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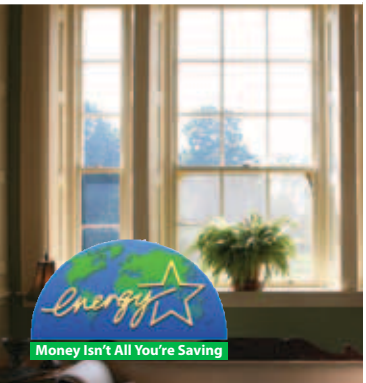

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How a Clean Energy Economy Will Save Consumers and Businesses Money

The United States is at a crossroads. We can choose to transition to a clean energy economy that addresses a multitude of challenges, including energy security, job creation, and global warming. Or we can continue on a path that keeps us tied to a dirty, inefficient, and outmoded energy system, forcing future generations to bear the enormous costs of unchecked climate change.

A competitive clean energy economy can save consumers and businesses money, stimulate job growth and innovation, and give our children a healthier, more secure future. Congress is currently debating legislation intended to transition the United States to such an economy while reducing the heat-trapping emissions that drive global warming. In the form recently passed by the House of Representatives, the American Clean Energy and Security Act (ACES)[1] would put the nation on a path to cutting emissions 80 percent by 2050, and implement standards that would help us save energy.

Several independent analyses of ACES find that it is likely to impose only minimal costs on consumers and the economy.[2] In fact, analyses by the Union of Concerned Scientists (UCS) and others show that strengthening provisions designed to increase energy efficiency; increase the use of wind, solar, and other renewable resources; and ensure significant near-term reductions in emissions could actually *lower* energy bills for households and businesses.[3]

Policies in the Climate 2030 Blueprint

- An economy-wide cap on carbon emissions set at 26 percent below 2005 levels by 2020, and 56 percent below 2005 levels by 2030
- Efficiency standards
- Building codes
- A national renewable electricity standard
- Standards that limit carbon emissions from vehicles
- A low-carbon fuel standard
- Smart-growth policies
- Advanced vehicle technology standards
- Investments in research and development of cleaner technologies, including carbon capture and storage for coal-fired power plants

A Blueprint for Action

A recent UCS analysis, *Climate 2030: A National Blueprint for a Clean Energy Economy* (herein called "the Blueprint"),[4] demonstrates that a full suite of strong energy, climate, and transportation policies (see the text box below) will promote greater energy efficiency and increased use of renewable energy throughout the economy, deliver deep cuts in emissions, and save consumers and businesses money. The Blueprint policies are stronger and more comprehensive than related provisions in ACES, and therefore able to deliver even greater benefits to consumers, businesses, and the environment.

A competitive clean energy economy can save consumers and businesses money, stimulate job growth and innovation, and give our children a healthier, more secure future.

