



Fact Sheet

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Energy, Environmental, and Consumer Benefits of the American Recovery and Reinvestment Act

In February 2009, Senate Democrats passed and President Obama signed into law the *American Recovery and Reinvestment Act*. The legislation made historic investments in American-made clean energy through tax incentives, federal funding, and loan guarantees. In April, the Energy Information Administration (EIA) released an analysis on the legislation's projected impact on the nation's energy policy, the environment, and consumers. This Fact Sheet provides an overview of those findings and uses the National Renewable Energy Laboratory's Job and Economic Development Impact model (National JEDI Wind) to estimate how the increase in wind energy will spur economic and job creating benefits.

The American Recovery and Reinvestment Act Promotes American-Made Clean Energy

The *American Recovery and Reinvestment Act* includes a host of provisions that are intended to jump start the creation of an American-made clean energy sector in order to create millions of green jobs, spur economic development, and build a more sustainable economy. The April 2009 analysis by the EIA projects that the legislation will cause a "significant expansion in the use of renewable fuels for electricity generation, particularly in the near-term."¹

Wind. As of January 31, 2009, 26,274 megawatts of wind power were installed in the United States.² The *American Recovery and Reinvestment Act* will result (also see the chart below) in:

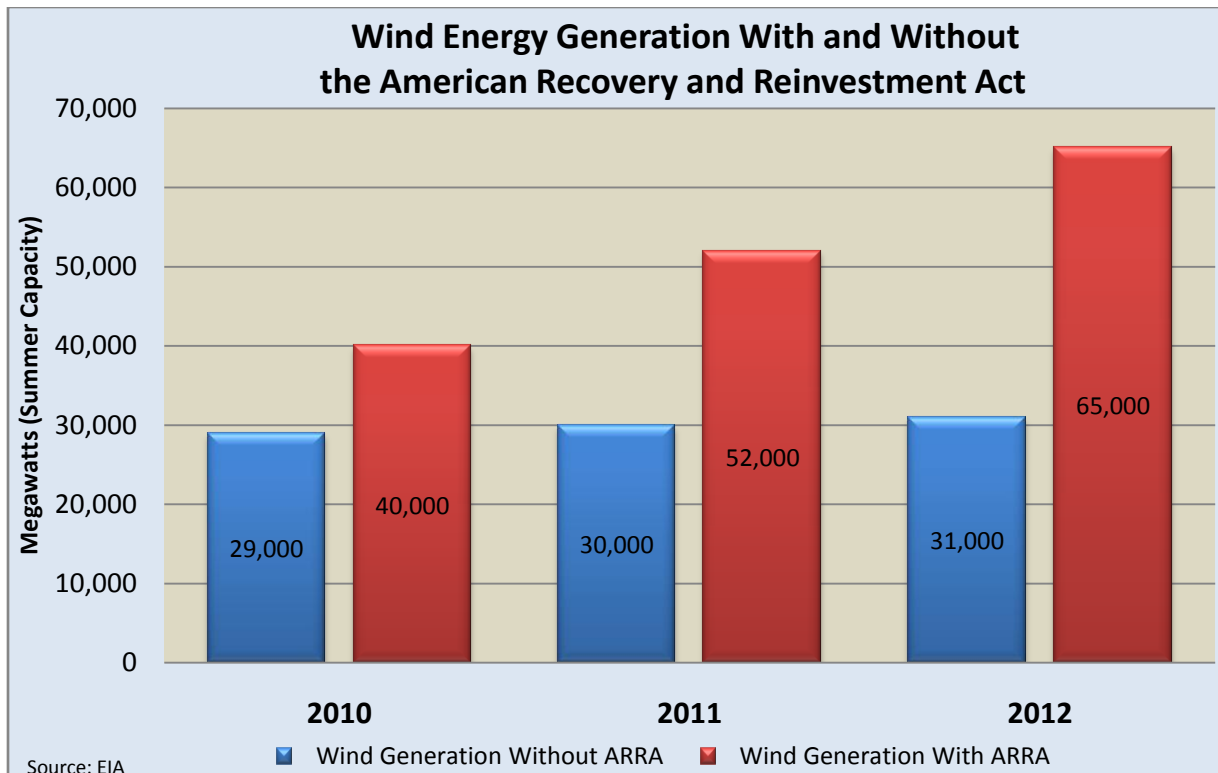
- The generation of 39,000 megawatts of electricity from wind energy in 2010, 51,000 megawatts in 2011, and 65,000 megawatts in 2012. This equates to a 67 percent increase in wind energy generation over the next three years.

