



## Myths and Facts Surrounding Climate Change Legislation

**Question: *Is climate change real? Even if climate change is real, does clean energy legislation do anything to stop it?***

### **Myth**

There is a vigorous debate within the scientific community about climate change: whether it's real and what causes it.

### **Facts**

Worldwide, peer-reviewed scientific consensus indicates that global warming is occurring planet-wide and human activity is the clear and primary contributor. Furthermore, climate change is already creating visible, negative impacts in the United States. <sup>i</sup>

- After 20 years of study, the United Nations Intergovernmental Panel on Climate Change released its fourth unanimous report in 2007, developed with the input of hundreds of world-renowned scientists. They concluded that the world's climate system is unequivocally warming, with the observed increases in global temperatures primarily the result of human greenhouse gas (GHG) concentrations (higher than 90 percent likelihood); the probability that this increase is caused by natural climatic processes alone is less than 5 percent. <sup>ii</sup>
- The United States' Global Change research program issued a report stating: "The global warming observed over the past 50 years is due primarily to human-induced emissions of heat-trapping gases. These emissions come mainly from the burning of fossil fuels (coal, oil and gas), with important contributions from the clearing of forests, agricultural practices and other activities."<sup>iii</sup>
- That same report finds that climate-related changes are already observed in the United States and its coastal waters. These impacts include increases in heavy downpours, rising temperatures and sea level, rapidly retreating glaciers, thawing permafrost, lengthening growing seasons, lengthening ice-free seasons in the ocean and on lakes and rivers, earlier snowmelt, and alterations in river flows. Finally, the report concludes, "The projected climate changes are likely to increasingly challenge U.S. capacity to efficiently produce food, feed, fuel and livestock products."<sup>iv</sup>
- Further evidence of the federal government's acknowledgement and commitment to this issue is the Central Intelligence Agency's (CIA) new Center on Climate Change and National Security, a small unit led by senior specialists from its directorates of intelligence, science and technology. "Decision makers need information and analysis on the effects climate change can have on security," CIA Director Leon Panetta said in a statement. "The CIA is well positioned to deliver that intelligence."<sup>v</sup>

***Question: Can changes in agricultural practices really have an impact on GHG emissions?***

**Myth**

Agriculture has little or no impact on slowing or mitigating climate change regardless of farming practices.

**Facts**

Agriculture has great potential to help sequester carbon, reduce GHG emissions and produce renewable, low carbon energy—while offsetting harmful pollutants in our air, water and soils. Studies estimate that agriculture and forestry are able to sequester or eliminate approximately 15 percent to 20 percent of total U.S. GHG emissions. With improved agricultural and land management practices, farmers can significantly increase the amount of carbon dioxide that is pulled from the atmosphere by vegetation and left sequestered in the soil—and at the same time, enhance agricultural productivity, increase food security and restore degraded lands. These very practices, which could qualify as offsets under clean energy legislation, will pay farmers and ranchers to adopt environmentally preferred practices and help keep farms financially viable.

- In its latest Climate Action Report to the UN Framework Convention on Climate Change, the United States lists four programs coordinated by the U.S. Department of Agriculture (USDA) and one implemented by the Environmental Protection Agency (EPA) in cooperation with USDA, which are helping agriculture address GHG emissions. These include the Environmental Quality Incentives Program (EQIP), Conservation Reserve Program, Conservation Security Program, Renewable Energy Systems and Energy Efficiency Improvement Program and EPA's AgStar program. The report estimates the overall mitigation impact of these policies and measures will reach 35.1 metric tons of carbon dioxide equivalents by 2020, with a major contribution from EQIP. Most of these policies and measures have been designed to promote natural resource conservation and sustainable land management with GHG mitigation as a co-benefit.<sup>vi</sup>
- Carbon stocks in agricultural soils are currently increasing by 12 million metric tons (MMT) of carbon annually. If farmers widely adopt the best management techniques now available, an estimated 70 MMT to 220 MMT of carbon could be stored in U.S. agricultural soils annually. Together with attainable nitrous oxide and methane reductions, these mitigation options represent 5 percent to 14 percent of total U.S. GHG emissions. The relevant management technologies and practices can be deployed quickly and at low cost compared to many other GHG-reduction options. Changes in agricultural practices coupled with the foresting of marginal agricultural lands could offset up to one-fifth of current U.S. GHG emissions, while at the same time creating potential new sources of farming income. In addition, the nation could reduce emissions by 10 percent to 25 percent by replacing fossil fuels with biofuels made from agricultural crops.<sup>vii</sup>

***Question: Shouldn't the United States wait until China and India act, since United States action alone won't have a significant impact on climate change?***

**Myth**

With climate legislation, the United States will take unilateral action far ahead of other countries, including developing nations like China and India. The best option for the United States is to wait until other countries take action.