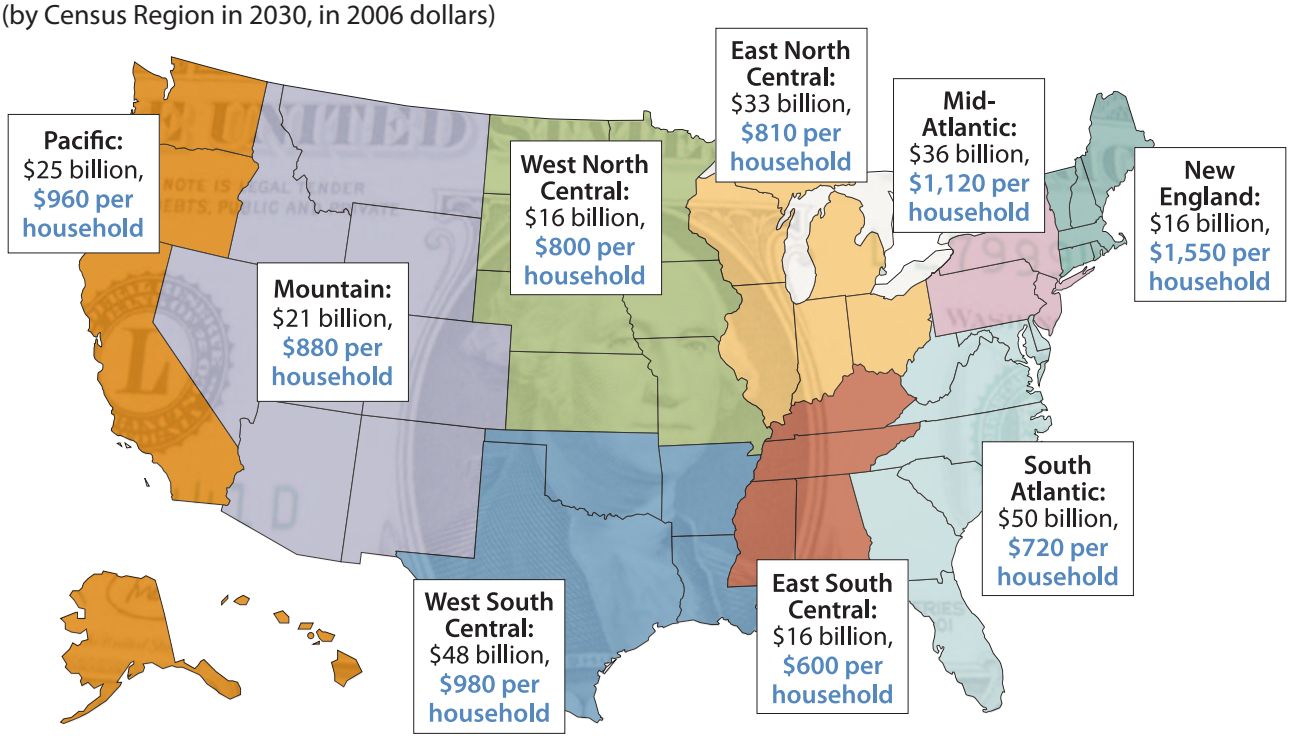
Household and Business Savings

The Blueprint policies, if enacted, will drive significant investments in energy efficiency and renewable energy, changing the way Americans use energy while improving their quality of life and saving them money. Higher efficiency and renewable energy standards and financial incentives can help homeowners and businesses lower their energy and fuel bills by replacing old, inefficient vehicles, lighting, and heating and cooling equipment with new energy- and fuel-saving technologies.

Existing policies have already helped wind energy become cost-competitive with fossil-based sources of electricity over the past decade, and the Blueprint would rapidly expand the market for this and other renewable resources.[5] In addition, the Blueprint would support industries and power plants that want to capture and recycle energy that is currently being wasted.*

* For example, coal-fired power plants typically convert only one-third of the coal's energy potential into electricity, with the rest lost as "waste" heat. This could be recaptured using combined-heat-and-power systems and used for heating or other purposes.

Net Consumer and Business Savings under the Blueprint
(by Census Region in 2030, in 2006 dollars)



Net Annual Savings in 2030	**Total**	**$255 billion**
	Business	$128 billion
	Consumers	$126 billion
	Average Consumer	$900 per household

Note: Values may not sum properly because of rounding.

Consumers and businesses in every region of the country would save billions of dollars under the Blueprint. (Household numbers do not include business savings.)

The Blueprint policies as a whole can generate net annual savings for households, vehicle owners, businesses, and industries of $255 billion in 2030 while greatly reducing emissions. Every region of the country—even coal-dependent regions—stands to save billions of dollars (see the figure above). The average household could spend $900 less on energy and transportation in 2030, approximately $320 of which would result from lower electricity, natural gas, and oil costs; the remaining $580 would result from reduced transportation expenses. Businesses could save a total of nearly $130 billion in energy-related expenses in 2030.

Robust Economic Growth

Studies by the Environmental Protection Agency (EPA) and the U.S. Department of Energy's Energy Information Administration (EIA) have found that ACES—which includes modest versions of most of the Blueprint policies—would have little negative impact on the economy or household energy bills.[6] For example, the EPA estimates the average cost (in net present value) per household would be $80 to $111 per year through 2050.[7] The EIA estimates the average cost would be $83 per year between 2012 and 2030. These figures translate to just 22 to 30 cents a day for the average American family.[8]