- An additional 10,500 megawatts of wind energy in 2010 (as measured against 2010 non-stimulus generated levels), an additional 21,500 megawatts of wind energy in 2011 (as measured against 2011 non-stimulus generated levels), and an additional 34,000 megawatts of wind energy in 2012 (as measured against 2012 non-stimulus generated levels).
- By 2030, the EIA projects the generation of electricity from wind energy is projected to reach 68,054 megawatts. This projection is expected to increase significantly in the future if the renewable energy production tax credit was further extended or a renewable electricity standard is enacted.

Without the *American Recovery and Reinvestment Act*, the EIA projects wind energy generation to only reach only 29,000 megawatts in 2010, 30,000 megawatts in 2011, and 31,000 megawatts in 2012. This equates to only a 6 percent increase in wind energy generation over the next three years (2010 to 2012). By 2030, the EIA estimates that without the legislation wind energy generation reach only 40,870 megawatts. This projection assumes that the renewable energy production tax credit will expire at the end of 2009.

Economic Development and Job Creation Impact. The *American Recovery and Reinvestment Act* will also help to create clean, safe sources of energy that never run out and will create millions of clean energy jobs and spur economic development. The national JEDI wind estimate shows that³:

- In 2010, an additional 11,000 megawatts (as compared to 2010 non-stimulus levels) that are projected to come online because of the *American Recovery and Reinvestment Act* will create approximately 353,000 jobs during construction and approximately 17,000 jobs during operation.
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- In 2012, an additional 12,000 megawatts (as compared to 2012 non-stimulus levels) that are projected to come online because of the *American Recovery and Reinvestment Act* will create approximately 424,000 jobs during construction and approximately 20,000 jobs during operation.

