

## **Production Tax Credit for Renewable Energy**

**(Union of Concerned Scientists – Citizens and Scientists for Environmental Solutions)**

The American Recovery and Reinvestment Act of 2009 (H.R. 1), signed into law by President Obama on February 17, 2009, extended the production tax credits (PTC) and investment tax credits (ITC), which have been critical to the growth of the renewable energy sector, and added a new incentive, Treasury grants taken in lieu of tax credits, designed to promote the growth of renewables despite the economic downturn. The Treasury grants program is set to expire at the end of 2010.

Companies that generate wind, solar, geothermal, and “closed-loop” bioenergy (using dedicated energy crops) are eligible for the PTC which provides a 2.1-cent per kilowatt-hour (kWh) benefit for the first ten years of a renewable energy facility's operation. Other technologies, such as “open-loop” biomass (using farm and forest wastes rather than dedicated energy crops), incremental hydropower, small irrigation systems, landfill gas, and municipal solid waste (MSW), receive a lesser value tax credit of 1.0 cent per kWh.

The PTC for wind, which as the largest producer of renewable energy has the greatest impact on the budget, was extended an additional two years, until the end of 2012. The PTC for incremental hydro, geothermal, MSW, and bioenergy was extended until the end of 2013. The bill also extends the PTC for electricity produced by wave and tidal energy through 2013. Businesses and individuals who buy solar energy systems had been previously eligible to receive an ITC of 30 percent. The bill extends this option for solar facilities while in addition allowing other eligible technologies to receive the ITC in lieu of the PTC. This measure is designed to promote the development of renewable energy in instances of economic uncertainty where a PTC is not as enticing to developers as an ITC.

A third incentive established by the bill is a grant system administered by the Treasury Department. In lieu of tax credits, wind, biomass, geothermal, and solar projects can receive a grant of up to 30 percent of the basis of the property's value. Other eligible renewable technologies can receive a grant of up to 10 percent. The grant system was developed to maintain the growth of the renewable energy sector despite the economic downturn. Because many renewable developers weren't as profitable, they didn't have the income taxes to pay, and so the tax credits weren't valuable to them. Now, with the ability to receive grants in lieu of tax credits, renewable energy developers should be able to continue their growth.

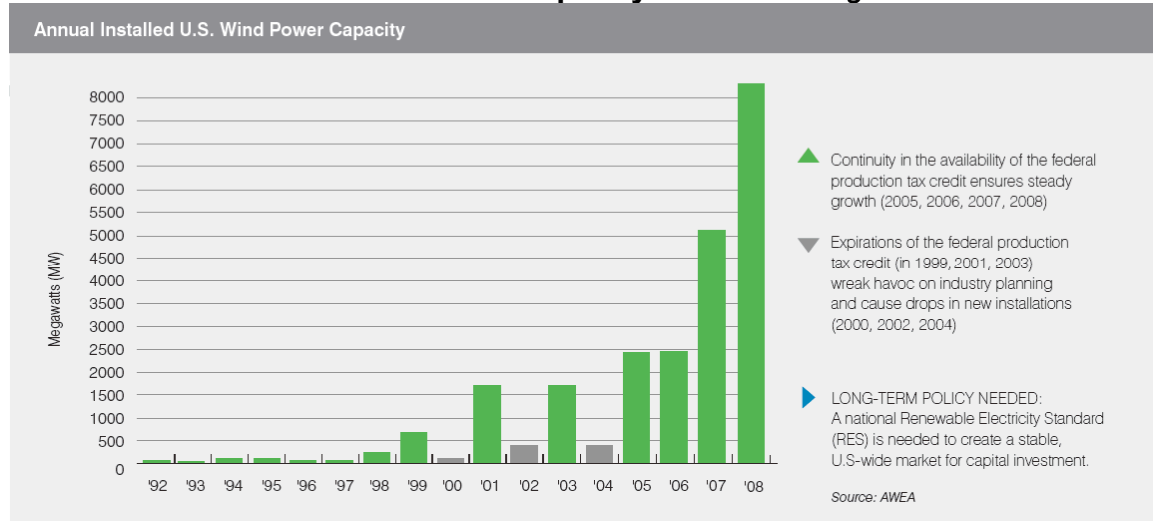
The Energy Information Administration (EIA), the research division of the Department of Energy, updated its 2009 outlook report to compare renewable

energy generation in a 'business as usual' case and generation resulting from the economic stimulus. The EIA report found that the stimulus would result in a "significant expansion" of renewable energy, especially in the near-term. Wind generation from the stimulus would be more than doubled by 2012 due to the extended tax credit options. The commercial photovoltaic solar sector is predicted to increase its capacity by 15 percent over the business as usual case by 2011. Geothermal and biomass capacity would also be increased due to development under the stimulus. Federal tax credits and other financial incentives are crucial to maintaining the growth in renewable electricity.

