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Wind power set to decline under Obama?

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Topic: Alternative energy
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For the fourth consecutive year, the US set records in 2008 for the construction of new wind farms, with more than 8,300MW installed in the year, making the country the leader for both yearly installations and, for the first time in many years, overall installed capacity (nudging out Germany which has long been the world leader). The sector created a record number of jobs at a time when few other sectors did.

But for reasons linked to the inconsistent regulatory framework until now, and to the ongoing credit crisis, 2009 is likely to be a bad year for wind, with a decline in installations and, possibly, layoffs.

Of course, Obama is not to blame for that situation, which he inherits, but it will be a pretty bad signal to see wind power decline significantly this year - and it would be an inexcusable one if that decline continues into 2010. The current stimulus plan does include measures to support the industry, but these seem oddly unambitious given the context of economic crisis and wind's proven ability to create jobs and economic activity, to provide cheap power and to eliminate both carbon emissions and fossil fuel imports.

Earlier diaries: Windpower series

First, the good news for the past year:

> WIND ENERGY GROWS BY RECORD 8,300 MW IN 2008
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> The U.S. wind energy industry shattered all previous records in 2008 by installing 8,358 megawatts (MW) of new generating capacity (enough to serve over 2 million homes), the American Wind Energy Association (AWEA) said today, even as it warned of an uncertain outlook for 2009 due to the continuing financial crisis.
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> The massive growth in 2008 swelled the nation's total wind power generating capacity by 50% and channeled an investment of some $17 billion into the economy, positioning wind power as one of the leading sources of new power generation in the country today along with natural gas, AWEA added.
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> (...)
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> The new wind projects completed in 2008 account for about 42% of the entire new power-producing capacity added nationally last year, according to initial estimates, and will avoid nearly 44 million tons of carbon emissions, the equivalent of taking over 7 million cars off of the road.
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> (...)

> About **85,000 people are employed in the wind industry today, up from 50,000 a year ago**, and hold jobs in areas as varied as turbine component manufacturing, construction and installation of wind turbines, wind turbine operations and maintenance, legal and marketing services, and more.
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> (...)
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> Wind power's recent growth has also accelerated job creation in manufacturing, where the share of domestically manufactured wind turbine components has grown from under 30% in 2005 to about 50% in 2008. Wind turbine and turbine component manufacturers announced, **added or expanded 70 new facilities in the past two years**, including over 55 in 2008 alone. Those new manufacturing facilities created 13,000 new direct jobs in 2008.

Massive job creation; large turnover (44% of capacity installation means more than half of turnover of the power construction industry, given that wind MWs are more expensive than gas-fired one to build - which does not mean that electricity is more expensive, as there is no need to buy gas to produce it...); significant carbon displacement. What's not to like?

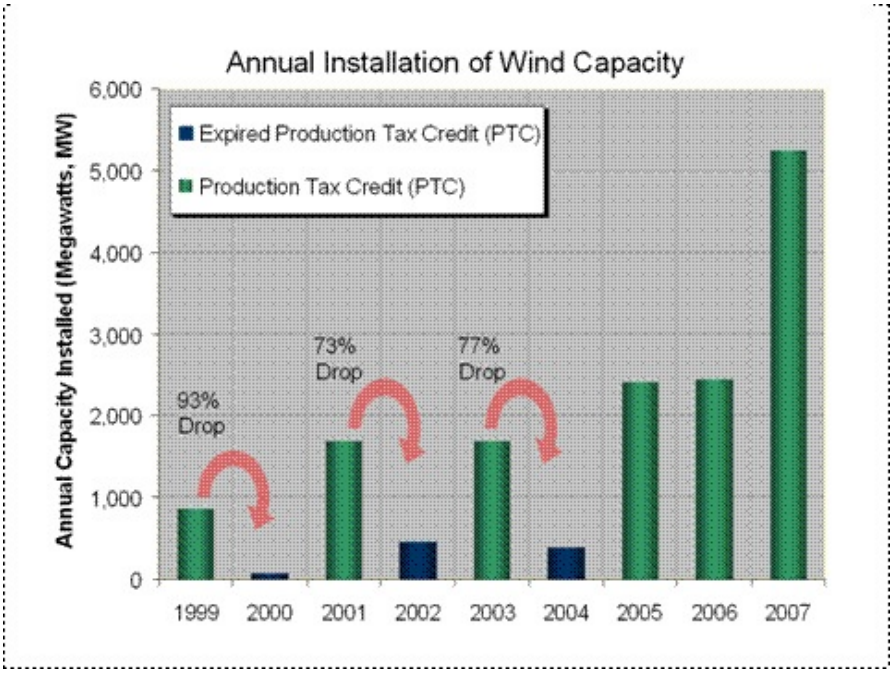
A very recent European study suggested that wind creates 15 jobs per MW built in the year of construction, and 0.4 permanent job per MW installed:

Employment/MW (2007)	Jobs	Jobs/Annual MW	Jobs/Cumulative MW	Basis
WT manufacturing – Direct	64,074	7.5		Annual
WT manufacturing – Indirect	42,716	5.0		Annual
Installation	10,665	1.2		Annual
Operations and maintenance	18,657		0.33	Cumulative
Other direct employment*	15,204	1.3	0.07	75% annual/25% cumulative
Total employment	151,316	15.1	0.40	

* IPP/utilities, consultants, research institutions, universities, financial services and other.

You'll note that the US, with 85,000 jobs, was close to catching up on Europe, in just a few years; with a lot more room to build more (and cheaper) wind farms onshore, there was no reason why the industry could not power ahead in coming years.

However, two things are endangering this: regulatory uncertainty, and the credit crisis.



As the above graph shows, the lack of consistency in the regulatory framework in the US has already killed the industry 3 times over the past decade: the PTC (production tax credit), the main federal scheme to support wind, has been mishandled to a criminal extent - by being renewed much too late each time it was due to lapse.

This happened once again this year, with the PTC for projects built in 2009 becoming law only in November (as part of the Paulson TARP). Given that you need a number of months to build a windfarm, all projects that could not be completed before the end of 2008 - ie basically all projects for which construction could not start before last summer, were stopped until investors were sure that the PTC would be in place at the time of completion (because the PTC drives the level of revenues for the first 10 years of production of a windfarm). Construction decisions taken after the November resinstatement will only lead to projects being put in line much later in 2009.

But, in addition to this instability, the credit crisis is creating additional difficulties, in two ways.

- The first one is that the PTC was turned into money to build the wind farm thanks to investors willing to provide future tax payments from which the PTC could be deducted; the most active investors in that market were the big invesmtent banks like Lehman or Morgan Stanley, who have either disappeared or have seen their profits (and thus their ability to cash in PTCs) disappear. This has been solved to some extent by allowing utilities to get the PTCs, something they were prevented from doing until now, but it requires tweaking to investment structures that had been put in place.

- The second issue is, of course, that the credit crisis has made lending a lot scarcer. Wind, where most of the costs are upfront, in the initial construction investment, relies to a large extent on debt financing to make it possible to spread that investment cost over very long term power production volumes. Such debt is a lot harder to find, and when available, is more expensive than it used to be. There is no easy solution to that, although the proposal in the current stimulus plan to authorise projects to convert the PTC into an "ITC" (ie a direct investment subsidy paid upfront) will be a major help.

So the situation now is that we have an industrial activity which provides a lot of good things, but is handicapped in the short term by the consequences of past bad government and the credit crunch. 2009 will be a mediocre year, that much is pretty much certain by now, given that minimal lag time for projects, but it would be rather incomprehensible if 2010 did not show a massive turnaround.

This does not require massive subsidies, but a few small things:

- an acknowledgement that wind is a large-scale solution (not a silver bullet, not the only solution, but a good part of the solution to a number of problems) that needs to be taken seriously and not just as a bone given to green groups to appease them;

- in turn, all that wind needs is a stable regulatory framework. The PTC works, but it needs to remain in place for more than a year or two at a time. State RPS (renewable portfolio standards, ie obligations for utilities to produce a given % of their power from renewables within agreed timeframes) work, but they create a patchwork of different rules across the country. There is a need to provide a simple, consistent and permanent set of federal rules. Personally, I think that a feed-in tariff (ie a fixed price guaranteed to reneable energy producers) would be best: it works, as demonstrated in Europe, and it actually reduces electricity costs for consumers when wind penetration gets high enough (in the 5-10% range);

- the main flank of federal action will be a long term plan to reinforce the power grid in a coherent and systematic way, in order for wind to be better absorbed into the system: this

> fits perfectly well with Obama's discourse to invest in infrastructure. But it needs to be done on a scale that makes sense - not just a few billion sprinkled here or there.

Just to avoid ad hominem attacks: I finance wind power and am not a disinterested party. However, I don't finance wind in the US, only in Europe and I don't just finance wind: I finance all energy sectors, including oil&gas, traditional power and nuclear. My job is to identify risks and weaknesses of projects and we would not be financing wind if we thought that it was not inherently sound to do so; do note in that context that subsidies can make a project economically viable but they do entail political risk which we also have to take into account, especially when subsidies are high or politically contentious. This is a minor risk for wind.