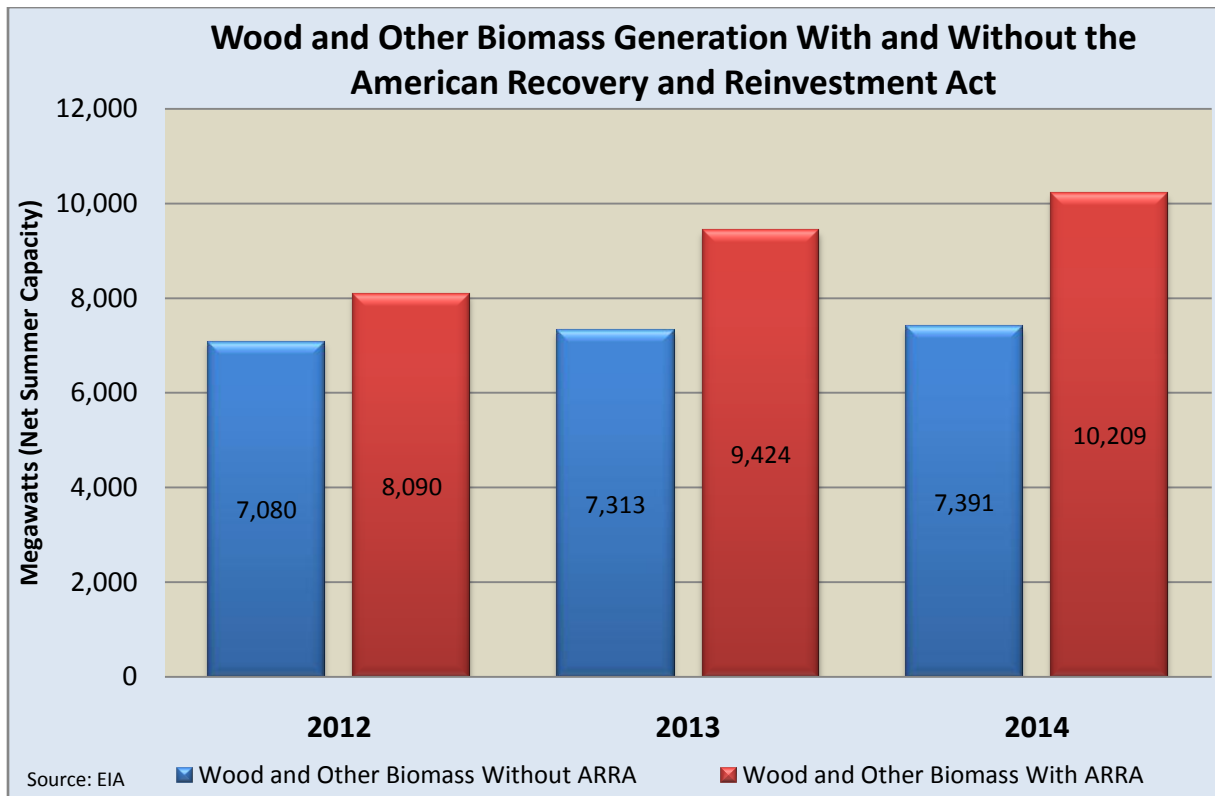


Biomass. The *American Recovery and Reinvestment Act* will result (also see the chart below) in:

- The generation of 8,090 megawatts of electricity from wood and other biomass sources in 2012, 9,424 megawatts in 2013, and 10,209 megawatts in 2014. This the EIA projection equates to a 26 percent increase in electricity generation from wood and biomass sources over those three years.
- An additional 1,010 megawatts of electricity generation from wood and other biomass sources will be generated in 2010 (as measured against 2010 non-stimulus generated levels), an additional 2,111 megawatts in 2011 (as measured against 2011 non stimulus generated levels), and an additional 2,818 megawatts in 2012 (as measured against 2012 non-stimulus generated levels).
- By 2030, the EIA projects the generation of electricity from wood and other biomass sources will reach 21,320 megawatts which is 18 percent higher compared to the no-stimulus case.

Without the *American Recovery and Reinvestment Act*, the EIA projects electricity generation from wood and other biomass sources to increase only by 4 percent from 2012 to 2014. By 2030, the EIA estimates that without the legislation generation of electricity from wood and other biomass sources reach only 18,060 megawatts—3,260

megawatts less than what is projected to generated by the *American Recovery and Reinvestment Act*.



