Cap and Trade

Cap & trade policies harm the economy and reduce the number of jobs. It is not a market-based solution. It relies on a political scheme to increase costs, and can therefore be justly viewed as a tax, stealthy or otherwise, on energy – the lifeblood of our economy.
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Cap & Trade Is Not A Market Solution

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By Robert P. Murphy, *Economist*

As the U.S. Senate debates climate change legislation this week, many have proclaimed the virtue of its “cap and trade” system as a “market solution” to reducing carbon emissions. Nothing could be further from the truth.

Unlike a direct tax, cap and trade is a European-style scheme that masks its negative consequences on the economy behind the rhetorical benefits of new government programs designed to help us. In truth, neither is good for consumers or the economy, but a closer look reveals why so many politicians find comfort in cap and trade.

The economic argument for penalizing carbon emissions is straightforward. If emissions from human activities are contributing to dangerous temperature increases as some scientists claim, then textbook theory says that the government should take steps to increase the private costs to those emitting carbon. Markets are efficient only when firms take all costs of their behavior into account.

If one agrees so far, the next question is which mechanism should be used to raise the pain of carbon emissions? One approach would have the government levy an outright tax. This is favored by most economists, and a Congressional Budget Office (CBO) analysis in February recommended a carbon tax because of its efficiency in meeting climate change targets. But politicians shy away from the dreaded T-word, especially with the economy entering recession and energy prices hitting all-time highs.

Enter cap and trade, which gives only the illusion of reducing carbon emissions without imposing costs on the average citizen. In this approach, the government distributes permits that entitle the holder to emit a specific quantity of carbon dioxide. The trick is that these permits would be tradable in the market, just as surely as shares to IBM or contracts on copper futures.

This, unfortunately, is why some have mistakenly viewed a cap and trade program as a “market solution.” Because the carbon permits are turned into property with a market price, they should end up in the hands of those who value them the most, i.e., the most efficient emitters. In theory this means that a cap and trade system achieves a desired reduction in carbon emissions at the lowest possible compliance cost.

For example, if the government arbitrarily decreed that every firm had to reduce its carbon emissions by 10 percent, this would cause unnecessary economic damage, because it is much easier for some operations to scale back emissions than others. If instead the government issued tradable permits allowing total emissions of 90 percent of the previous year’s amount, then the desired reduction would be much cheaper. Those firms that could scale back more easily would do so, and would sell their permits to those firms that found it too expensive to cut emissions. It is the elegance of this outcome that has hoodwinked market enthusiasts into supporting cap and trade.

Yet despite the superficial resemblance, cap and trade isn’t really a free market. The number of permits is an *arbitrary scarcity* imposed by government fiat. In the real market, resource prices indicate genuine scarcity. If an oil

pipeline is attacked, the price of oil goes up, causing industry and consumers to economize on the commodity. This response is rational, because the available supply truly has gone down.

But if the prices of oil, coal, and other fossil fuels explode because of a cap and trade program, this won't reflect genuine economic scarcity. Consumers will be forced to restrict their use not because there is less supply available, but because of a number dreamed up by Washington bureaucrats. This is no more a "market price" than if the government decided to sell people permits giving them permission to sneeze. (This actually makes sense, since exhaling emits CO_2.)

Cap and trade is not a market-based solution. It relies on a political scheme to increase costs, and can therefore be justly viewed as a tax, stealthy or otherwise, on energy – the lifeblood of our economy. So here's the real difference: cap and trade masks the causes of higher consumer prices much better than a straightforward tax. And *that* is precisely why so many politicians endorse it.

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CAP AND TRADE PRIMER: EIGHT REASONS WHY CAP AND TRADE HARMS THE ECONOMY AND REDUCES JOBS

The most popular way to regulate carbon dioxide emissions is through a cap and trade program. President Obama and many policymakers support some form of this regulatory policy. Cap and trade aims to cap emissions of carbon dioxide at a politically-determined level and then have the users and producers of oil, coal, and natural gas buy, sell, and trade their allowance to emit a given amount of carbon dioxide. Cap and trade will increase the price of oil, coal, and natural gas in an effort to force users to switch to other, less reliable, more expensive forms of energy.

These proposals are very, very costly and economically damaging. If enacted, last year's flagship cap and trade proposal, the Lieberman-Warner bill, would increase the cost of

gasoline by anywhere from 60 percent to 144 percent and increase the cost of electricity by 77 to 129 percent.