**Facts**

A large majority of the world's industrial countries have already committed to reducing their GHG emissions. Some have even begun taking aggressive actions toward this goal. The European Union, which includes many of the world's largest industrial countries, is committed to tackling this problem, as

are Japan and Australia. In addition, China and other developing countries have indicated they are willing to be part of an international agreement on reducing GHG emissions worldwide.

- While China has recently become the largest emitter of GHG, the United States is the world's second-largest. In addition, the United States is responsible for a significant portion of the existing concentration of GHG emissions through past emissions.
- The United States and China signed a Memorandum of Understanding on climate change, energy and the environment in July 2009, with the Obama administration looking to cooperate with China on clean energy policy as it considers action at the United Nations Framework Convention on Climate Change in Copenhagen in December 2009.<sup>viii</sup>
- If the largest economy in the world—the United States—refuses to take action, it provides little incentive for developing countries to act in a major way. While American action cannot guarantee a global accord on this issue, American *inaction* on addressing climate change drastically decreases the chances of substantial global progress.
- While the United States cannot address this problem alone, as the world's largest economy and world's second-largest carbon dioxide emitter<sup>ix</sup>, we must do our part. The House-passed bill will reduce U.S. carbon emissions by 17 percent by 2020, and 83 percent by 2050, from 2005 levels. The current Senate bill proposes slightly more stringent reductions of 20 percent by 2020.<sup>x</sup>

***Question: Won't it cost more to address climate change than it is worth? Compared to other countries, doesn't U.S. agriculture generally benefit from climate change?***

**Myth**

Agriculture has more to gain from increased carbon dioxide than to lose from increased GHG and resulting climate change. Even if climate change occurs, agriculture will be able to adapt as necessary with little impact.

**Facts**

Increasingly, studies conclude that despite U.S. agriculture's track record of skillful adaptation to change and challenges, including the use of technology to improve crop varieties with higher yields and resistance to pests and weather stresses, U.S agriculture will be negatively affected by climate change. The choices we make and the actions we take now will determine the severity of climate change's impacts on agriculture in the future.<sup>xi</sup>

- The 2009 report, *Global Climate Change Impacts in the United States*, indicates that climate change increasingly will challenge crop and livestock production. "Many crops show positive responses to elevated carbon dioxide and low levels of warming, but higher levels of warming often negatively affect growth and yields. Increased pests, water stress, diseases, and weather extremes will pose adaptation challenges for crop and livestock production."<sup>xii</sup> Some of these challenges include:
  - More freeze-thaw cycles that stress livestock health and rural road infrastructure;
  - More day-to-day and year-to-year temperature variability that can damage crops, delay planting or plant development due to late freezes and ultimately impact crop yields;
  - Milder winters with the potential to increase pest populations and shift currently uncommon pests northward;
  - Faster plant growth, including weed growth and decreased sensitivity to herbicides.
- Grain crops are vulnerable because the grain-filling period of wheat and other small grains shortens dramatically with rising temperatures. Analysis of crop responses suggests that even

moderate increases in temperature will decrease yields of corn, wheat, sorghum, bean, rice, cotton and peanut crops.<sup>xiii</sup>

- Even though less developed countries in the tropics and subtropics are generally more vulnerable to climate change than the United States, the world as a whole is expected to experience a decline in agricultural productivity. U.S. agriculture in the Southeast and the Southwestern plains will suffer the most impact, with predicted declines of 25 percent to 35 percent in agricultural productivity.<sup>xiv</sup>
- Each plant variety has its unique optimal temperature for growth, and despite optimal carbon dioxide levels, growth will drop off as temperature rises. Even though higher carbon dioxide levels generally cause plants to grow larger, and may make them more efficient in their use of water, for some crops this may not necessarily be a benefit because they often become less nutritious as a result, with reduced nitrogen and protein content.<sup>xv</sup>
- Climate change is likely to lead to a northern migration of weeds and pests. Many weeds respond more positively to increasing carbon dioxide than do most cash crops, particularly C3 “invasive” weeds. Recent research also suggests that glyphosate, the most widely used herbicide in the United States, loses its efficacy on weeds grown at the increased carbon dioxide levels likely in the coming decades.<sup>xvi</sup>
- The marketable yield of many horticultural crops (e.g., vegetables and fruits) is very likely to be more sensitive to climate change than grain and oilseed crops. Disease pressure on crops and domestic animals likely will increase with earlier springs and warmer winters, which will allow proliferation and higher survival rates of pathogens and parasites. Regional variation in warming and changes in rainfall also will affect spatial and temporal distribution of disease.<sup>xvii</sup>