The same analyses show that the economy will continue to grow robustly under ACES. For example, the EIA model results show that the U.S. gross domestic product (GDP) would grow about 60 percent between 2012 and 2030 under ACES, and total GDP relative to the baseline would decline a mere 0.3 percent.[9] The EPA's analysis shows that the GDP would grow at practically the same rate with or without ACES: an average annual growth rate under ACES of just 0.02 percent to 0.04 percent less than the baseline between 2010 and 2030.[10] It should also be noted that none of these studies include the full scope of potential cost-saving energy policies, nor do they take into account the high costs of global warming, which could amount to billions of dollars in losses each year from more severe hurricanes, rising sea levels, and an increasing number of droughts, heat waves, wildfires, and other adverse impacts.[11]

> Every region of the country—even coal-dependent regions—stands to save billions of dollars from investments in renewable energy and efficiency.

Job Creation and International Competitiveness

According to an analysis by the American Council for an Energy-Efficient Economy,

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In general, renewable energy projects can create three times the number of jobs per kilowatt-hour as coal- and natural-gas-fired power plants.

the energy efficiency provisions of ACES (including building codes, appliance standards, and a requirement that utilities obtain 20 percent of their energy through a combination of renewable energy and energy efficiency) would create 383,800 new jobs by 2020 and 607,200 jobs by 2030. The same study found that higher efficiency standards and larger incentives could create more than 569,000 jobs by 2020 and more than 1 million by 2030.[12]

UCS has similarly found that merely requiring utilities to produce 25 percent renewable electricity by 2025 would create nearly 300,000 new U.S. jobs—three times the number that would be created by producing the same amount of electricity from coal and natural gas. This renewable electricity standard could further stimulate the economy by generating $263 billion in new capital investment; $14 billion in income for U.S. farmers, ranchers, and rural landowners; and $12 billion in new local tax revenues.[13] The clean technology industry is growing rapidly and becoming increasingly competitive internationally. To tap into the potentially huge export market, the United States needs to encourage rapid expansion of the wind, solar, geothermal, bioenergy, and advanced vehicles industries, as well as other clean, efficient technologies. Standards, incentives, and investments in research and development are all critical to establishing U.S. leadership in this area.

> The economy will continue to grow robustly under comprehensive climate and energy policies.

Reduced Oil Dependence

The Blueprint demonstrates that significant increases in energy efficiency combined with forward-thinking transportation and smart-growth policies can greatly reduce the nation's reliance on oil, including the portion that comes from unstable regimes around the world. For example, by investing in cleaner vehicles, low-carbon fuels, and a more efficient transportation system, plus efficiency improvements that reduce oil use in industry and home heating, the United States could cut its petroleum consumption 6 million barrels a day by 2030 compared with 2005—as much as we now import from the Organization of the Petroleum Exporting Countries (OPEC).[14]

The EIA's analysis of ACES similarly shows that overall use of oil and other petroleum products would decline about 1.2 million barrels per day by 2030. That would save the United States about $250 billion on oil imports during that time.*

A Smart Choice for America

Transitioning to a clean energy economy will certainly require some up-front investment. But these costs will more than pay for themselves in the form of energy savings, new jobs, new growth industries, and new opportunities for innovation. Conversely, inaction would leave us exposed to high energy prices, dependent on outdated energy sources and technologies, and saddled with the damaging and costly effects of climate change.

The choice is clear: the time to invest in our future is now.

* Net present value in 2007 dollars, based on a discount rate of 7 percent.

ENDNOTES

1 The American Clean Energy and Security Act (ACES). 2009. H.R. 2454, 111th Congress, first session. Online at *http://www.govtrack.us/congress/bill.xpd?bill=h111-2454.*

2 See, for example:

Energy Information Administration (EIA). 2009. *Energy market and economic impacts of H.R. 2454, the American Clean Energy and Security Act of 2009*. Washington, DC: U.S. Department of Energy. Online at *http://www.eia.doe.gov/oiaf/servicerpt/hr2454/pdf/sroiaf(2009)05.pdf.*

U.S. Environmental Protection Agency (EPA). 2009. *EPA analysis of the American Clean Energy and Security Act of 2009.* Washington, DC. Online at *http://www.epa.gov/climatechange/economics/pdfs/HR2454_Analysis.pdf.*