Up to four million Americans would lose their jobs under the program, which amounts to a $4,022 to $6,752 loss in disposable income per household. In return, we could have expected a 63 percent emissions cut. President Obama's budget proposes to cut carbon dioxide emissions by 83 percent. If successful, it's reasonable to conclude it would lead to even greater economic hardship than envisioned under Lieberman-Warner.

Other problems inherent in cap and trade exist, and they are manifold. What follows is a brief explanation of some of the most glaring:

Reasons why Cap and Trade is a Bad Idea:

1. **The point of cap and trade is to increase the price of energy.** Cap and trade is designed to increase the price of 85 percent of the energy we use in the United States. That is the point. For it to "work," cap and trade needs to increase the price of oil, coal, and natural gas to force consumers to use more expensive forms of energy. President Obama's OMB director, Peter Orszag, told Congress last year that "price increases would be essential to the success of a cap and trade program."[1]

2. **Cap and trade schemes for carbon dioxide have not worked to reduce emissions.** Europe's Emissions Trading Scheme (ETS) began in 2005. The first phase, from 2005 to2007, did not reduce carbon dioxide emissions. Instead, overall emissions increased 1.9 percent over that period.[2] The reason is simple: European politicians know that cap and trade is economically harmful and do not want these policies to cost more jobs, especially during these difficult economic times. German Chancellor Angela Merkel recently stated that she would not allow EU climate regulations to go forward that would "take decisions that would endanger jobs or investments in Germany."[3]
3. **Cap and trade will harm the poor.** According to the Congressional Budget Office, the costs of reducing carbon dioxide emissions would disproportionally harm the poor. A mere 15 percent decrease in carbon dioxide emissions would cost the lowest-income Americans 3.3 percent of their income, but only 1.7 percent of the income of higher income households.[4] President Obama wants to decrease greenhouse gas emissions by 83 percent, not a mere 15 percent. This will entail much greater economic sacrifice among those who have the least to spare.

Table 1.

Annual Increase in Households' Costs from a 15 Percent Cut in Carbon Dioxide Emissions

	Average for Income Quintile				
	Lowest	Second	Middle	Fourth	Highest
Cost Increase in 2000 Dollars	560	730	960	1,240	1,800
Cost Increase as a Percentage of Income[a]	3.3	2.9	2.8	2.7	1.7

Source: Congressional Budget Office.

4. **Cap and trade harms energy security**. Some proponents of cap and trade claim that cap and trade will improve energy security. Unfortunately, this is exactly backwards—a cap and trade scheme will undermine and erode our nation's energy security. When many people express concern about energy security, they are concerned about oil imported from foreign countries. They do not realize that domestically produced oil is our number one source of oil[5] and Canada is our number source of oil outside the U.S. During 2007, the last complete year for which data is available, only 17 percent of the oil we consumed came from the Middle East.[6]

   But cap and trade will assess a heavy penalty on Canadian oil. Much of the oil we get comes from its vast reserves of oil sands. Because it requires more energy to extract the resources from those sands than it does to produce oil in the Middle East, cap and trade will make Canadian oil more expensive than oil from the Middle East.

