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If Climate Change Is Happening Now, What Do We Do?

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Chairman Boxer, Ranking Member Vitter, members of the Committee, I am honored to be invited to testify before you today on climate change.

I am a senior fellow at the Manhattan Institute. From 2003 until April 2005 I was chief economist at the U.S. Department of Labor. From 2001 until 2002 I served at the Council of Economic Advisers as chief of staff. I have served as Deputy Executive Secretary of the Domestic Policy Council under President George H.W. Bush and as an economist on the staff of President Reagan's Council of Economic Advisers.

Is climate change happening now? Since 2003 global temperatures appear to have reached a plateau.¹ With rising greenhouse gas emissions from Asia and other emerging economies, many predicted that temperatures would continue to rise. Why they have not done so is a puzzle.

With an apparent stall in global warming, the focus has switched to "climate change." For instance, on July 11, 2013, the Department of Energy issued a report entitled *U.S. Energy Sector Vulnerabilities to Climate Change and Extreme Weather*. The report projects increases in storm and flood frequency.

However, a review of the data over the past 100 years does not show a steady increase in major storms such as hurricanes, nor a steady increase in the number of floods, even though greenhouse gas emissions increased. The National Oceanic and Atmospheric Administration shows the number of hurricanes over the past 100 years has been volatile, with no clear trend, see Figure 1. There were seven floods reported by the NOAA's Mid-Atlantic River Forecast Center in 2012, the precise number reported in 1912. In between, some years have shown higher numbers, others have shown lower numbers. The data have been sporadic at best, as shown in Figure 2.

Despite Congress's decision not to pass cap-and-trade legislation, on June 25, in a speech at Georgetown University, President Obama called for similar regulatory measures to reduce greenhouse gases. He announced that he will use his executive powers to reduce greenhouse emissions from existing power plants, as well as future plants. He also plans to increase efficiency standards for appliances and authorize the placement of wind farms and solar power plants on federal lands. He asked the Department of Defense to install 3 gigawatts of renewable power on bases. He

¹ National Aeronautics and Space Administration, *Global Land-Ocean Temperature Index*, http://data.giss.nasa.gov/gistemp/graphs_v3/fig.A2.txt

announced that over the next 7 years, 20 percent of the energy the federal government will consume will come from renewable sources. He mentioned plans for federal tax dollars to fund building infrastructure, such as seawalls for communities.

The 111th Congress failed to pass legislation to regulate emissions in 2009-2010, when Democrats had majorities in the House and Senate. The cost of the legislation is a major reason for the failure of the Waxman-Markey and Kerry-Lieberman "cap-and-trade" bills, which would have capped emissions and encouraged firms to buy and sell rights to pollute.

The bill would have required EPA to shrink greenhouse gas allowances steadily to 2050. When any year's emissions would have exceeded a firm's cap, the firm would have to purchase allowances from the government or other companies. That is a tax under another name, driving up costs that would be passed on to consumers.

The costs of the Kerry-Lieberman and Waxman-Markey bills were too large for a Democratic Congress to support, even with Obama's backing. The revenues from the bills, about \$646 billion over 8 years, would have at that time been the largest tax increase in history.

Even if rising greenhouse gas emissions are affecting the climate, actions by the United States will not be helpful in the absence of changes by China and India. The U.S. global share of greenhouse gases is 17 percent.

Other countries are increasing emissions. China, India, and Germany are expanding coal consumption, according to the International Energy Agency. Global coal use will rise by 1.2 billion tons in five years. "By 2017," according to a December 2012 IEA report, "coal will come close to surpassing oil as the world's top energy source."² Mr. Obama's reductions in U.S. emissions, with their associated costs, will just be a drop in the global bucket.

Polls show that many believe protecting the environment is less important to Americans than economic growth.³ With the slowdown in many measures of global warming over the past decade, climate change is playing second fiddle to jobs. Americans know that no reduction in global warming will occur if America reduces greenhouse gases without similar action by China and India, and these countries have not agreed to comparable steps.

² International Energy Agency, *Medium-Term Coal Market Report*, December 2012, <http://www.iea.org/publications/medium-termreports/#coal>.