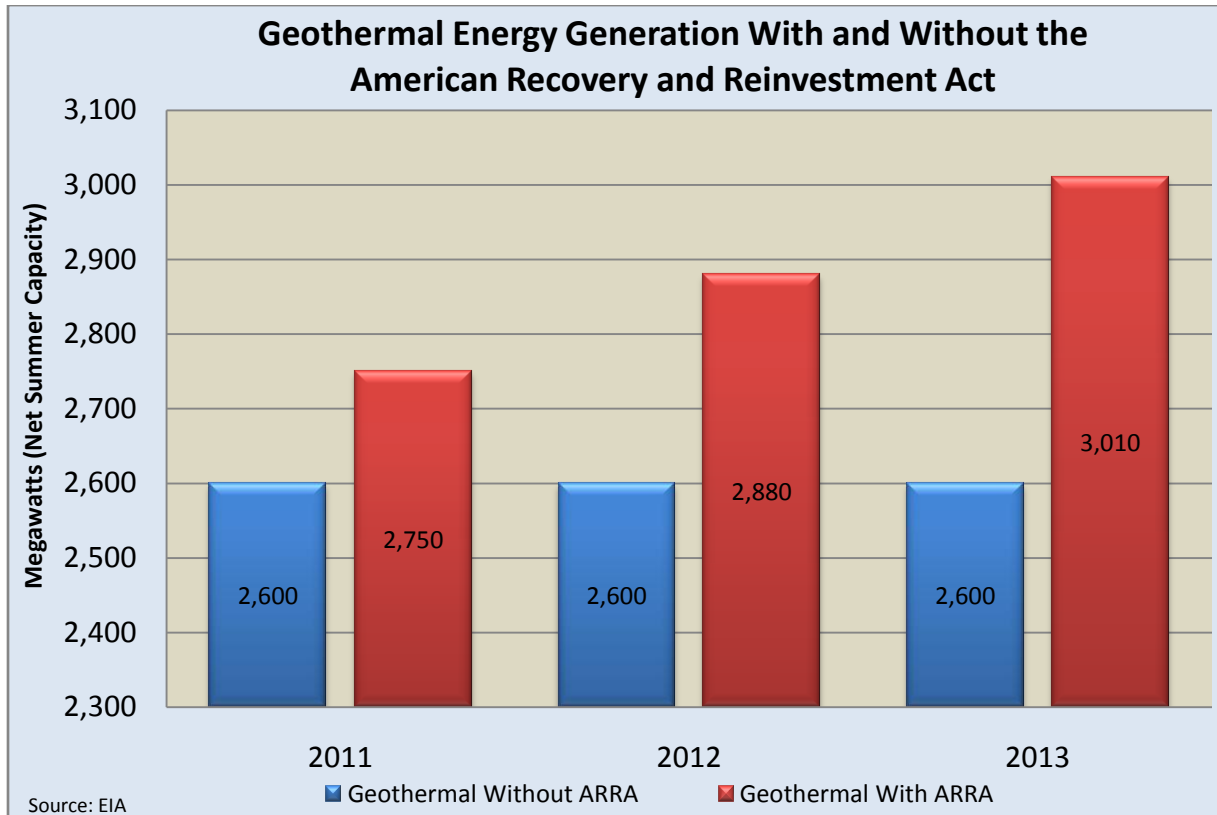
Geothermal. The *American Recovery and Reinvestment Act* will result (also see the chart below) in:

- The generation of 2,750 megawatts of geothermal electricity generation 2011, 2,880 of geothermal energy generation in 2012, and 3,010 megawatts in 2013 (see also the chart below). This equates to a 10 percent increase in geothermal energy generation over those three years (2011-2013). This projection could be expected to rise significantly in the future if the renewable energy production tax credit was further extended or a renewable electricity standard were enacted.

Without the *American Recovery and Reinvestment Act* the EIA projects electricity generation from geothermal resources would have been expected to experience no growth for eleven years (2011 to 2021). By 2013, electricity generation from geothermal resources is projected to be 16 percent less than the amount that would have been generated without the legislation.

