

# Energy Politics And Economic Effects Of The PTC

*Although the PTC has expired three times, Republican and Democratic congressional leadership have revealed a commitment to renewables by extending the PTC while in power.*

BY ALLAN T. MARKS

As global climate change and the confluence of environmental and political issues associated with American energy independence move into the Washington spotlight, interest in wind energy has soared. Federal and state lawmakers have adopted a combination of carrots and sticks in order to drive development, including accelerated depreciation of certain wind energy assets.

As a step toward a federal renewable portfolio standard (RPS), the U.S. House of Representatives recently passed legislation calling for the nation's electric utilities to obtain at least 15% of their wholesale electricity from renewable sources, or to use other market-based mechanisms (like buying renewable energy credits and investing in energy efficiency measures) to meet some of that goal. But the most significant federal policy to encourage development of wind energy projects is the federal production tax credit (PTC).

## **PTC for wind energy**

The federal PTC has been crucial to the recent expansion of the wind power market in the U.S. Unless extended, however, the current PTC will expire on Dec. 31, 2008.

Congress helped facilitate rapid growth in the wind power industry

by providing a PTC of \$0.015 per kWh, indexed for inflation, in the Energy Policy Act of 1992. The current value of the PTC is \$0.02 per kWh. In the 15 years since its adoption, cumulative U.S. wind power generating capacity has increased fivefold from just under 2,000 MW to over 10,000 MW today. By partially subsidizing wind power investments, the PTC has indirectly boosted investment in technology and manufacturing capacity for wind turbines. In turn, more efficient and reliable technology has rendered wind energy more competitive.

But periodic, short-term extensions of the federal PTC have also led to a yearly boom-bust cycle from 1999 to 2004. In the three years in which the PTC was allowed to lapse (2000, 2002 and 2004), the industry experienced a pronounced slowdown in wind capacity additions.

For example, while wind generation capacity grew by more than 1,500 MW in 2001 and 2003, less than 500 MW of capacity was added in 2002 and 2004, when the PTC was unavailable. Renewal of the PTC for wind in the 2005 Energy Policy Act ensured two consecutive years of sizeable growth. In 2006 alone, U.S. wind power capacity increased by 27%. So, there is a direct correlation

between the PTC and new investment in wind power generation.

## **Politics**

Although Congress allowed the PTC to expire three times, both Republican and Democratic congressional leadership have previously demonstrated their commitment to renewable energy by introducing and extending the PTC while in power. House Speaker Nancy Pelosi, promising to make fighting global warming a domestic priority of the 110th Congress, has supported renewable energy legislation.

For his part, President Bush has suggested that up to 20% of the nation's electricity could be provided by wind. The administration's support for the PTC depends, in part, on the bigger political question of how to pay for it. Specifically at issue in the current debate is how long the PTC should be extended, the amount of the PTC, whether it should be capped and whether it should be indexed for inflation.

In August, the House of Representatives passed legislation to extend the PTC beyond 2008. It was not an easy road, and the Senate has yet to pass similar legislation. To some extent, the PTC debate is complicated because it falls into three contentious areas: energy policy, environmental

protection and the tax bill.

On the tax side, the House Ways & Means Committee first considered the Renewable Energy and Energy Conservation Tax Act of 2007 (H.R. 2776), a bill to amend the Internal Revenue Code to provide tax incentives for the production of renewable energy and energy conservation, on June 20. This revenue-neutral bill passed through the crucial Ways & Means Committee with bipartisan support. As approved by Committee, the bill extended the PTC for four years (indexed for inflation) but limited the value of the credit to 35% of total project costs (referred to as the "cap" or "phase-out").

Meanwhile, efforts to enact comprehensive energy legislation were progressing on a parallel track. On July 30, Pelosi introduced the New Direction for Energy Independence, National Security and Consumer Protection Act (H.R. 3221). The bill enjoyed the support of a number of influential co-sponsors, including Rep. John Dingell, the Chairman of the House Energy & Commerce Committee, and Rep. Charlie Rangel, the Chairman of the House Ways & Means Committee – also a sponsor of H.R. 2776.

Finally, by a vote of 241-172, the U.S. House of Representatives on Aug. 4 passed H.R. 3221, the comprehensive energy bill. At the same time, the House adopted the renewable energy bill, H.R. 2776, though by a closer margin of 221-189, and amended it to the energy bill. The amendment by Reps. Tom Udall, D-N.M., and Todd Platts, R-Pa., called for the establishment of a national RPS (termed a renewable electricity standard, or RES) and also included the four-year, indexed but capped PTC extension.

A similar measure, offered as an amendment to H.R. 6, the CLEAN Energy Act of 2007, stalled in the Senate in June. The Senate amendment, offered by New Mexico Sen. Jeff Bingaman, fell three votes short of cloture, which would have ended debate to allow a full Senate vote on

the measure. It is likely that there are four votes to revive the measure in the Senate, including that of Sen. Harry Reid. Wind energy advocates in Washington are convinced that the required 60 votes to end Senate debate exist. The matter likely will be taken up again in the fall.

The PTC legislation before the Senate differs from the bill that passed the House. The stalled Senate amendment would have extended the PTC for five years, not four. But the Senate bill would freeze the credit at \$0.02 per kWh, rather than index the credit for inflation – as had the initial law and previous reauthorizations. Neither the Senate bill nor current law includes the cap or phase-out of the PTC at 35% of project costs found in the House bill.

