierra Club's Carl Pope argues that a well-designed package of market reforms — not austerity — will lead to a prosperous, low-carbon future.

By: Carl pope

How painful will a low carbon economy be — and how painful will the transition be?

Confronted with the urgent need to reduce our economy's greenhouse gas emissions 20 percent to 35 percent in the next 12 years, and 80 percent to 95 percent by mid-century, it is difficult to imagine this shift not requiring massive sacrifice.

In a recent article for Yale Environment 360, Bill McKibben stakes out that point of view, even warning that if President Barack Obama does what needs to be done about climate change it “will be politically... unpopular isn't even the word. It might well wreck his political future...”

Indeed, the widespread implication that the key policy needed to reduce carbon dioxide emissions is a price on carbon does reinforce the notion that the most important things needed to solve the climate crisis are higher energy prices and lower consumption.

But if, as Bill McKibben has said elsewhere, there is no silver bullet for climate change, just lots of silver buckshot, then insisting that sacrifice is the key has the effect of distracting us from the reality that it will take many answers to solve the problem. Often, advocates of inaction or tokenism say the reason we must do too little is that the price of doing more is too extreme. It is not strategically helpful to reinforce this notion.

The assumption that the costs of climate recovery will be prohibitively high simply does not stand up to scrutiny. A study by McKinsey & Company last year documented large opportunities to reduce U.S. emissions by 2030 that could be achieved with a negative cost — meaning that these represent investment opportunities that would increase the productivity of the overall U.S. economy. Less speculatively, experts at the University of California-Berkeley recently documented that more than 1.5 million jobs were created in California by relatively aggressive clean energy policies adopted by the state between 1972 and 2006. And other studies show that in the long run, energy costs are lower under a high efficiency and renewable

energy scenario.

The amount of sacrifice involved in reducing greenhouse gas emissions can be vastly reduced by conscious action to access the cheapest, cleanest energy. California has held per capita energy use constant since 1974, while it has increased 50 percent across the rest of the nation. It made no significant lifestyle concessions to accomplish this, nor did it just stumble onto it: California successfully planned and executed progressive energy efficiency and renewable energy development.

While the task of reducing carbon emissions is significantly greater, there is a fundamental difference in a mind-set that perceives what is needed as massive sacrifice and one that views the challenge as accelerating an economically attractive and sorely needed transition with a carefully designed program of market reform.

Right now, we generate electricity in power plants designed — and in some cases built — in the Taft era (hydro), the Coolidge era (coal), or the Kennedy era (nuclear). We ship electricity in transmission grids equipped with electromechanical switches whose fundamental design goes back 80 years. We burn gasoline in internal combustion engines that haven't changed much since Henry Ford, and those engines are in SUVs built on 40-year-old assembly lines. And 50 percent of the fuel we use to heat and cool our buildings radiates directly into the sky because many of those buildings have never been modernized for energy performance.

So there is every reason to believe that if we redesign energy markets to eliminate barriers to innovation and to let life-cycle benefits and price drive federal investment, rapid improvement in both renewable and energy productivity technology would open up enormously profitable opportunities to reduce greenhouse gas emissions and energy costs.

This does not, of course, mean that a rapid national transition to a low carbon economy will be free or painless. There will be substantial transition costs and the new economy will not leave all actors as well off as they were in a carbon-dependent world. To achieve the necessary pace of emission reductions required to meet the demands of global warming science, we will no doubt be compelled to accelerate the transition in ways that will have a significant price tag.

And price is important: Making those who emit carbon pay for the use of the atmospheric, terrestrial, and marine carbon sinks they appropriate with those emissions — and for the costs of the climate disruption they cause — will both accelerate the transition away from fossil fuels and make the overall global economy fairer and more efficient.

Let us begin by agreeing with one of McKibben's key points: "Doing what actually needs to be done... would involve — directly or indirectly —

raising the cost of continuing to live as we do right now.” But we need to ask ourselves, “What do we value about living as we do right now?” At one end, there is conspicuous carbon waste. People who drive around in Hummers, or who air condition rooms that have fires blazing in the fireplace, have the mindset that using more energy is a form of affluence. It’s a status symbol that we need to make both very expensive and socially unacceptable.

But far more energy waste happens because ordinary people live in leaky buildings with outdated appliances that they cannot easily or affordably upgrade. Do those residents value the draftiness of their apartment or the utility bill that comes with an inefficient refrigerator? When a small business buys a Ford Econoline — last significantly redesigned more than 20 years ago — does it value the 15 miles-per-gallon drive train even though it means that if the truck makes 50,000 miles a year in deliveries, and gas averages \$3 per gallon, that’s \$9,000 a year for fuel alone off their bottom line? A modern hybrid panel truck that gets 30 miles per gallon would save \$18,000 in fuel over four years. But Detroit doesn’t offer such a vehicle, because it assumed gasoline would never exceed \$2.50 a gallon. Do we value that kind of short-sightedness? This is waste that, if eliminated, saves us money — without sacrifice.

I want to be clear that I share McKibben’s despair over the materialism that dominates our culture. I endorse the call for a new environmentalism, one much more transformational and less incremental. We need to wrest access to the federal Treasury away from narrowly focused, carbon-dependent corporate elites. We need to end the network of regulatory barriers to low carbon innovations that have dominated our energy landscape since the 1920s.

However, I simply don’t believe that one of the necessary symptoms of success for such new politics will be austerity for the American people, or the wrecking of President Obama’s political future.

