

Recharging America's Economy

Clean Energy Investments,
Global Warming Solutions,
and a Prosperous Economy



Technological change has always been the engine that has propelled America's economy forward. Today, bold changes in our energy economy can put America back on the path to progress. Investing in clean energy alternatives can recharge America's economy and lay the foundation for a stronger economic future. It will create and protect jobs here at home, save families and businesses money, and make America more energy independent. Clean energy will also provide a healthier, safer future for our children because it is the most effective solution to the threat of global warming.

America must lead the clean energy revolution. We can not afford to take a back seat. No nation in the world can outcompete America's industry and entrepreneurs when we are determined to lead. We must reinvigorate our efforts to make sure that the world's solutions to global warming carry the "made in America" label.

The scale of the global marketplace for energy technologies is as large as the computer and IT industry that creates 35 million jobs globally.

Economic Opportunity

In 2006, the renewable energy and energy efficiency industries generated **8.5 million jobs** and nearly **\$970 billion** revenue in America¹. The jobs that benefit from the clean energy industry touch every aspect of America's economy. As our transportation, buildings, and energy infrastructure are retooled to be cleaner and more efficient, work in these and related industries will increase. According to the American Solar Energy Society, 98% of renewable energy and energy efficiency jobs are jobs workers already know how to do – from manufacturing and engineering to truck driving and accounting.

A group of entrepreneurs and investors responsible for starting 800 businesses and creating 400,000 jobs wrote to Congress saying that the legislation recently considered by the Senate would "stimulate investment in the enormously promising clean technology sector."

Global Warming Leadership

Reducing our dependency on oil and coal by shifting to clean energy technologies provides the best long-term solution. Fossil fuels account for 95% of the U.S. carbon dioxide pollution that causes global warming. However, technology investments and innovation will not happen fast enough to stimulate our economy and protect it from the worst damages of global warming unless Congress takes action now. The carbon dioxide pollution we release now will remain there for decades, and even centuries, creating almost irreversible impacts. Leadership now is important to safeguard our children's future.



The Senate climate bill would increase federal investments to spur manufacturing and installation of clean energy technologies 10-fold.

Clean Energy Technology

Enacting comprehensive climate legislation will spur clean energy investments and revolutionize our energy economy. Leading proposals in the House and Senate deploy an effective approach called "cap and trade" that will make "clean" more profitable than pollution. American engineers, entrepreneurs and investors will drive innovation throughout America's economy. The cap-and-trade approach will reward innovators who reduce pollution and install clean and efficient technologies. As the nations' biggest polluters invest money in new technologies to reduce greenhouse gas emissions, those investments will create new jobs and economic opportunities. The legislation recently considered by the Senate would increase renewable electricity 110% by 2020.

DEPENDENCY ON FOSSIL FUELS DRAINS OUR ECONOMY

Our current dependency on oil and other fossil fuels is putting the squeeze on American families and damaging our economy. The squeeze will get worse until we diversify our energy supplies with bold investments in energy efficiency and renewable energy. Comprehensive climate legislation will diversify our fuel supply, and would cut oil imports as much as 40-60%.

In the summer of 2005, a majority of U.S. Senators voted to defeat a bill that would have established a cap and trade program to reduce pollution and invest in clean energy technologies. Some Senators argued that the bill was unacceptable because it risked increasing gasoline prices. That logic was deeply flawed. The era of cheap oil is over. In the two years since the bill was defeated, gasoline prices have increased more than \$1.30 per gallon, and oil companies are enjoying profits that have shattered all records.

The pain for consumers from our failed energy policies hasn't stopped at the gas pump. Electric companies have raised rates by an average of 26% in the past five years, and the price of coal for electricity has increased 40% in the past 5 yearsⁱⁱ.

Global Warming Threatens America's Economy

Our current dependency on fossil fuels also threatens our economy by fueling global warming. This is endangering water supplies, public health, agriculture, infrastructure, and our natural environment. The poor will be the most vulnerable.

Former Federal Reserve Chairman Paul Volcker: "If you don't take action on climate change, you can be sure that our economies will go down the drain in the next 30 years. What may happen to the dollar, and what may happen to growth in China or whatever, will pale into insignificance compared with the question of what happens to this planet over the next 30 or 40 years if no action is taken."

Former World Bank chief economist Sir Nicholas Stern completed the most comprehensive economic review of climate change to date, concluding that global warming could reduce the world's economic output by between 5 to 20 percent if left unchecked.

Global Warming Threatens Infrastructure

The global estimates of damages from climate change sometime disguise the seriousness of the economic threat to communities throughout our nation. A recent report by the National Academy of Sciences detailed the threat to our transportation infrastructure from rising sea levels, with some of America's major ports and airports, and thousands of miles highways and rail lines being inundatedⁱⁱⁱ.