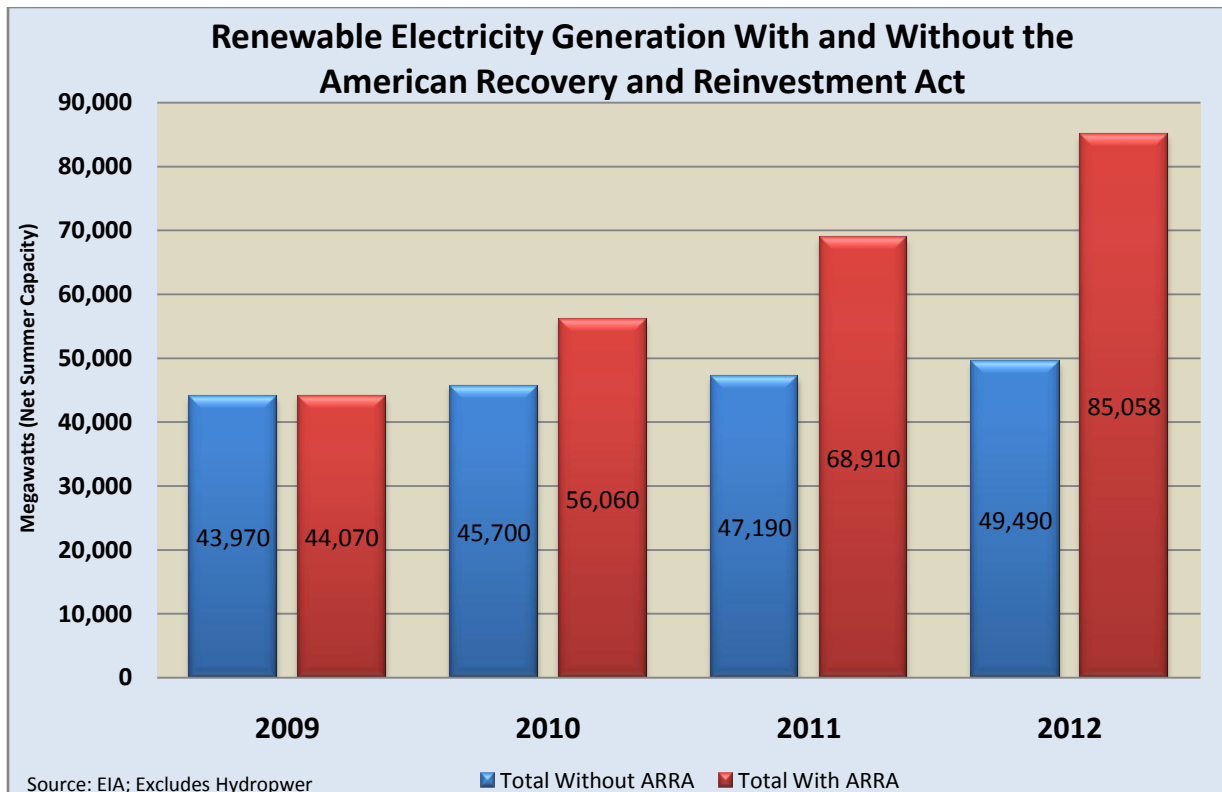
Please note that the EIA’s geothermal energy measurements do not account for geothermal energy currently produced in stand-by mode. Additionally, the EIA’s measurements for “Net Summer Capacity” under-report the generating capacity of

geothermal energy. For comparison, a March 2009 survey by the Geothermal Energy Association measured geothermal energy’s online capacity at 3,040 megawatts.⁴



Renewable Electricity Generation—2009 to 2012. The *American Recovery and Reinvestment Act* will result in a “significant expansion in the use of renewable fuels for electricity generation, particularly in the near-term.”⁵ The following information summarizes the impact the legislation will have on renewable electricity generation (excluding hydropower) through 2012 (also see the chart below):