***Question: Isn't climate change something we can deal with later? Shouldn't we deal with more urgent problems like the economy and health care issues?***

**Myth**

Stopping clean energy legislation means we don't have to deal with energy and climate change issues.

**Facts**

If clean energy legislation is not passed to address climate change, regulations most likely will be triggered to cap industry emissions. Studies indicate that EPA-led regulations would create far greater costs to agriculture with much less opportunity for new income.

- The Supreme Court ruled in 2007's *Massachusetts vs. the Environmental Protection Agency* that GHG pose a human health hazard and the EPA MUST regulate activities that are a significant cause of GHG emissions under the Clean Air Act. In response to this case, the Bush administration found that human activities—namely the driving of automobiles—are a significant cause of GHG emissions. The Obama administration confirmed this finding and EPA took the first steps toward carrying out that ruling, opening the door to the regulation. Once that precedent is set, there will be a direct path to regulating GHG emissions from other sources, which either the EPA can do on its own or will be compelled to do by citizen lawsuits. American Farm Bureau Federation recognized the possibility of unchecked regulation last year when they launched a campaign around the “cow tax.” While it's unlikely the EPA would regulate smaller livestock and dairy operations, it is clear that regulation is a serious possibility with widespread impacts.<sup>xviii</sup>
- Both President Obama and EPA Administrator Jackson have indicated that they prefer a legislative solution, given the extent of the issue and since existing laws are not tailored to this

specific problem. In addition, virtually every agricultural organization and producer in the country also would prefer a legislative solution to being regulated by EPA. If Congress fails to act on GHG, EPA MUST and WILL take regulatory action under the current mandate. Unfortunately, refusing to be part of the legislative process leaves agriculture exposed to regulation without the opportunities to mitigate cost and create income.<sup>xix</sup>

- According to the November 2009 University of Tennessee's *Analysis of the Implications of Climate and Energy Legislation to the Agricultural Sector*.<sup>xx</sup>
  - If carbon emissions are regulated by EPA, net farm income is projected to fall below baseline projections;
  - Net returns for virtually all major crops are positive under a properly constructed cap-and-trade program;
  - EPA regulation alone could subject agriculture to higher input costs with no opportunity to be compensated for the GHG reduction services the sector provides.

**Question: As a result of this legislation, won't American industry cease to be internationally competitive and flee the United States?**

**Myth**

We will lose millions of jobs to foreign countries as a result of this legislation.

**Facts**

Prominent American companies and labor organizations have come out in support of clean energy legislation.

- General Electric, Ford, Siemens, Hewlett-Packard, Johnson & Johnson and John Deere, for example, all support climate change legislation efforts. "In the past, the United States has proven that we have the will, the capabilities and the courage to invest in innovation—even in difficult times," said Jeff Immelt, Chairman and CEO of General Electric. "Today, cap-and-trade legislation is a crucial component in fueling the bold clean energy investments necessary to catapult the United States again to preeminence in global energy and environmental policy, strengthen the country's international competitiveness, and create millions of rewarding new American jobs."<sup>xxi</sup>
- Utility and power companies such as Duke Energy, ConocoPhillips, Shell, BP America and PG&E also support climate change legislation. These companies view climate change legislation as an opportunity.
- Labor organizations like the Communications Workers of America, United Steel Workers, Service Employees International Union, Laborers' International Union of North America, Utility Workers Union of America, and the United Federation of Teachers and others are working together as the Blue Green Alliance to pass comprehensive clean energy and climate change legislation, and more.<sup>xxii</sup>
- Proposed legislation includes provisions to protect American companies from adverse effects and insure American competitiveness, including:
  - A border tax adjustment to increase the price of foreign-made goods from countries without a climate change commitment;
  - Provisions to reduce the compliance costs for energy intensive industries, such as the fertilizer and steel industries.