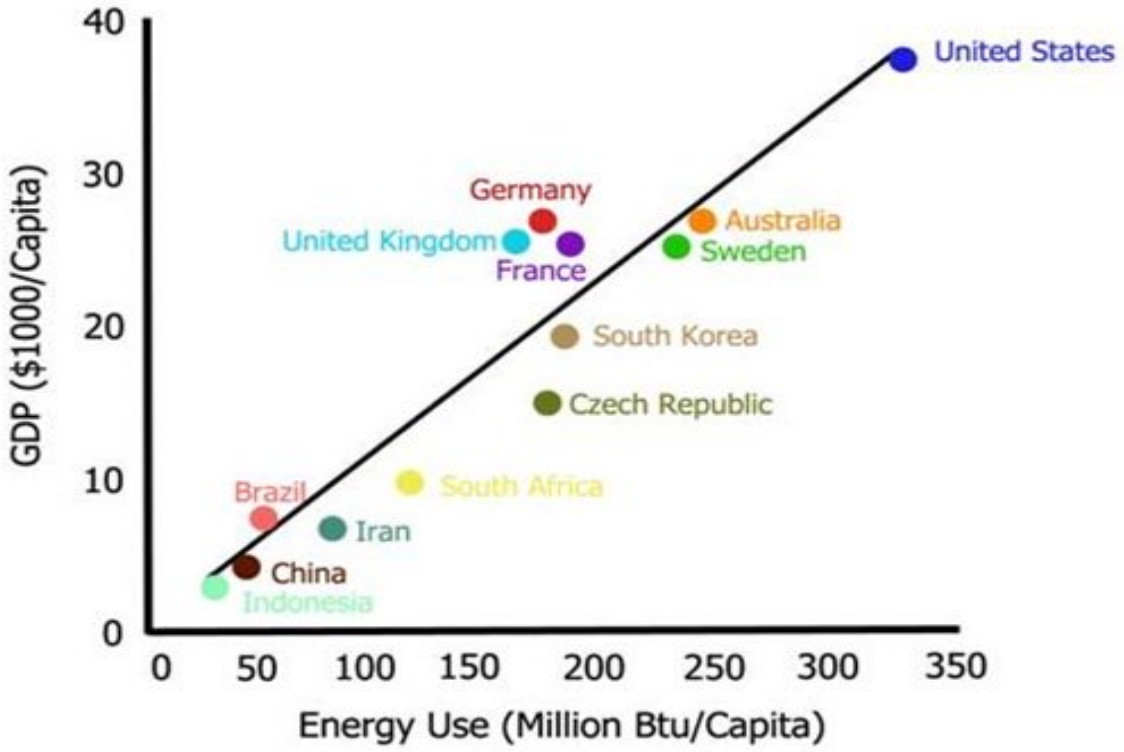
   Cap and trade, therefore, creates incentives to import more oil from the Middle East, not less. Cap and trade also penalizes domestic oil extraction from oil shale. In Colorado, Utah, and Wyoming, estimates suggest that 800 billion barrels of oil resources are ready to be produced.[7] For a sense of scale, that's more than three times as much oil as Saudi Arabia has in its reserve. Also, the U.S. has the world's largest coal reserves.[8] At current usage rates, we have 200-250 years of demonstrated coal reserves.[9] Coal-to-liquids could give the U.S. much larger reserves of petroleum fuels.

5. **Cap and trade for sulfur dioxide emissions is not comparable to cap and trade for carbon dioxide.** Proponents of cap and trade point to the sulfur dioxide program as an example of how easy and effective it would be to institute an economy-wide cap and trade program for CO2. But sulfur dioxide and carbon dioxide emissions are not comparable. When the sulfur dioxide program started, it targeted only 110 coal-fired power plants. Later, it was expanded to 445 power plants.[10] Greenhouse gas emissions are released from millions of sources, including electricity production, planes, trains, automobiles, ships, home furnaces, fertilizer production, farm animals, and millions of other sources, including humans. Regulating

millions of different and individual sources of emissions is considerably different from regulating 445 plants.