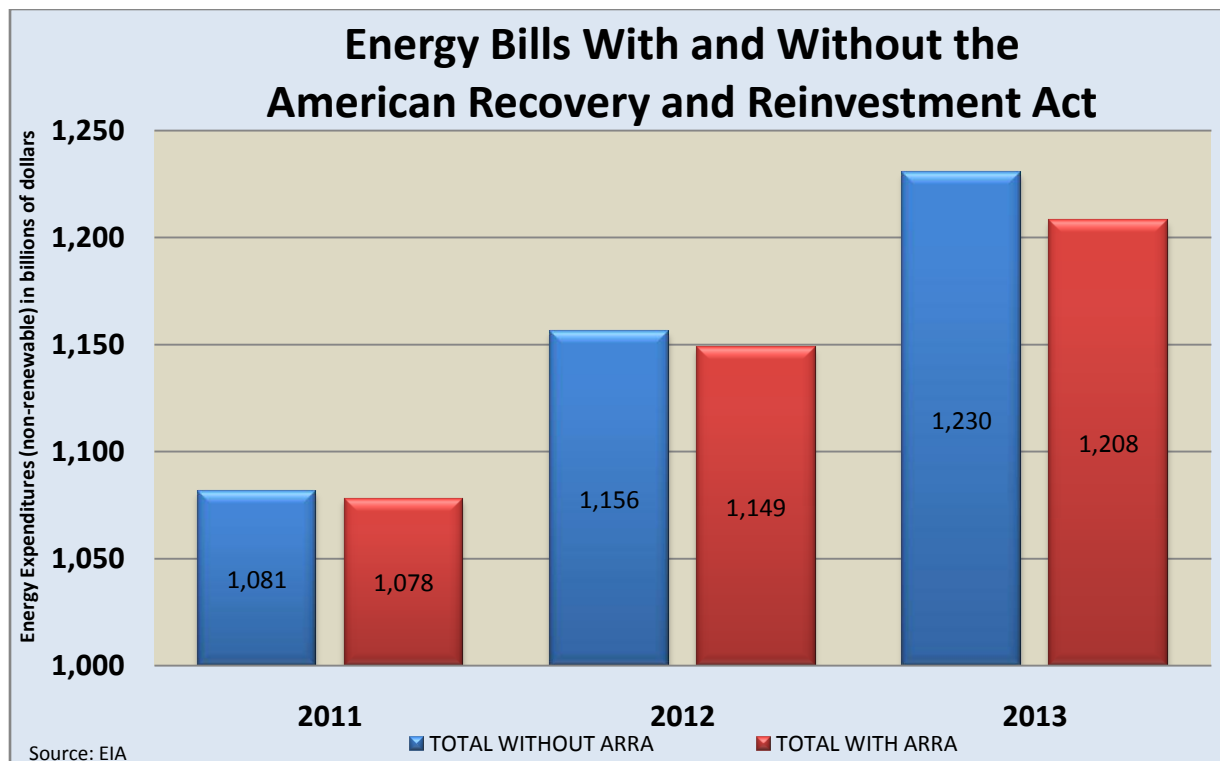
- In 2010, the EIA projects renewable electricity generation will reach more than 56,000 megawatts, approximately 69,000 in 2011 and more than 85,000 in 2012. This represents an increase of approximately 41,000 megawatts of renewable electricity or a 93 percent over the four year period.
- In comparison, if the *American Recovery and Reinvestment Act* had not been passed by Congress and signed into law by President Obama then it would be much more difficult to move away from the dirty fuels of the past as renewable electricity generation would have increased by only 5,500 megawatts or just 12 percent over the four year period.



The American Recovery and Reinvestment Act Promotes Consumer Savings

Household utility bills. The analysis by the EIA shows that the *American Recovery and Reinvestment Act* will result in lower household energy bills and allow people to save money for a more prosperous future. Between 2009 and 2030, annual household utility expenditures is projected to be \$64 (real 2007 dollars) less than they would have been if the *American Recovery and Reinvestment Act* had not been enacted into law⁶.

The impact of the *American Recovery and Reinvestment Act* on household energy bills is also projected to be most pronounced between 2011 and 2013 (also see chart below). In sum, the legislation is projected to provide a \$32 billion decrease in total non-renewable energy expenditures (residential, commercial, industrial, transportation).