The insurance industry has already begun to flee areas experiencing increasing storm damage, such as along the Florida and Gulf coasts. Some of the world's largest insurance companies have been calling for Congress to take action on global warming.



Our dependency on foreign oil is draining \$50 million dollars every hour from American wallets and stalling our economy.

Global Warming Threatens Local Economies

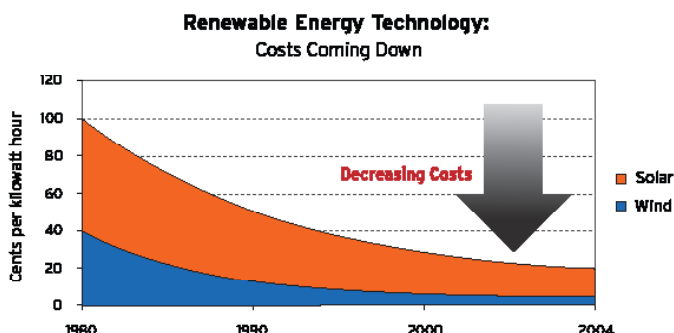
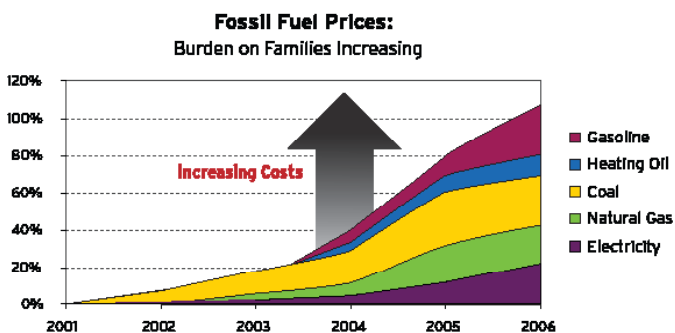
Global warming poses an unprecedented threat to our natural environment. Communities whose economies depend on outdoor recreation are vulnerable to the damages climate change can bring to wildlife and our natural resources. Hiking, wildlife viewing, fishing and other outdoor recreation contributes a total of \$730 billion annually to the U.S. economy and supports 6.5 million jobs (1 in 20 U.S. jobs).



AFL-CIO President John Sweeney has warned that global warming could represent "economic damage on the scale of the Great Depression."

AMERICA'S PATH TO PROGRESS

While the prices of fossil fuel energy go up and up, huge advances are occurring to bring down the costs of alternative, renewable energy sources. The potential for technology advances in this new energy frontier is almost limitless. Consider what we have done with computers. The first computer forty years ago took up an entire building and cost \$11 million. Today, the computers in our cell phones are a million times less expensive, a million times smaller and a thousand times more powerful^{iv}.



As with computers and other high tech sectors, innovation in renewable energy technology has been reducing costs dramatically. If we could capture just one ten-thousandth of the energy in sunlight that falls on Earth, we could meet 100 percent of the world's energy needs with a clean, renewable and economically stable resource.

Opportunities Now

America doesn't have to wait for new technologies to make significant progress today in cutting pollution. In the near term, significant opportunity exists throughout the economy to promptly reduce greenhouse gas emissions through energy efficiency improvements using off-the-shelf technologies.

Companies that have voluntarily set goals for reducing emissions have been able to achieve those goals consistently ahead of schedule and at a corporate profit. For example, BP, one of the world's largest energy companies, met its own goals for reducing global warming pollution nine years ahead of schedule, reducing emissions by 18 percent and saving \$650 million in energy costs over three years (after an initial investment of \$20 million).

Comprehensive climate legislation recently considered by the Senate would provide billions of dollars in incentives for farmers to sequester carbon.

Cap-and-Trade Works

Cap-and-trade was pioneered in the United States under President George H.W. Bush as part of the 1990 Clean Air Act program to combat acid rain. This approach combines the power of free market incentives with clear, enforceable goals to reduce pollution. It has been highly successful, reducing sulfur dioxide emissions from power plants by 40% in a decade while driving innovative approaches that found inexpensive ways to reduce pollution.

Under a cap-and-trade system, the total amount of pollution from large emitters, such as power plants and oil refineries, is reduced to meet the overall pollution reduction goal (the "cap") set by the government. Every company has the flexibility to choose the most cost efficient ways to reduce pollution, and businesses can trade (buy or sell) emissions permits from each other or from the government to cover each ton of remaining pollution they emit. This creates a virtual stock market for pollution reductions where the most profitable means of reducing pollution will win out.

Delay Costs More in the Long Run

When it comes to taking action to redirect our energy economy and reduce global warming pollution, a slow start may mean a crash finish. Like buying insurance or investing for retirement, steady investments now are a prudent economic approach. If we start cutting pollution levels by the year 2012, we can cut pollution gradually by about 2% every year. If we delay even two years, we will need to cut pollution at twice the rate (around 4% a year) just to keep pollution below the same cumulative levels over the next decade.