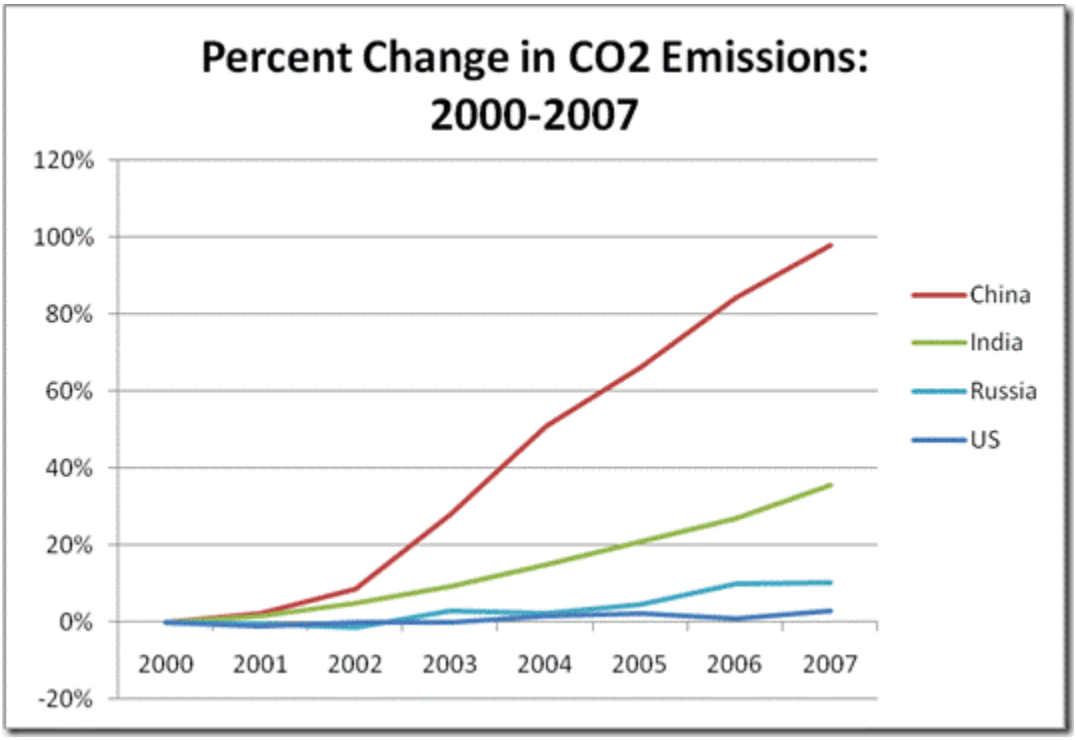
Also, many low-cost sulfur dioxide control options existed when the program took effect.[11] This is not the case with carbon dioxide control technologies. There are no control technologies that are commercially available at commercially-competitive prices. One way to reduce sulfur dioxide emissions was to use “low-sulfur coal” but there is no “low-carbon dioxide coal.”[12]

Indeed, the cost-effective way to reduce carbon dioxide emissions is to use less energy. But energy is the lifeblood of the economy. Energy allows us to do more work with less time and effort. As a result, there is a strong correlation between energy use and economic prosperity, as the chart below demonstrates:



Peter Huber & Mark P. Mills, The Bottomless Less, p. 136 (2006)

6. **A domestic cap and trade program, even in the best case, can only produce marginal impacts on climate.** In 2006, China surpassed the United States as the world’s largest emitter of carbon dioxide.[13] But the difference in emission growth rates is striking. According to data from the Global Carbon Project, from 2000 through 2007 global total greenhouse gas emissions increased 26 percent. During that same period, China’s carbon dioxide emissions increased 98 percent, India’s increased 36 percent and Russia’s increased 10 percent. Carbon dioxide emissions in the United States increased by three percent from 2000 through 2007.[14] These data are displayed in the graphic below:



As time goes on, the United States will emit a smaller and smaller share of the world's total greenhouse gas emissions,[15] which makes unilateral efforts— such as a domestic cap and trade program—an ineffective way to influence climate. If the United States were to completely cease using fossil fuels, the increase from the rest of the world would replace U.S. emissions in less than eight years.[16] If we reduced the carbon dioxide emissions from the transportation sector to zero, the rest of the world would replace those emissions in less than two years.[17] Increases in worldwide carbon dioxide emissions are driven by developing economies, not the United States.

7. **A domestic cap and trade program will force more industries to leave America**. Energy costs are a major expenditure for heavy industry. America's natural gas prices are the highest in the world,[18] even though we have the world's sixth largest proven natural gas reserves.[19] The high price of natural gas has significantly contributed to the loss of more than 3,000,000 manufacturing jobs since 2000.[20] Cap and trade taxes will drive up the cost of natural gas because companies would use it as a substitute for coal in electricity production, which means increased electricity costs for industry and the individual. This is especially troublesome for chemical companies, all of which use natural gas not only as an energy source, but also as a feedstock. Higher natural gas prices will force them to pursue options offshore and overseas, reducing American jobs.

8. **A cap that is set at the wrong level will cause great economic harm.** Even the proponents of carbon taxes, such as Yale University Professor William Nordaus, find that once there is deviation from worldwide participation, the costs of achieving environmental global improvements dramatically rise. Nordhaus' economic model shows that an overly ambitious and/or inefficiently structured policy can swamp the potential benefits of a perfectly calibrated and efficiently targeted plan.[21] For example, Nordhaus' optimal plan yields net benefits of $3 trillion ($5 trillion in reduced climatic damages and $2 trillion in abatement costs). Yet other popular proposals have abatement costs that exceed their benefits. Take for example former Vice President Al Gore's 2007 proposal. It sought to reduce carbon dioxide emissions 90

percent by 2050. Nordhaus' model estimates this plan would make the world more than $21 trillion poorer than if there were no controls on carbon dioxide.[22]

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[1] Peter R. Orszag, *Implications of a Cap-and-Trade Program for Carbon Dioxide Emissions before the Committee on Finance United States Senate*, Apr. 24, 2008, http://www.cbo.gov/ftpdocs/91xx/doc9134/04-24-Cap_Trade_Testimony.pdf.