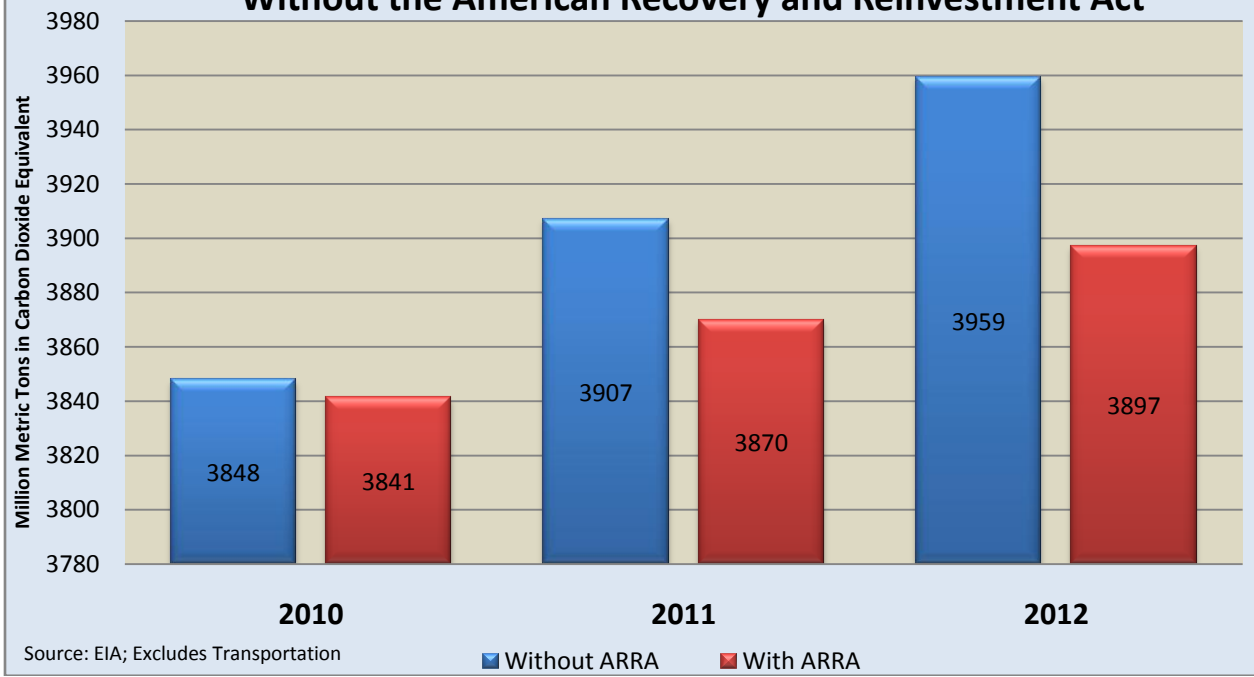
The American Recovery and Reinvestment Act Reduces Greenhouse Gas Emissions

Greenhouse gas emissions. Without the *American Recovery and Reinvestment Act*, the EIA estimates that energy-related greenhouse gas emissions would have increased by approximately 111 million metric tons of carbon dioxide equivalent—or – approximately four percent between 2010 and 2012.

The energy efficiency and renewable incentives in the *American Recovery and Reinvestment Act* are projected to produce sizeable greenhouse gas emission reductions, especially in the residential, commercial, and industrial sectors (also see chart below):

- By 2012, the EIA projects that the *American Recovery and Reinvestment Act* will have averted the emission of 106 million metric tons of carbon dioxide equivalent from 2010 to 2012.
- Energy-related greenhouse gas emissions from residential sources are expected to decline by approximately 16 million metric tons, even though gross domestic product (GDP) is projected to increase by 7 percent.

Energy Related Greenhouse Gas Emissions With and Without the American Recovery and Reinvestment Act



¹ Energy Information Administration, An Updated Annual Energy Outlook 2009 Reference Case Reflection Provisions of the American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook,” April 2009,
[http://www.eia.doe.gov/oiaf/servicerpt/stimulus/pdf/sroiaf\(2009\)03.pdf](http://www.eia.doe.gov/oiaf/servicerpt/stimulus/pdf/sroiaf(2009)03.pdf)

² Department of Energy, “Current Installed Wind Energy Capacity Map,”
http://www.windpoweringamerica.gov/wind_installed_capacity.asp

³ The data sets for this national wind JEDI model assume that all project costs (construction, labor, development) take place entirely within the United States.

⁴ Geothermal Energy Association, U.S. Geothermal Power Production and Development Update, March 2009, http://www.geo-energy.org/publications/reports/Industry_Update_March_Final.pdf

⁵ Energy Information Administration, An Updated Annual Energy Outlook 2009 Reference Case Reflection Provisions of the American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook,” April 2009,
[http://www.eia.doe.gov/oiaf/servicerpt/stimulus/pdf/sroiaf\(2009\)03.pdf](http://www.eia.doe.gov/oiaf/servicerpt/stimulus/pdf/sroiaf(2009)03.pdf)

⁶ Energy Information Administration, An Updated Annual Energy Outlook 2009 Reference Case Reflection Provisions of the American Recovery and Reinvestment Act and Recent Changes in the Economic Outlook,” April 2009,
[http://www.eia.doe.gov/oiaf/servicerpt/stimulus/pdf/sroiaf\(2009\)03.pdf](http://www.eia.doe.gov/oiaf/servicerpt/stimulus/pdf/sroiaf(2009)03.pdf)