

Study: Renewable sources could supply 80% of U.S. electricity by 2050

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If the U.S simply committed to building out the transmission infrastructure, the Department of Energy (DOE) believes that currently existing renewable energy technology “is more than adequate” to supply up to 80 percent of the nation’s daily electricity use by the year 2050, a new study has found.

Put together by the DOE’s National Renewable Energy Laboratory, the study is the largest-ever to examine the nation’s potential renewable energy capacity. It predicts that while fossil and nuclear fuels will still be needed in 2050, they won’t continue to supply the more than 60 percent of America’s energy they do today.

The U.S. Energy Information Center noted that in the 12 months ending in March 2012, coal, natural gas and nuclear were still by far the most relied-upon sources of power, with coal coming out on top, accounting for more than 40 percent of U.S. electricity generation. But provided the U.S. has the political will and the private sector motivation to build out the transmission grid, the DOE believes wind power will become a dominant force in the U.S. energy market.

Combined with solar, the two technologies could supply up to 50 percent of daily U.S. electricity use on their own, the study found. The DOE also noted that all regions of the U.S. have roughly equivalent opportunity for renewable energy exploration, with offshore areas being prime real estate for wind energy generation.

The greatest challenge foreseen by the study is growing the transmission capabilities for wind energy, which must expand beyond 439 gigawatts if the DOE’s numbers are to ever be fulfilled.

Current wind energy capacity in the U.S. is expected to hit 50 gigawatts by 2016, according to the Renewable Energy Policy Network for the 21st Century (REN21), a stakeholder-driven policy thinktank. A prior Department of Energy estimate predicted that the U.S. would not reach 10 gigawatts of wind power until 2010, but that benchmark was hit in 2006 instead, growing to roughly 40 by 2010.

Despite that encouraging sigh, a huge expansion of the U.S. energy grid — one that would take decades — still lies ahead. But there are some other hopeful changes happening in the renewable energy markets that may make the task easier.

REN21’s latest report also notes that renewable technology “accounted for almost half of the estimated 208 gigawatts of electric capacity added globally” during 2011. Overall, renewable tech supplied about 20 percent of earth’s energy last year, an increase of about 8 percent over 2010; in the U.S., renewables generated 12.7 percent of all electricity used in 2011, up from 9.3 percent in 2009.

During that same time, the price of common solar cells dropped by almost 50 percent, and wind turbine prices fell by about 10 percent. The plunging price of solar cells also drove a wave of new investment, pushing the solar market near \$150 billion in total value. China and the U.S. were the

largest investors, with Europe, India and Brazil trailing not far behind.

President Barack Obama's administration has invested more money in renewable energy research and electric grid capacity growth than any prior administration, including \$3.4 billion in 2009's economic stimulus solely dedicated to installing new electricity transmission lines, "smart meters" and other efficiency innovations.

President Obama also pushed electric grid modernization projects in his 2011 jobs proposals, which were completely shut out by Republicans in Congress, and has used the nation's annual budget to support significant capital growth for government agencies that support renewable energy build-out.

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