[2] *See* European Union, *Emissions trading: 2007 verified emissions from EU ETS businesses*, May 23, 2008, http://europa.eu/rapid/pressReleasesAction.do?reference=IP/08/787&format=HTML&aged=0&language=EN&guiLanguage=en

[3] AFP, *Merkel to Defend German Jobs Against Climate Deal*, Dec. 8, 2008, http://www.google.com/hostednews/afp/article/ALeqM5g4WO_672V3miIHKWLT32C99ui-2g.

[4] Congressional Budget Office, *Trade-Offs in Allocating Allowances for CO2 Emissions*, Apr. 25, 2007, http://www.cbo.gov/ftpdocs/80xx/doc8027/04-25-Cap_Trade.pdf.

[5] *See* Energy Information Administration, *Crude Oil Production*, http://tonto.eia.doe.gov/dnav/pet/pet_crd_crpdn_adc_mbblpd_m.htm The U.S. produces around 5,000,000 barrels of oil per day. We import about 2,000,000 barrels of oil a day from Canada, out largest oil supplier. *See* Energy Information Administration, *Crude Oil and Total Petroleum Imports top 15 Countries*, http://www.eia.doe.gov/pub/oil_gas/petroleum/data_publications/company_level_imports/current/import.html.

[6] *See* Energy Information Administration, *Annual Energy Review 2007*.

[7] Task Force of Strategic Unconventional Fuels, *Development of America's Strategic Unconventional Fuel Resources* p. 5, Sept. 2006, http://www.fossil.energy.gov/programs/reserves/npr/publications/sec369h_report_epact.pdf.

[8] Energy Information Administration, *Coal Reserves*, Feb. 2008, http://www.eia.doe.gov/neic/infosheets/coalreserves.html.

[9] Energy Information Administration, *Coal—A Fossil Fuel*, July 2008, http://www.eia.doe.gov/kids/energyfacts/sources/non-renewable/coal.html.

[10] Kenneth P. Green et. al, *Climate Change: Caps vs. Taxes*, American Enterprise Institute, (June 2007) http://www.aei.org/publications/filter.all,pubID.26286/pub_detail.asp

[11] *Id.*

[12] *Id.*

[13] *See e.g.* Netherlands Environmental Assessment Agency, *China now no. 1 in CO2 emissions; USA in second position*, June 19, 2007, http://www.pbl.nl/en/news/pressreleases/2007/20070619Chinanowno1inCO2emissionsUSAinsecondposition.html.

[14] Calculated using the emission data from the Global Carbon Project. In 2000, China emitted 910,950 GgC, India 316,804 GgC, Russia 391,652 GgC, and the U.S. 1,541,013 GgC. By 2007, China emitted 1,801,932 GgC, India 429,601 GgC, Russia 432,486 GgC, and the U.S. 1,586,213 GgC.

[15] According to the Global Carbon project, in 2007, China emitted 21% of the world's carbon equivalent and the U.S. emitted 19%.

[16] Calculated using the emission data from the Global Carbon Project. According to these data, the U.S. emitted 1,586,213 GgC in 2007. Without the U.S., the world's emissions were 5,203,987 GgC in 2000, increasing to 6,884,787 GgC in 2007.

[17] Calculated using the emission data from the Global Carbon Project. According to EPA, the GHG emissions from the transportation sector total 28% of total U.S. emissions. Environmental Protection Agency, *Regulating Greenhouse Gas Emissions Under the Clean Air Act; Proposed Rule*, 73 Fed. Reg. 44354, 44403 (July, 30, 2008). Twenty eight percent of the U.S.'s 2006 carbon dioxide emissions are 436,141 GgC. From 2005 to 2007, the world's emissions, with the emissions from the U.S., grew by 476,324 GgC.