- Proposed legislation creates a whole new energy industry in the United States, resulting in new jobs:
  - A new workforce will be needed to create new low-carbon energy sources and new low-carbon power technologies, etc.;
  - This new U.S.-based energy industry will help us break free of our addiction to foreign oil and create a new energy independent America.

***Question: Won't clean energy legislation have a disproportionately negative impact on agriculture and rural Americans?***

**Myth**

The proposed energy bill will radically increase fuel and fertilizer prices for farmers. The proposed bill will cost farmers more than they could possibly earn from new market opportunities through renewable energy and selling carbon credits in an offset market.

**Facts**

The House bill built in numerous mechanisms to lower the cost of compliance and thereby lower the cost to the whole economy of the program including agriculture. In fact, the fertilizer industry specifically negotiated provisions into the House bill to protect their industry from the impact of the bill on their costs until 2020. This provision not only helps them but obviously has an impact for non-livestock agriculture.

Numerous academic economic analysis studies conducted since the passage of the House bill generally indicate a net benefit for agriculture if recognized inputs, outputs and income opportunities generated from the legislation are included. They include the following:

- In November 2009, the University of Tennessee's *Analysis of the Implications of Climate and Energy Legislation to the Agricultural Sector*<sup>xxiii</sup> found that under a properly constructed cap-and-trade program:
  - Net returns to agriculture are projected to be positive and exceed baseline projections for eight of nine crops analyzed;
  - At projected carbon prices of up to \$27 per metric ton of carbon dioxide, afforestation of cropland is not projected to occur;
  - Cap-and-trade does not result in major shifts in commodity crop land use;
  - Demand for bioenergy feedstocks is projected to cause significant increases in hay and dedicated energy crop acreage via pasture conversion;
  - Crop and beef prices are not disrupted; and,
  - Biomass feedstock production yields significant direct and indirect reductions in GHG emissions.
- The University of Missouri conducted a 2009 analysis of production cost impacts from potentially higher energy costs that may result from passage of the House-passed bill. The projected production costs for the average Missouri farm producing:
  - Dryland corn would increase 3.2 percent by 2020, and by 3.8 percent in 2030;
  - Irrigated corn would increase 3.5 percent by 2020, and by 4.1 percent in 2030;
  - Soybeans would increase 1.6 percent by 2020, and by 2 percent in 2030; and,
  - Soft red wheat would increase 4.1 percent by 2020, and by 2.8 percent in 2030.

While these represent increased production costs, the increases are modest; especially considering no analysis was done of benefits to agriculture resulting from offsets or larger renewable energy market opportunities.<sup>xxiv</sup>

- The Iowa State University 2009 analysis of the impact of the bill on the average Iowa corn and soybean farm projects an increased production cost of \$4.52/acre by 2020 as a result of legislation, or roughly a 1.5 percent increase. The analysis concludes: “[I]f the United States adopts a cap-and-trade policy to combat climate change, the negative impacts on agriculture will likely be relatively small, particularly if agricultural emissions remain uncapped.” Iowa State took its analysis one step further and estimated that producers could make on average \$8/acre for switching to no-till alone and selling the resulting carbon benefits in the offset market. Add in the billions of dollars of revenue as a result of biomass, biogas, wind turbines and solar cells, and the rural/agricultural economic impact looks better still.<sup>xxv</sup>

### **Myth**

It will cost U.S. agriculture less in both the short and long run if the United States does not pass clean energy legislation.

### **Facts**

Doing nothing about climate change means the United States will not be addressing our dependency on foreign and fossil fuels. Any cost inherent in legislation pales in comparison to the costs of doing nothing. At the same time, clean energy legislation provides income opportunities for agriculture through the sale of offsets, and the development and production of renewable energy sources.

- Although the agriculture, forestry and fisheries industries represent only about 3.5 percent of total U.S. Gross Domestic Product, crop agriculture and forestry could account for somewhere between 70 percent to 85 percent of the projected economic impacts from climate change.<sup>xxvi</sup>
- Equally as important is recognizing that doing nothing will result in higher costs. Pursuant to a Supreme Court case, the EPA must begin to examine and will likely begin to regulate carbon emitting industries. While agriculture is not likely to be directly regulated, the price of many inputs will by necessity go up. Unlike comprehensive legislation, however, EPA regulation is not likely to have cost containment measures, nor is it likely that regulation will have a USDA-run offset market creating income opportunities for producers. Waiting for regulation will result in at least as many cost increases without generating nearly any of the income opportunities.