³ Gallup Poll, April 2013, <http://www.gallup.com/poll/161594/americans-prioritize-economy-environment.aspx>.

U.S. greenhouse gas emissions have been declining since 2007, and fell by 1.6 percent between 2010 and 2011, the Environmental Protection Agency announced earlier this year.⁴ Required use of alternative energy technology might reduce greenhouse gas emissions further, but the new technologies make fuel and electricity more expensive, reducing economic growth and adversely affecting employment.

The message that government can create more total jobs by requiring more costly technology is seductive but empty. Yes, some Americans might be employed building the technology, but others lose jobs due to more expensive energy.

Although President Obama advocates green jobs, the Labor Department's green jobs survey for 2011, released in March 2013, found only 3.4 million such jobs, despite \$500 million in the stimulus bill for green jobs training. By the end of 2011, combined expenditures of the Energy Training Partnership, Pathways out of Poverty, and State Energy Sector Partnership green jobs stimulus programs totaled \$257.3 million. However, only 5,400 new jobs through the programs were retained at least 6 months, yielding a cost of \$47,754 per job. The Bureau of Labor Statistics has announced that it will discontinue its green jobs survey due to the sequester.

However, the White House website writes in its 4th report on the stimulus "A central piece of the ARRA is more than \$90 billion in government investment and tax incentives to lay the foundation for the clean energy economy of the future" and references "\$3 billion for Green Innovation and Job Training to invest in the science, technology, and workforce needed for a clean energy economy."⁵ The most recent quarterly report does not mention the Green Innovation and Job Training funding.⁶

The \$90 billion includes items like the loan guarantee money (some of which will be recovered), and other items like grants for weatherizing and retrofitting.

The president's climate change measures will reduce economic growth by raising energy prices. As well as reducing jobs in the mining industry – over 100 coal-fired power plants have closed since the beginning of 2010 – it will also discourage energy-intensive manufacturing.

⁴ Environmental Protection Agency, *Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2011*, April 12, 2013, <http://www.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2013-Main-Text.pdf>, p. 26.

⁵ Council of Economic Advisors, *Recovery Act Fourth Quarterly Report - The Public Investment Provisions of the Recovery Act*, 2010, <http://www.whitehouse.gov/administration/eop/cea/factsheets-reports/economic-impact-arra-4th-quarterly-report/section-4#14>.

⁶ Council of Economic Advisors, *The Economic Impact of the American Recovery And Reinvestment Act of 2009: Ninth Quarterly Report*, February 1, 2013, http://www.whitehouse.gov/sites/default/files/docs/cea_9th_arra_report_final_pdf.pdf

Manufacturers are returning to America due to low-cost energy, and the president's proposals will drive them away and discourage others. The new French Vallourec Star pipe mill in eastern Ohio is making tubes for the electric pipe industry. Other companies making similar investments are Luxembourg's Tenaris and China's Tanjin Pipe. Royal Dutch Shell is building a \$4 billion ethane cracker plant in Pennsylvania, and is planning on hiring 5,000 construction workers.

Since 2009, the German chemical company BASF has invested more than \$5.7 billion into North America, including a formic acid plant under construction in Louisiana. BASF officials say that energy prices in America are lower than in Europe, where fracking is discouraged.

Other European countries planning to invest in America due to low energy prices include Austrian steelmaker Voestalpine (an iron-ore processing plant in Texas), and South Africa-based Sasol (a natural gas to diesel conversion plant in Louisiana).

If these companies run into difficulties, their investors and shareholders will bear the losses. But when the government picks investments in risky new technology, as the president recommends, taxpayers and the federal budget lose if the projects fail. Of the 33 energy loan guarantees made since 2009 under the Energy Department's programs, 30, or over 90 percent, have shown signs of trouble, ranging from missed production goals to bankruptcy filings.

Companies which received loans or grants from the Energy Department during the Obama administration then filed for bankruptcy include Solyndra, Abound Solar, A123, Ener1, Evergreen Solar, Solar Trust of America, Energy Conversion Devices, and Beacon Power. Grant recipients Ecotality, SunPower, and Smith Electric have reported losses.