This marks just the fourth time that the PTC was extended by Congress before it had been allowed to expire. In one of the last measures taken by the 110th Congress, critical tax incentives for promoting the development of renewable energy and energy efficiency were extended. The tax incentives were set to expire on December 31, 2008, but due to the efforts of a very diverse coalition that included UCS, they were extended as part of the Emergency Economic Stabilization Act of 2008 that President Bush signed on October 3, 2008. At the end of the 109th Congress, the PTC and ITC were extended to the end of 2008 as part of the Tax Relief and Health Care Act of 2006 (H.R. 6408). Previously, in August 2005, a two-year extension of the PTC was included in a large package of tax incentives in the Energy Policy Act of 2005 (H.R. 6); the solar ITC was created in 2005 as part of HR 6. The PTC was set to expire at the end of 2005, and its extension was one of the few bright spots for renewable energy in this energy bill.

From 1999 until 2004, the PTC had expired on three separate occasions. Originally enacted as part of the Energy Policy Act of 1992, the PTC—then targeted to support just wind and certain bioenergy resources—was first allowed to sunset on June 30, 1999. In December of 1999, again due to the efforts of UCS and other organizations, the credit was extended until December 31, 2001. The PTC expired at the end of 2001, and it was not until March 2002 that the credit was extended for another two years. Congress allowed the PTC to expire for the third time at the end of 2003. From late 2003 through most of 2004 attempts to extend and expand the PTC were held hostage to the fossil-fuel dominated comprehensive energy bill that ultimately failed to pass during the 108th Congress. In early October 2004, a one-year extension (retroactive back to January 1, 2004) of the PTC was included in a larger package of 'high priority' tax incentives for businesses signed by President George Bush. A second bill—extending the PTC through 2005 and expanding the list of eligible renewable energy technologies—was enacted just a few weeks later.

## Annual Installed U.S. Wind Power Capacity [click to enlarge](#)



Combined with a growing number of states that have adopted renewable electricity standards, the PTC has been a major driver of wind power development over the past six years. Unfortunately, the "on-again/off-again" status that has historically been associated with the PTC contributes to a boom-bust cycle of development that plagues the wind industry (see Figure below). The cycle begins with the wind industry experiencing strong growth in development around the country during the years leading up to the PTC's expiration. Lapses in the PTC then cause a dramatic slow down in the implementation of planned wind projects. When the PTC is restored, the wind power industry takes time to regain its footing, and then experiences strong growth until the tax credits expire. And so on.

The last lapse in the PTC—at the end of 2003—came on the heels of a strong year in U.S. wind energy capacity growth. In 2003, the wind power industry added 1,687 megawatts (MW) of capacity—a 36 percent annual increase. With no PTC in place for most of 2004, U.S. wind development decreased dramatically to less than 400 MW—a five-year low. With the PTC re-instated, 2005 marked the best year ever for U.S. wind energy development with 2,431 MW of capacity installed—a 43 percent increase over the previous record year established in 2001. With the PTC firmly in place, 2006 was another near record year in the U.S. wind industry. Wind power capacity grew by 2,454 MW—a 27 percent increase. The American Wind Energy Association tallied 5,244 MW of capacity installed in 2007 and a record of over 8,500 MW of capacity installed in 2008.

Short term extensions of the PTC will allow the wind industry to continue building on previous years' momentum, but it is insufficient for sustaining the long-term growth of renewable energy. The planning and permitting process for new wind facilities can take up to two years or longer to complete. As a result,

many renewable energy developers that depend on the PTC to improve a facility's cost effectiveness may hesitate to start a new project due to the uncertainty that the credit will still be available to them when the project is completed.

UCS is continuing to work with our coalition partners to extend and revise tax incentives for renewable energy that help boost development of clean renewable electricity, not polluting energy sources.