### **Myth**

Rural power comes from coal-fired plants and this legislation unfairly taxes rural electricity and rural economies.

### **Facts**

Although many utility plants that power rural America use coal, the bill takes this into account and contains provisions to lower compliance and transition costs, provides funding for research and creates opportunities to generate renewable energy and earn income from conservation practices.

- In the House debate, Chairman Peterson was able to lower the compliance cost that rural electric coops face. As a result, the National Rural Electric Cooperative Association praised House leadership for addressing fairness and said while the bill needed more work, it “would not stand in the way of passage” of the House bill.<sup>xxvii</sup>
- The House bill was designed with coal in mind and creates transition timelines and authorizes research on how coal can be used cleaner. Former House sub-committee chairman over energy, Rep. Rick Boucher from the coal-mining state of Virginia, had this to say about the bill: “I support the bill. Approximately 80 percent of the electricity in my district is coal generated, and coal production is one of our region’s major industries and major employers. Not surprisingly, my focus

in the shaping of the bill in the Energy and Commerce Committee was to keep electricity rates affordable and to enable utilities to continue using coal which accounts for 51 percent of electricity generation nationwide. Both of these goals have been achieved.”<sup>xxviii</sup>

- Rather than treat rural America unfairly, legislation can act as a vehicle to revitalize our rural communities. With opportunities to generate renewable energy and earn income from conservation practices, producers could diversify their income streams dramatically. People concerned about the impact on rural utility rates should be engaged in ensuring the Senate bill addresses these concerns too.

### **Myth**

Clean Energy legislation doesn't present any *real* economic opportunities for agriculture.

### **Facts**

Agriculture and forestry have the most opportunities to gain of any sectors in the economy in Clean Energy legislation.

The energy and climate change bill creates opportunities for producers to drastically increase their ability to generate electricity:

- If passed, the bill will stimulate the deployment of wind turbines and solar cells on the landscape—from which producers can earn income.
- Biomass from agricultural and forestry waste and residue, and biogas from methane digesters, will all benefit under this bill, allowing producers to earn income from waste products.
- Producers have a chance to grow dedicated renewable crops as a way to replace coal in generating electricity and as alternative liquid fuels to foreign-produced oil. These markets represent billions of dollars per year as agriculture and forestry rise to the challenge of a new green economy. Supporters include the Renewable Fuels Association<sup>xxix</sup> and 25 x '25 Alliance, which states, “It is critically important for the agriculture and forestry sectors to become engaged in the carbon/climate change policy discussions that are occurring in and outside of government and to proactively advocate for the enabling policies that will be necessary for our sectors to deliver and be compensated for the carbon reduction services we can and will provide.”<sup>xxx</sup>
- The bill will create an offset market in which farmers and ranchers will be able to sell credits earned from conservation and stewardship practices that sequester or eliminate carbon. Currently, the voluntary markets available to producers trade carbon at \$1 to \$2 per ton, but the EPA predicts that a mandatory system will be selling carbon at \$15 to \$20 per ton, with a total domestic market of 1 billion tons. While agriculture won't be the only sector generating offsets, it will be a major player. Even at only a quarter of the market, agriculture stands to gain over \$3 billion annually.<sup>xxxi</sup>
- A new economic study conducted by the University of Tennessee's Bio-Based Energy Analysis Group has determined that there are significant market opportunities for agriculture if Congress enacts a national renewable energy standard (RES) policy. RES policies are expected to create a large new market for biomass from the agricultural and forestry sectors, and as a result, to have a positive effect on farm income, according to the study. Under a 20 percent RES policy in 2025 (as was passed in the House bill), the study projected that increases in gross receipts range from \$9,421 per farm in Florida; \$10,517 per farm in Colorado; \$14,376 per farm in North Carolina; and \$43,229 per farm in Kansas. “We expect to see a significant increase in farm revenue if an RES policy is implemented,” said study co-author Dr. Daniel De La Torre Ugarte, Professor at the University of Tennessee Institute of Agriculture.<sup>xxxii</sup>



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