Congressional Budget Office (CBO). 2009. *The estimated costs to households from the cap-and-trade provisions of H.R. 2454.* Washington, DC. Online at *http://energycommerce.house.gov/Press_111/20090620/cbowaxmanmarkey.pdf.*

3 See, for example:

Cleetus, R., S. Clemmer, and D. Friedman. 2009. *Climate 2030: A national blueprint for a clean energy economy.* Cambridge, MA: Union of Concerned Scientists. Online at *www.ucsusa.org/assets/documents/global_warming/climate-2030-report.pdf.*

Gold, R., L. Furrey, S. Nadel, J. Laitner, and R.N. Elliott. 2009. *Energy efficiency in the American Clean Energy and Security Act of 2009: Impacts of current provisions and opportunities to enhance the legislation*. ACEEE report E096. Washington, DC.

4 Cleetus, R., S. Clemmer, and D. Friedman. 2009. *Climate 2030: A national blueprint for a clean energy economy.* Cambridge, MA: Union of Concerned Scientists. Online at *www.ucsusa.org/assets/documents/global_warming/climate-2030-report.pdf.*

5 Wiser, R., and M. Bolinger. 2009. *2008 wind technologies market report*. Prepared for the U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy. Online at *http://eetd.lbl.gov/EA/emp/reports/2008-wind-technologies.pdf.*

6 Energy Information Administration (EIA). 2009. *Energy market and economic impacts of H.R. 2454, the American Clean Energy and Security Act of 2009*. Washington, DC: U.S. Department of Energy. Online at *http://www.eia.doe.gov/oiaf/servicerpt/hr2454/pdf/sroiaf(2009)05.pdf.*

Environmental Protection Agency (EPA). 2009. *EPA analysis of the American Clean Energy and Security Act of 2009.* Washington, DC. Online at *http://www.epa.gov/climatechange/economics/pdfs/HR2454_Analysis.pdf.*

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Hybrid vehicles improve fuel economy by combining an electric motor and battery pack with a combustion engine. Coordinating fuel economy policies with a system for regulating carbon emissions from vehicles would help reduce global warming pollution, consumer costs, and U.S. oil dependence.

7 Ibid.

8 Environmental Defense Fund (EDF). 2009. *Cutting global warming pollution for a dime a day: Key findings from government analyses of current climate legislation*. New York, NY. Online at *http://www.edf.org/documents/10351_EPA-EIA-CBO-Cost-Estimates-HR2454.pdf.*

9 ACES Basic Case results for total discounted GDP losses over the 2012 to 2030 time period, expressed in present value using a 4 percent discount rate. From: Energy Information Administration (EIA). 2009. *Energy market and economic impacts of H.R. 2454, the American Clean Energy and Security Act of 2009*. Washington, DC: U.S. Department of Energy. Online at *http://www.eia.doe.gov/oiaf/servicerpt/hr2454/pdf/sroiaf(2009)05.pdf.*

10 Environmental Protection Agency (EPA). 2009b. Appendix to *EPA analysis of the American Clean Energy and Security Act of 2009.* Washington, DC. Online at: *http://www.epa.gov/climatechange/economics/pdfs/HR2454_Analysis_Appendix.pdf.*

11 Union of Concerned Scientists (UCS). 2009. *Climate change in the United States: The prohibitive costs of inaction.* Cambridge, MA. Online at *http://www.ucsusa.org/climatecosts.*

12 Gold, R., L. Furrey, S. Nadel, J. Laitner, and R.N. Elliott. 2009. *Energy efficiency in the American Clean Energy and Security Act of 2009: Impacts of current provisions and opportunities to enhance the legislation*. ACEEE report E096. Washington, DC.

13 Union of Concerned Scientists (UCS). 2009. *Clean power, green jobs: A national renewable electricity standard will boost the economy and protect the environment.* Cambridge, MA. Online at *www.ucsusa.org/assets/documents/clean_energy/Clean-Power-Green-Jobs-25-RES.pdf.*

14 Cleetus, R., S. Clemmer, and D. Friedman. 2009. *Climate 2030: A national blueprint for a clean energy economy.* Cambridge, MA: Union of Concerned Scientists. Online at *www.ucsusa.org/assets/documents/global_warming/climate-2030-report.pdf.*

This fact sheet is available online at *www.ucsusa.org/smartclimatechoices*.

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