The Inspector General of the Energy Department, Gregory Friedman, found that employees of LG Chem, a battery manufacturer in Holland, Michigan, "spent time volunteering at local non-profit organizations, playing games and watching movies during regular working hours." LG Chem, meanwhile, sold batteries made in South Korea to U.S. firms rather than producing the batteries in Michigan.

Raising the cost of energy at any time is poor economic policy, but especially when economic growth is slow. After four years of economic "recovery," U.S. annualized GDP growth was 1.8 percent in the first quarter of 2013. America has 2.1 million fewer nonfarm payroll jobs than in December, 2007, the start of the recession. Now is not the time for Obama to overrule Congress and slow the economy further.

Electricity from natural gas, of which America has a 200-year supply, is less expensive than electricity produced from alternative fuels. The U.S. Energy Information Administration has estimated that the average levelized cost for natural gas-fired plants entering service in 2018 is \$67 per megawatt hour, compared to \$144 per megawatt hour

for solar-powered plants, \$87 per megawatt hour for wind power, and \$111 per megawatt hour for biomass.⁷

The bottom line: households have far higher electricity bills using alternative energy than natural gas.

This disproportionately affects low-income Americans, who spend a higher share of their income on energy, as shown in Table 1 and Figure 3. Data from the Labor Department released September 2012 show those in the lowest fifth of the income distribution spend an average of 24 percent of income on energy, compared to 10 percent of income for those in the middle fifth, and 4 percent of income for those in the top fifth.

A CBO report shows that emissions reduction programs would cause job losses in coal mining, oil and gas extraction, gas utilities, and petroleum refining. In addition, workers' wages adjusted for inflation would be lower than otherwise because of the increase in prices due to a cap and trade program. CBO concludes that some workers, therefore, would leave the labor market, because at the new lower wages they would prefer to stay home.⁸

Any reader of the CBO report would realize that it is not in the interests of American workers to embark on an emissions reduction program with our current high unemployment rate. According to CBO, "While the economy was adjusting to the emission-reduction program, a number of people would lose their jobs, and some of those people would face prolonged hardship." Workers laid off in declining industries would find it hard to get new jobs.

The CBO report points out that "In cases in which a shrinking industry was the primary employer in a community, the entire community could suffer." The tax base would dwindle and real estate would lose its value as unemployed workers moved elsewhere. The community's personal income would diminish and real estate values would fall as the jobless moved away.

That is why a carbon tax would harm the U.S. economy.

A \$15 tax per metric ton of CO₂ would result in an increase in gasoline prices of 15 cents per gallon, 75 cents per thousand cubic feet of natural gas, \$6.45 per barrel of oil, and \$28.50 per ton of coal. A \$50 CO₂ tax rate would raise the price of gasoline by 50 cents

⁷ U.S. Energy Information Administration, *Levelized Cost of New Generation Resources in the Annual Energy Outlook 2013*, January 28, 2013, http://www.eia.gov/forecasts/aeo/electricity_generation.cfm.

⁸ Congressional Budget Office, *How Policies to Reduce Greenhouse Gas Emissions Could Affect Employment*, May 5, 2010, http://www.cbo.gov/sites/default/files/cbofiles/ftpdocs/105xx/doc10564/05-05-capandtrade_brief.pdf.

per gallon, natural gas by \$2.50 per thousand cubic feet, oil by \$21.50 per barrel, and coal by \$95 per ton.⁹

The carbon tax is a favorite of many academic economists for restructuring the tax system.¹⁰ Proponents suggest that the tax be used to replace other taxes, such as the individual income tax, the corporate income tax, or a Kerry-Lieberman-style cap-and-trade system.

However, as tax practitioners know, a carbon tax is complex to set up. It requires adjustments to make sure that the tax is not unduly regressive and does not encourage consumption of imports relative to domestic production. A carbon tax without such offsets would be another add-on levy, with exemptions for friends and punishments for enemies.

A carbon tax raises the price of energy and so discourages consumption and production, as manufacturers choose to locate elsewhere.