[18] Paul N. Cicio, *Testimony of Paul N. Cicio, President of Industrial Energy Consumers of America before the House of Representatives*, Dec. 6, 2007, http://www.ieca-us.com/documents/IECAHouseTestimony-NaturalGas_12.06.07.pdf.

[19] Energy Information Administration, *Annual Energy Review 2007,* Table 11.4, http://www.eia.doe.gov/emeu/aer/txt/ptb1104.html.

[20] *See Testimony of Paul N. Cicio.*

[21] Robert P. Murphy, *Rolling the DICE: Nordhaus' Dubious Case for a Carbon Tax*, p. 20, June 2008, https://www.instituteforenergyresearch.org/wp-content/uploads/2008/06/2008-06_rolling_the_dice_murphy.pdf.

[22] *Id.* at 20.

STUDY: THE OTHER HALF OF WAXMAN-MARKEY: AN EXAMINATION OF THE NON-CAP-AND-TRADE PROVISIONS

PDF

- Fact Sheet
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Executive Summary

The massive energy-regulating bill (H.R. 2454) the House of Representatives passed in June 2009 is now before the Senate. Though the cap-and trade program has received most of the media and public attention surrounding Waxman-Markey, the rest of the bill (at least 628 pages) could create economic harm just as great as cap-and-trade. Without cap-and-trade, H.R. 2454 might still be the most far-reaching, counterproductive package of new taxes, transfers and obstacles to economic growth and liberty ever assembled in one bill.

The bill affects so many facets of energy and the economy that simply summarizing its major provisions is challenging. To simplify, *The Other Half of Waxman-Markey: An Examination of the Non-Cap-and-Trade Provisions in the Waxman-Markey Bill* studies four types of policies: [1] "supply" measures intended to reduce industrial GHG emissions, most importantly in power generation; [2] "demand" policies intended to reduce energy (electricity) consumption that causes additional emissions, e.g. by power producers; [3] seemingly minor "stealth" provisions with the potential for major economic harm as the future unfolds; and [4] politically motivated transfers of wealth not covered in the first three classifications.

The centerpiece of the supply side is a national "renewable portfolio standard" (RPS), a provision that requires investor-owned utilities to obtain 20 percent of their power in 2020 from renewable sources or increased efficiency. (Municipal and co-operative systems that sell 25 percent of the nation's power are exempt.) An RPS is both an inefficient environmental policy and an unnecessarily expensive way to produce power. It also cannot "create jobs"—power users pay the wages of workers in renewables, creating unemployment in industries that produce what users would have otherwise bought. Other supply provisions include a federal corporation—with a $1 billion annual price tag—that will coordinate research and development of carbon capture and sequestration. "Success" of this venture is defined as power costs that rise 40 to 70 percent. A new "Clean Energy Development Administration" will provide tax-supported finance for projects that a panel of political appointees determines are "breakthroughs." Interestingly, the bill defines breakthrough projects as those that capital markets are unwilling to fund.

The bill also requires utilities and states (i.e. power consumers and taxpayers) to create infrastructures for electric vehicles that do not yet exist. Another $50 billion is available to vehicle producers and almost anyone else distantly connected with their technology; despite the fact that research has not shown that a shift to electric vehicles would actually *reduce* GHGs. . And despite a growing consensus that ethanol increases emissions, H.R. 2454 gives ethanol a six-year pass before any EPA regulation can take effect.

The bill also includes a massive federal takeover of state building codes and regulation. Even if we ignore the inherent constitutional issues the provision raises surrounding state jurisdiction, H.R. 2454 disregards the fact that market forces have steadily improved building energy efficiency and instead requires that by 2030 all new buildings use 75 percent less energy than our most efficient buildings today. The bill also tightens the regulation of lighting and appliances (including underwater installations) and is likely to require carbon labeling of many goods in the near future. Moreover, it requires that taxpayers reward retailers with $200 or more for each super-efficient appliance they sell and institutes the equivalent of a “cash for clunkers” program for industrial electric motors and related equipment. Finally, a last-minute 92 page addition to the bill provides grants for an assortment of “community” activities that are often only vaguely associated with energy efficiency.