The U.S. Climate Action Partnership, a coalition comprising more than two dozen of America's biggest companies, has called on Congress to swiftly enact a cap-and-trade plan, warning that "any delay in action to control emissions increases the risk of unavoidable consequences that could necessitate even steeper reductions in the future."^v

HOW MUCH WILL IT COST?

Investing in new, cleaner technologies is not free. Companies will need to spend billions of dollars on the technologies to transform our energy economy. Fortunately, as we reduce our dependency on oil and coal, we can also save money on energy bills to help offset some of the costs of investing in clean, efficient alternatives. In fact, according to a detailed technology analysis by McKinsey & Company on behalf of several major companies and other sponsors, U.S. emissions can be reduced by 20-30% below current levels by the year 2030 through investments that, in their entirety, save as much money through lower energy bills as they cost.^{vi}

Innovation can reduce costs far below the levels predicted by economic models. The “cap-and-trade” program pioneered under the clean air act ended up costing as little as 1/10th of what some of the forecasts estimated prior to the legislation taking effect.^{vii}

Economic Growth

Most economic analyses of climate legislation recently considered by the Senate conclude that we can afford to fund huge new investments in clean energy technologies while strongly growing our overall economy. The Department of Energy predicts that America’s economy will grow by 74% by the year 2030 if the legislation were enacted (about the same as forecasts without the bill).^{viii} The Department of Energy’s conclusion that the economy can grow strongly with a climate bill are consistent with all credible modeling efforts to date. Claims that climate legislation will disrupt our economy are generally based on biased studies funded by some of the nation’s biggest polluters.

Wall Street Journal: “The leading congressional proposal to control greenhouse-gas emissions could be implemented without significantly harming the nation’s economic growth over the next two decades, an analysis published by the Bush administration found.”

Home Utility Bills

Climate legislation recently considered by the Senate would provide \$1.7 trillion to consumers and small businesses through 2050 to protect them from increased energy costs. This is the equivalent to \$15 per month for each household and small business (although the precise distribution of these consumer funds is not specified in the bill). In contrast, the legislation would only increase household utility bills by about \$2.50 per month by the year 2020, according to recent analysis by the U.S. Department of Energy. Since this funding comes from payments made by industry as part of the cap-and-trade system, it does not come at the expense of other federal programs, and it does not increase the federal deficit.

Also, overall energy bills may go down (even if energy prices rise) as families have access to increasingly efficient appliances, lighting and cars.

Americans will save \$180 billion through the year 2030 on foreign oil expenditures as a result of the legislation, according to the Department of Energy.

Foreign Oil and Gasoline Prices

Gas prices have more than doubled since 2004 because of our over-reliance on oil. American families are spending \$50 million every hour on foreign oil. Without climate legislation, oil prices will be unpredictable and likely more and more expensive. Climate legislation will help stabilize prices by diversifying our fuel sources with next generation biofuels, speeding the availability of high mileage cars, expanding mass transit, and enhancing domestic oil production from existing wells (through greater use of CO₂ for enhanced oil recovery). How much will it cost to diversify our transportation fuels and dramatically reduce our dependency on foreign oil? According to the Department of Energy, recent comprehensive climate legislation considered in the Senate would cost less than 2 cents per gallon of gasoline per year.

This analysis also showed the legislation would decrease oil imports by more than 8 million barrels a day by 2025, saving more oil than the U.S. currently imports every day from OPEC countries.

ⁱ Roger Bezdek, Management Information Services, “Renewable Energy and Energy Efficiency: Economic Drivers for the 21st Century”

ⁱⁱ Americans for Balanced Energy Choices, “The Rising Burden of Energy Costs on American Families”

ⁱⁱⁱ National Research Council, “Potential Impacts of Climate Change on U.S. Transportation,” 2008.

^{iv} Kurzweil, Ray “Making the World a Billion Times Better,” Washington Post, April 13, 2008.

^v U.S. Climate Action Partnership, “Call to Action,” www.us-cap.org.

^{vi} McKinsey & Company, “Reducing U.S. Greenhouse Gas Emissions: How Much at What Cost?”, available at <http://www.mckinsey.com/client-service/csi/greenhousegas.asp>

^{vii} Center for American Progress, “A Broken Crystal Ball,” http://www.americanprogress.org/issues/2008/02/crystal_ball.html

^{viii} U.S. Energy Information Administration, “Energy Market and Economic Impacts of S. 2191,” April 2008.

Contact:

Kurt D. Zwally

Manager, Global Warming Solutions

(p) 202-797-6876 (e) zwallyk@nwf.org

1400 16th Street NW, Suite 501

Washington, DC 20036