One major problem with the carbon tax is that it is regressive. Since low-income people use more energy as a percent of their income than high-income people, a switch to a carbon tax would have to be accompanied by transfers to low-income groups.

Academics suggest that offsets be returned to taxpayers through lower income taxes, perhaps with the proceeds going chiefly to low-income households (individuals and families), which are disproportionately hurt by what is in essence an energy consumption tax. This could be done by adjustments of the income tax.

However, low-income earners are not required to file returns, and they would have to do so in order to be identified and compensated. That means extra work for them, and for the Internal Revenue Service.¹¹ And, as recent events have shown, the IRS is not prepared to take on more responsibilities with its current level of funding.

Another problem is that carbon-intensive sectors, such as coal, would be the biggest losers under the new tax. Politicians from coal-producing regions are influential in Congress and they would demand a share of revenues.

Finally, a carbon tax would raise the prices of energy-intensive goods relative to imports from countries without carbon taxes. So Americans would prefer to buy imports, and American firms would lose business. Proponents of the tax suggest

⁹ Ramseur, Jonathan L., Jane A. Leggett, and Molly F. Sherlock, Carbon Tax: Deficit Reduction and Other Considerations, Congressional Research Service, September 17, 2012, p. 11, <http://www.fas.org/sgp/crs/misc/R42731.pdf>.

¹⁰ Carbon Tax Center, "Supporters," March 24, 2012, <http://www.carbontax.org/who-supports/>.

¹¹ Dinan, Terry, *Offsetting a Carbon Tax's Costs on Low-Income Households*, Congressional Budget Office Working Paper Series, November 2012, <http://www.cbo.gov/sites/default/files/cbofiles/attachments/11-13LowIncomeOptions.pdf>.

putting tariffs on imports in proportion to their carbon content so that American companies will not be at a disadvantage. But the precise quantities are complex to calculate, and such tariffs might be illegal under World Trade Organization regulations.

So for a carbon tax to make our tax system more efficient, its revenues would have to be used to offset other taxes in the economy. Its negative effects on low-income Americans and on energy-intensive regions would have to be ameliorated. Some border adjustment would have to be made so that domestic goods were not disfavored.

But the legislative process makes it difficult to craft a carbon tax with these attributes. It is more likely that any tax on carbon would be an additional tax. It would hurt the poor and raise domestic prices relative to prices of imports.

To reduce global greenhouse gas emissions in a less costly manner, America could assist China and India develop shale gas from hydrofracturing and build natural-gas fired plants to reduce their reliance on coal. Or, America could ship coal to China, because U.S. coal burns cleaner than Chinese coal. The majority of China's coal (54 percent) is bituminous, which has a carbon content ranging from 45 to 86 percent.¹² On the other hand, 47 percent of the U.S.'s coal, a plurality, is subbituminous, which contains a carbon content of only 35 to 45 percent.¹³

Congress could fund research into geoengineering measures. More needs to be done to study solar radiation management, which potentially diminishes the warmth caused by the sun's rays. This could be done by injecting fine sulfur particles or other reflective aerosols into the upper atmosphere to reflect incoming radiation, or spraying clouds with salt water to increase their reflectance.

Clouds seeded with salt water would be thicker, and would reflect more heat back toward the sun, away from Earth. Cooling effects – as well as other, adverse consequences – have been observed after volcanic eruptions.

Another avenue of research is to explore making the surface of the planet more reflective, by brightening structures and painting roofs white, as well as increasing the reflectivity of deserts and oceans.