Our understanding of whether we need to sacrifice or reform has practical consequences for the design of global warming and energy legislation in the new Congress.

One school argues that the impact of a carbon price is so high in some regions that we must either accept modest carbon reduction goals to mitigate economic pain or give away carbon permits to businesses in those regions to make them whole. Duke Power CEO James Rodgers, one of the prominent advocates of this “cap and allocate to carbon users” approach, argues that it is fundamentally unfair to allocate permits or share revenues from carbon auctions with anyone except coal-producing and other carbon-dependent states.

The other camp recognizes that this approach turns those who have squatted on global carbon sinks into property owners and compensates them for their

reliance on free access to those sinks and their unwillingness to innovate. It points out that Peabody Coal does not own the Amazon, nor Exxon-Mobil the Maldive Islands, but in fact those carbon producers are counting on the Amazon and the Indian Ocean to absorb their emissions at huge cost to others. Cap and allocate pretends that these carbon emitters do, somehow, have a right to the Amazon and the Indian Ocean.

But this second camp concedes that energy bills are going to skyrocket, so it suggests rebating all of the revenues from auctioning carbon permits to taxpayers — what McKibben calls “cap and share.” McKibben, and some other advocates, also favor large investments in the clean energy transition — but they do not believe that these investments should be funded from the proceeds of carbon permit auctions. They would treat carbon revenues as Alaskans treat state oil proceeds, and distribute them evenly across the economy.

While I believe this is equitable, it would not provide the necessary market reform to drive our economy decisively in the needed direction. We need to use the revenue from carbon permits to aggressively pursue the shortest and cheapest distance between two points. It is the obvious assumption that energy markets will necessarily perform in the public interest that has gotten us into this difficulty to begin with.

In addition, sequence matters. We must invest heavily in our cheapest, quickest, and cleanest options first. Spending billions on power plants that are too expensive, take too long to complete, and overpay for carbon reductions freezes us into a less advantageous economic position. We should first pour public investment into solutions like energy efficiency, both gaining carbon reductions and reducing energy demand so that we can then choose the options that make the most sense for a decarbonized future. Broad distribution of carbon proceeds will not accomplish this targeted investment.

I want to propose a third mechanism — one rooted in the belief that if we take energy market reform and regulation seriously, we may well be able to reduce the demand for fossil fuels very rapidly, and with a modest resulting price for carbon. But if we do not invest in lowering demand for carbon simultaneously, and at scale, then in fact the inelastic demand for energy services will cause the price of carbon permits to soar, and the resultant political backlash will endanger the entire project.

What's needed is a national carbon cap, initially set at current emission levels, with the number of permits reduced rapidly to meet the U.S. goals mandated by global warming science. All permits would be auctioned and would be required for those who wanted to introduce carbon-based fuels into commerce. Only fossil fuel producers or importers would have to pay, keeping the system very simple and treating all carbon users fairly and equally.

A “release price” for permits — hypothetically \$30 per ton, indexed for inflation — should be established. This release price represents a modest increase in the cost of fossil fuels — 30 cents per gallon of gasoline. All revenues from the first \$30 per ton would flow to the U.S. Treasury, and Congress would allocate them in two ways: to make low-income consumers whole for the increased costs of gasoline and electricity in their community, and to invest in climate change solutions with a focus on energy efficiency, renewable energy, and efforts to minimize the impacts of climate change at home and abroad.

All levels of government would embrace an aggressive energy market reform program, involving such steps as ensuring that building codes move us toward the American Institute of Architects goal that new buildings in 2030 are carbon neutral.

But there may be periods during the transition in which the demand for carbon permits may not come down as fast as we anticipate, and the price of a carbon permit might for a period exceed \$30 per ton. This will send a more powerful signal to investors to back low-carbon alternatives, so it is important not to deal with the economic consequences of such a price spike by issuing more permits.

Instead, I propose a different means of protecting the economy and consumers from price spikes. All auction revenues from carbon permit prices above \$30 per ton should be immediately rebated to Americans. This retains the incentive for individuals to take actions to reduce their own personal use of carbon. It also protects the economy as a whole from a loss of income from higher fuel prices.

This scheme has numerous advantages over other alternatives because it treats all carbon users equally and avoids unfairly turning carbon sink squatters into owners; it provides a limited but robust revenue stream — \$60 billion to \$180 billion a year — for the government to meet the various costs of transitioning to a low-carbon economy; it establishes an escape valve for periods of high permit prices without weakening the overall signal to capital markets to aggressively invest in low carbon opportunities; it provides a mechanism for buffering carbon-dependent communities against high transition costs; and it recognizes uncertainty.

I don’t know exactly how fast we can improve the energy productivity and lower the carbon/energy ratio of our economy. The investments from the auction revenues below the release price maximize our chances of getting there as fast as we can; the rebate mechanism provides a safety valve for the overall economy and a fair distribution of the burden.

Our economy has labored in blissful ignorance for decades, ignoring the potent effects of the economic signals sent by federal investment, subsidy,

and protection in the energy field. Those costs and benefits have been determined by micro-politics rather than macro economics. It is critical that in addressing the stark challenge of carbon reductions, we must redirect those benefits from the polluting and uncompetitive technologies of the past to cleaner, higher performance, new energy options.

At the same time, we must take into account the impact of this transition on our existing communities. Getting the incentives right is the key to making all this work together. The level of sacrifice we face will fall in direct proportion to how effectively we use carbon revenues to motivate and deliver the energy options that minimize cost to consumers and maximize environmental benefit.

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