Section 198 of the bill adds a presidentially-appointed “consumer advocate” to the Federal Energy Regulatory Commission (FERC), which already has such an office. H.R. 2454 gives the Commission itself no authority over the advocate, but gives the advocate authority over almost all of FERC’s legal staff. This “stealth” White House takeover of an independent regulatory commission is unprecedented andlikely reflects the political importance of FERC’s increased authority over markets for GHG allowances and renewable energy credits under the bill. Another likely time bomb is hidden in provisions on “adaptation” to climate change, which are largely devoted to protecting existing wildlife environments. Various appointed panels will become *de facto* environmental regulators not subject to usual oversight procedures. H.R. 2454 also funds extensive data collection and centralization of habitat databases, explicitly preparing for environmental pressure groups to utilize the data to fight state and local government proceedings that include energy development, urban planning and highway construction.

Finally, the bill includes a hodgepodge of transfer payments with little to unite them other than the political importance of their recipients. Applications for retraining funds and displaced worker “adjustment assistance” require participation by both political appointees and “community” groups. Adjustment assistance can be up to 70 percent of wages for up to three years, far higher and longer that ordinary unemployment compensation. Poor households will receive additional payments to compensate for purchasing power they will lose due to cap-and-trade, another indication that the administration sees the law’s effects on prices. After 2020, the President must impose labor-protecting tariffs on imports from countries with lagging climate programs, unless Congress says otherwise. The bill also contains numerous transfers to higher education for research on a range of the bill’s subjects. There will be at least six new types of research centers working on bill-related topics, including one whose only function is to coordinate the other centers.

The public has quite quickly come to understand that cap-and-trade is merely another tax. Though Waxman-Markey is superficially concerned with efficiency, in reality, the bill is an incredibly large and diverse package of inefficient projects, regulations and transfers. Its complexity reflects the complex political considerations that were necessary to induce the House to pass it by the tiniest of margins. This bill is a top-down, government-knows-best,

division-of-the-spoils substitute for the serious legislation that is needed to address our nation's energy challenges.

I. Introduction

SENATORS BOXER AND KERRY UNVEIL THEIR CAP AND TRADE BILL

SEPTEMBER 30, 2009

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Senators Boxer and Kerry unveiled their cap-and-trade bill energy tax bill today. [Boxer-Kerry bill available here.] The bill is very similar to the drafts they released yesterday. It's too early to fully analyze the bill, but a few things are clear from the outset.

1. It appears the Senators do not trust cap-and-trade to produce the result they want. If they did, the bill would not need to increase hundreds of pages of additional (and costly) energy regulations.
2. In spite of their claim that this bill will create jobs, portions of the bill suggest the Senators understand that their legislation will be costly for Americans. This is why the bill contains subsidies for people who lose their jobs as a result of the bill's provisions.
3. It appears that the Senators want the Environmental Protection Agency (EPA) to regulate greenhouse gases using the Clean Air Act. Unlike the Waxman-Markey bill, the Boxer-Kerry permits EPA to move forward with regulations.[1]Even the *Washington Post* believes that it is not efficient for EPA to regulate greenhouse gases using the Clean Air Act.
4. A recent study shows that the Waxman-Markey bill will redistribute $14 billion per year from the nation's poorest citizens to the nation's richest citizen. Because the Boxer-Kerry bill is functionally similar to Waxman-Markey, the Boxer-Kerry bill will benefit the rich at the expense of the poor.

A couple other interesting features:

- The bill's summary does not describe the bill as "cap-and-trade" bill. Instead, the cap-and-trade provisions are called "pollution reduction and investment." Apparently, Americans are seeing cap-and-trade for what it is—a tax.
- The bill's summary only mentions "greenhouse gases" once and does not mention carbon dioxide. Instead, the summary describes these emissions as "carbon pollution." This is a misnomer, as New York Times reporter Andrew Revkin has pointed out. Not all greenhouse gases contain carbon (nitrous oxide and sulfur hexafluoride for example) and not all emissions which contain carbon are greenhouse gases (carbon monoxide is an example). It would seem that Senators Boxer and Kerry prefer a sound bite to accurately portraying the emissions they seek to regulate.

[1] As we have noted before, Waxman-Markey's attempt to limit EPA's ability to regulate greenhouse gases is ineffectual. The limitation only prohibits EPA from regulating greenhouse gases based on the impact on "global climate change." (Sec. 831-835) That language does not prohibit EPA from regulating carbon dioxide based on non-global climate change concerns such as ocean acidification. This is especially telling because there are a number of sections in Waxman-Markey where climate change and ocean acidification are coupled (see e.g. Sec. 471).