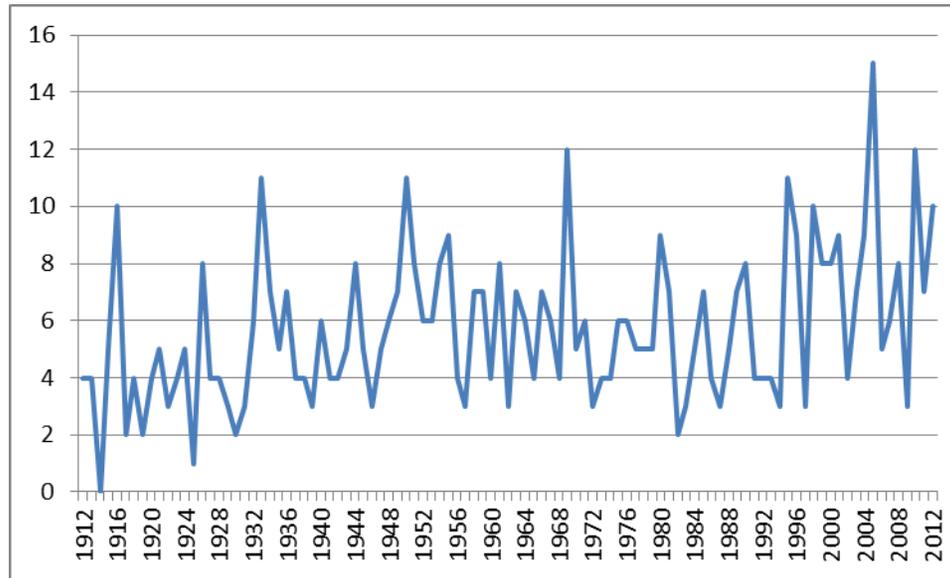
Such measures would cost a fraction of what cap-and-trade regulations and therefore do less damage to the economy.

Thank you for allowing me to testify today. I would be glad to answer any questions.

¹² U.S. Energy Information Administration, *International Energy Outlook 2011*, Table 10, <http://www.eia.gov/forecasts/ieo/table10.cfm>.

¹³ U.S. Energy Information Administration, *Subbituminous and bituminous coal dominate U.S. coal production*, 2011, <http://www.eia.gov/todayinenergy/detail.cfm?id=2670/>.

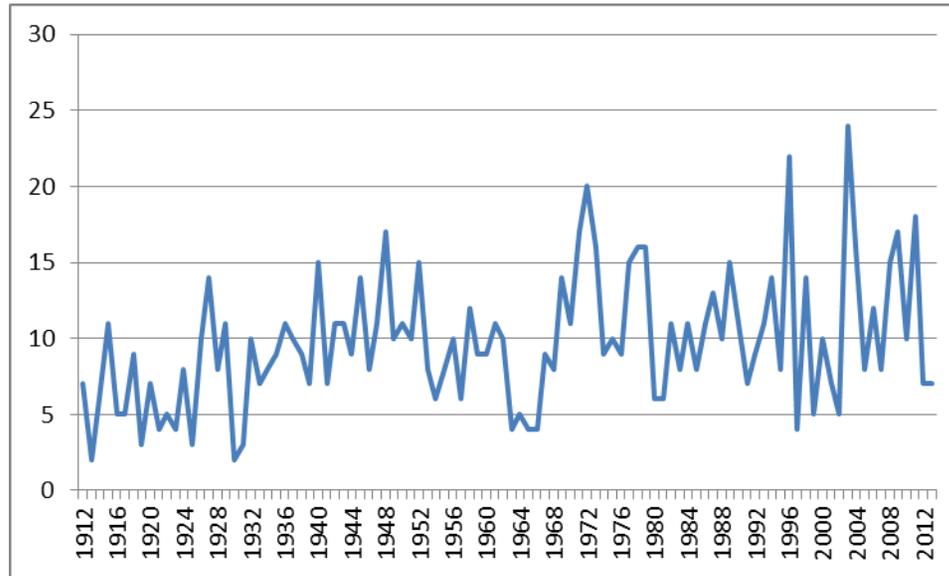
Figure 1: Atlantic Basin hurricanes by year, 1851-2012
(number)



Note: Hurricanes using Saffir-Simpson Hurricane Scale 1 to 5.

Source: National Oceanic & Atmospheric Administration, Atlantic Oceanographic & Meteorological Laboratory, Hurricane Research Division, July 2, 2013, <http://www.aoml.noaa.gov/hrd/tcfaq/E11.html>.

Figure 2: Number of floods per year, 1912-2012



Source: National Oceanic and Atmospheric Administration, *MARFC Flood Events Yearly Summary 1687-2013*, 2013, <http://www.erh.noaa.gov/marfc/Rivers/FloodClimo/1687-2013FloodSummaries/1687-2013-Year-Decade-Total-Table.pdf>.

