



# The U.S. Clean Energy Economy

## A Look at Jobs, Savings, Investment, Competitiveness, and the Costs of Inaction

Last updated on: November 10, 2009

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### Jobs

- Clean-energy jobs are already here and growing fast. There were 770,385 clean-energy jobs and 68,205 clean-energy businesses in the United States as of 2007. This only counts direct jobs and not the many indirect jobs in industries that support the clean energy economy.
- The number of clean-energy jobs in the United States grew 9.1 percent between 1997 and 2008, while jobs overall only grew by 3.7 percent.
- The United States would see \$150 billion in public and private investment due to programs and incentives under the American Recovery and Reinvestment Act and the American Clean Energy and Security Act, or ACES. These investments will lead to 1.7 million net new clean-energy jobs in the United States—even assuming some potential job losses in the fossil fuel sector as workers transition into the clean energy economy.
- These jobs require a wide diversity of education and skills—about 490,000 (65 percent) are in engineering, legal, research, consulting, or government administration sectors; about 197,000 (26 percent) are in renewable power generation, construction, systems installation, and manufacturing sectors.
- The United States needs these good-paying, private sector jobs. The country's unemployment rate was at 10.2 percent as of October 2009.
- Jobs in the clean energy economy were distributed among the following sectors in 2008:
  - Conservation and pollution mitigation: 65.0 percent
  - Environmentally friendly production: 7.0 percent
  - Training and support: 6.8 percent
  - Energy efficiency: 9.5 percent
  - Clean energy: 11.6 percent

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## Consumer energy bill savings

- The average American family's annual spending on oil, gas, and electricity increased by \$1,100 under the Bush administration's energy policies, and spending will continue to rise if we do nothing. But American electricity and fuel bills would *go down* under the consumer protection provisions in the ACES bill.
- Emissions allowances allocated in the ACES bill for state efficiency programs alone will save Americans \$63 billion between 2012 and 2020.
- The Environmental Protection Agency estimates that by 2020 the average American household will save \$84 per year in energy costs due to the investment and efficiency provisions in ACES. The states with the biggest savings are also those most dependent on coal: Ohio, West Virginia, Pennsylvania, and Texas, among others.
- U.S. households will also save \$13.93 on gasoline each month on average by 2020 due to lower and more stable oil prices and more fuel-efficient vehicles under ACES.

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## Investment and innovation

- The clean energy economy is already growing in the United States. Private companies in the United States invested \$12.5 billion in clean energy from 2006 to 2008 through venture capital funds.
- An additional \$150 billion of public and private investment would flow into clean energy and energy efficiency in the United States under the clean-energy investment provisions in the ACES bill and the ARRA stimulus package.
- The United States' 68,205 clean-energy businesses patented 8,384 new clean-energy technologies in 2007 alone. Passing a strong clean-energy jobs bill this session is the best thing Congress can do to unlock even more innovation and entrepreneurship across the nation.
- An excellent map maintained by the Environmental Defense Fund shows where small and large clean-energy businesses are thriving all across the country, from LM Glasfiber's wind turbine blade factory in Little Rock, AK, to Electric Vehicles International in Anderson, IN to Green Power Solutions, Inc. in Clearfield, UT.
- Companies recognize that a price on carbon is crucial to giving industries the clear and long-term signals they need to invest in climate change solutions. Major businesses such as Apple, PG&E, Exelon, and PNM Resources have quit the Chamber of Commerce over its staunch opposition to clean-energy legislation. Other major chamber members such as Nike, Duke Energy Corporation, and Cisco Systems have publicly supported reform and rejected the chamber's views.

- Meanwhile, Fortune 500 companies including BP, Caterpillar, Alcoa, General Motors, Siemens, Shell, and General Electric formed the U.S. Climate Action Partnership, calling for immediate action to reduce global warming pollution. Their U.S. Climate Action Partnership plan forms the basis of the ACES bill and the Clean Energy Jobs and American Power Act.
- On November 4, yet another coalition of major companies—including Public Service Enterprise Group, DB Climate Change Advisors (Deutsche Bank Group), and Gap, Inc.—came together under the name American Businesses for Clean Energy to announce a new initiative demanding congressional action to enact clean-energy and climate legislation. Their message is clear: “Now is the time to act.”

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## American competitiveness and energy independence

- Americans spent more than \$439 billion on imported crude oil in 2008 alone, which breaks down to more than \$1,400 per person.
- Because nearly 40 percent of our oil imports come from potentially hostile or unstable regimes, and 92 percent of conventional oil reserves are in these nations, U.S. dependence on oil weakens our international leverage and undermines our foreign policy objectives.
- The volatility of the oil market during the last 30 years has cost the U.S. economy approximately \$8 trillion.
- Without comprehensive clean-energy reform, American taxpayers will spend \$32 billion more over the next 10 years to subsidize wealthy oil and gas companies. Why should we continue subsidizing polluting companies that are already making record profits?
- We are losing the race to invent and develop clean-energy jobs, businesses, and industries. China, with its massive clean-energy stimulus program, is investing twice what the United States is spending to green its economy. China is now a leading manufacturer of solar photovoltaic cells, second only to Japan, and it is set to be the world’s leading manufacturer of wind turbines by the end of 2009.

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## Costs of inaction

- The Congressional Budget Office predicted in May 2009 that climate change would cause decreases in future U.S. gross domestic product of between 3 and 5 percent, and global GDP of as much as 10 percent by the end of the century.

- Fifty-four Americans die every day on average due to air pollution caused by burning fossil fuels, according to the National Research Council. These deaths and the hidden health care costs associated with them cost the economy \$120 billion each year.
- The United States sent \$439 billion overseas to buy foreign oil in 2008—more than \$1 billion per day, or \$1,400 per person.
- A report authored by economists at Tufts and Cambridge Universities and released by the Natural Resources Defense Council estimates that the increased hurricanes, droughts, floods, infrastructure damage, and higher heating and cooling bills due to global warming will cost Americans an average of \$1.3 billion per day by 2050—\$506 billion annually, or 1.5 percent of GDP—if we do not reform our energy system and slash global warming pollution.
- Continuing to provide water to the western United States will cost \$200 billion in 2020 due to intensified drought conditions caused by climate change. This figure will increase to more than \$950 billion by 2100 if we don't slash global warming pollution.
- A 1.2° increase in temperature will cost corn growers more than \$1.4 billion in the United States. This is how much hotter it will be in 2030 if pollution continues as usual.
- Fossil fuel dependence weakens our national security. Because nearly 40 percent of our oil imports come from potentially hostile or unstable regimes, and 92 percent of conventional oil reserves are in these nations, U.S. dependence on oil weakens our international leverage and undermines our foreign policy objectives.
- Climate change will stress our military as water shortages, rising sea levels, and increasing droughts increase pressure on already unstable regions of the world. An ice-free arctic, which scientists say is possible by 2013, will increase the scope of U.S. naval operations where equipment and training has little capacity to operate.
- Delaying will only increase these costs, according to the International Energy Agency's recently released World Energy Outlook 2009. Every year we delay to address climate change will add an additional \$500 billion to the price tag.