### **Economics**

Rather than freezing the credit arbitrarily, indexing the credit for inflation would ensure that wind developers in 2012 benefit from the same, full incentive as wind developers in 2009. In a low-inflation environment, the impact of indexing is less dramatic, but low inflation is not guaranteed in the years ahead. Rapid increases in the cost of copper, steel and concrete, coupled with a weak dollar, have already increased significantly the capital costs of constructing a wind project, in some cases by as much as 50% in just two years.

Indeed, one of the chief arguments for extending the PTC for more than just a few more years is to create a stronger market that can support larger investments in domestic manufacturing of competing wind turbine technologies. This, in turn, apart from normalizing wind turbine prices, would insulate U.S. wind developers somewhat from the inflationary pressures and currency risks of relying on imported equipment.

According to statistics published by the U.S. Department of Energy, after experiencing steady declines in each of the previous seven years, the cumulative capacity weighted average wind power price rose in 2006 to \$36

per MWh. Should costs continue to rise, the inflation adjusted discount of the PTC, unless indexed, may render it ineffective. Removing or discounting the subsidy at a time when the industry faces dramatically higher development costs may thwart the expansion of a proven and efficient renewable energy source.

It is also unclear how the phase-out or cap (at 35% of project costs under the House bill) serves the goal of fostering more wind power. The full utilization of the nation's wind resources may be artificially stymied by an arbitrary cap. Indeed, the cap appears designed mainly as a budgetary gimmick to reduce the projected cost of the extended tax credit.

Importantly, extension of the PTC likely would not result in higher retail electricity prices. Consumers may even benefit from a long-term price hedge against localized effects of volatility in global hydrocarbon markets. The main expected effect of the PTC is to increase both renewable energy capacity and overall installed generating capacity, while shifting marginal electricity output from gas-fired power plants to as-available renewable resources at periods of peak demand. This effect is significantly more pronounced the longer the PTC is extended up front.

In the PTC extension analysis provided to the House Committee on Ways & Means before its consideration of H.R. 2776, the Energy Information Administration (EIA) analyzed the impacts of possible PTC extension on sector capacity, generation, prices and emissions. Notably, the report concludes that a five-year extension of the full PTC for wind facilities increases installed generation capacity in 2030 by almost 40%.

The analysis documents how extending the PTC for five years would result in an additional 6 GW of wind capacity by 2030, but not at the expense of capacity growth among other energy sources. The EIA analysis further predicts that a five-year extension of the PTC will result in a relative decline in electricity generated

from natural gas by about 28 billion kWh versus the non-extension reference case, through 2020. Additionally, increased generation from wind slightly slows nuclear and coal expansions, though overall reserve margins – and hence, system reliability – somewhat increase. As demonstrated by the predicted decline in natural gas generation – but not capacity – an extension of the PTC displaces non-renewable “marginal producers” of electricity.

Additionally, increased wind production can lower the spot price on the marginal unit of electricity, which, along with higher reserve margins, makes financing natural gas projects on a merchant basis more challenging. The EIA analysis also shows how the PTC extension reduces carbon dioxide emissions with very little, if any, change in electricity prices.

Uncertainty about PTC extension has had an adverse impact on capital investment in the manufacture of blades, turbines and other wind power components. The repetitious, boom-bust development cycle that has plagued the industry from its inception has slowed research and development – at least in the U.S. – and thwarted steady investment in the development of an efficient and proven renewable energy source.

Although it is true that uncertainty about the extension has provided the incentive to get some projects developed quickly and hastened the mobilization of capital in sporadic

bursts, the long-term health and stability of the market depend on a longer extension to the PTC.

### **The federal budget**

The long-term reauthorization of the PTC may be further complicated because of the complexity of the federal budget scoring process and recently adopted “PAY-GO” rules. Under House and Senate rules adopted, respectively, in January 2007 and May 2007, each chamber is prohibited from considering revenue or direct spending legislation that increases a deficit (or reduces a surplus) over six-year (House) and 11-year (Senate) periods, beginning with the current fiscal year. The EIA analysis suggests that a five-year extension of the current PTC would cost \$5 billion in lost revenues, spread over the 10-year life of the credit. Because an extension of the PTC requires amendment to the Internal Revenue Code and will reduce federal tax revenues, House and Senate PAY-GO rules apply. Hence, the existence of devices like caps and loss of indexing to reduce the estimated PTC revenue cost.

Projecting the forward fiscal cost of PTC extension has proven to be a complicated task for the Congressional Budget Office (CBO). The sheer number of independent variables affecting wind development has made it difficult for the CBO to estimate the fiscal cost of the PTC. For example, whether or not Congress adopts a national RPS will inevitably affect the number of wind installa-

tions, and consequently, the fiscal cost of PTC extension. Factors extrinsic to U.S. government policy further complicate the budget scoring process. To the extent that rising costs of raw materials slow wind development, Chinese economic development and a weak U.S. dollar may also affect the fiscal cost of PTC extension.

Although certainly an obstacle to long-term PTC reauthorization, difficulties associated with the PAY-GO requirement and budget-scoring process can be overcome. For example, though the House bill provides \$16 billion worth of incentives for the production and conservation of energy, it is entirely revenue-neutral. The bill offsets lost revenue by stripping away tax deductions for certain oil and natural gas activities. The political cost of this trade-off – or other alternatives – will be seen if the House and Senate finally pass a reconciled energy bill for the president’s signature later this year. **ENR**



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