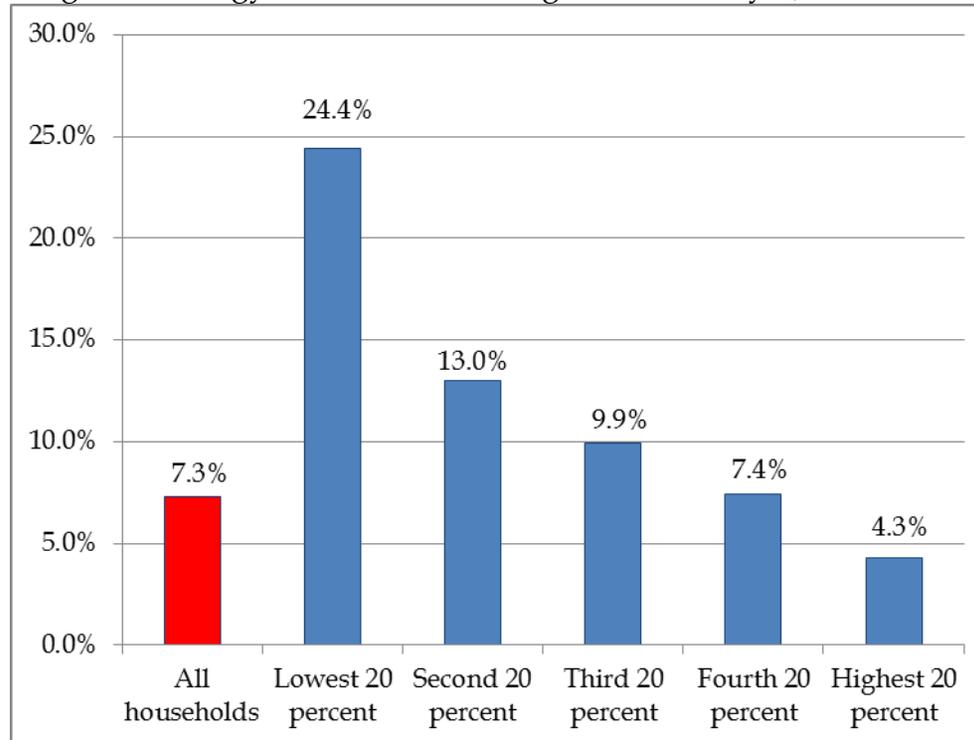
Table 1: Energy Costs as a Share of Income by Income Quintile, 2011

	All households	Lowest 20 percent	Second 20 percent	Third 20 percent	Fourth 20 percent	Highest 20 percent
Income after taxes	\$61,673	\$10,074	\$27,230	\$45,563	\$72,169	\$153,326
Natural gas	\$420	\$243	\$338	\$386	\$472	\$659
<i>Share of income</i>	0.7%	2.4%	1.2%	0.8%	0.7%	0.4%
Electricity	\$1,423	\$985	\$1,234	\$1,429	\$1,603	\$1,863
<i>Share of income</i>	2.3%	9.8%	4.5%	3.1%	2.2%	1.2%
Gasoline and motor oil	\$2,655	\$1,227	\$1,981	\$2,694	\$3,295	\$4,073
<i>Share of income</i>	4.3%	12.2%	7.3%	5.9%	4.6%	2.7%
Sum of natural gas, electricity, and gasoline and motor oil	\$4,498	\$2,455	\$3,553	\$4,509	\$5,370	\$6,595
<i>Share of income</i>	7.3%	24.4%	13.0%	9.9%	7.4%	4.3%

Note: Not all percentages sum because of rounding.

Source: Department of Labor, Bureau of Labor Statistics, *Consumer Expenditure Survey, 2011*, September 25, 2012, and Manhattan Institute calculations.

Figure 3: Energy Costs as a Percentage of Income by Quintile, 2011



Source: Department of Labor, Bureau of Labor Statistics, *Consumer Expenditure Survey, 2011*, September 25, 2012, and Manhattan Institute calculations.