

Developing and financing the American wind market

By Stefan Schmitz, McDermott Will & Emery UK LLP



The American wind market has grown at an unprecedented pace and has become the world's biggest wind market, with more and significant growth to come in the years ahead. The US has the advantage of having ample land and, in many parts of the country, very good wind speeds. There is also an increasing political will to make renewable energy a priority and to put into place the mechanisms to support it. However, the US is not an island but is affected by all the storms and rough seas of the international markets. The rapid growth has also created a number of US specific problems which need to be addressed.

The American wind market is on the up. In 2008, the US wind market has, in terms of the total amount of electricity generated by wind, overtaken Germany, for many years the unreachable champion of wind power, adding an expected 7,500 MW this year alone.¹ And the US market is expected to increase its lead by adding about the same number every year, with getting as high up as 16,000 MW annually after 2018.²

What's even more impressive is that just over three years ago, at the beginning of 2005, the US had only about 6,700 MW installed.³ Three years later, the US has over 21,000 MW and is discussing to have 20 % of all its electricity coming from renewables by 2030⁴ – which would require about 400 GW of installed capacity or an increase of 20 fold in just over 21 years. The motivation, on the political side in the US, depends on where in the political spectrum the supporters stand: some argue for the need for “energy independence” or “energy security”, pointing out that renewable energy is generated without the need to import fuels from outside the US; others argue environmental aspects and that renewable energy reduces greenhouse gases and global warming. However, the reason for the US market to have grown the way it has and will continue to do, is most of all its profitability. Developers come to the US because they can make much higher development profits than in Europe, investors can get higher rates of return (IRR) here than for wind projects in most other countries, lenders have been happy to lend to an industry with low risk proven technology and rated off-takers who guarantee safe cash-flow into the projects. The American wind market is, however, not without problems and snags, some of which are the price for the rapid growth experienced in recent years, and some of which are part of the global economy in

general and the state of the wind industry therein in particular.

Grid connection

Probably the greatest problem, and challenge to bankability, of the US wind market at the moment is the lack of sufficient grid capacity, especially in areas where wind projects could operate most successfully. The independent grid operator MISO, for example, has enough applications that it would, in theory, need many years to go through them. MISO and other operators have therefore introduced new rules and higher costs for grid connection studies which have to be conducted. These increases will not destroy the economics of projects, but they introduce new means to separate genuine and feasible projects from applications which are not considered valid and only add to the workload and backlog on the ISOs.

The grid capacity situation has introduced a new kind of separation into the US wind market. While traditionally sites would be distinguished primarily according to their wind speeds, the distinction is increasingly made along the lines of grid access capacity. New rules, however, will not sort out the grid capacity issue but can only help to select the most feasible projects; what is needed is a massive investment in the grid to allow more wind projects to come on-line. Some of this investment is under way, often by private investment from companies who want their own projects to be connected and therefore invest in the extension of the grid themselves.

Turbines and their financing

The supply of wind turbines still represents a bottleneck in the current market. Waiting times for turbines have gone down, but are still significant, and

can still take up to 18 months. This has led to what can fairly be described as a sellers market. While this will change over time if and when existing manufacturers increase their production facilities in the US and new companies, notably from China, Korea and India enter the market, the power of the turbine manufacturers is currently unchallenged. As a result, manufacturers are able to impose conditions which, under different market circumstances, would have no chance of being accepted. For a start, manufacturers do not simply accept orders but require details about the project, location, etc.; some manufacturers require significant level of detail, including information about the financing, the off-take and other financial details. Even more importantly, the manufacturers demand significant down payments with the order. These payments can range between 15% and 30%, depending on the strength of the buyer and its relationship with the manufacturer. The problem with making a down payment is that many developers do not have the financial strength to pay them and funds originating from traditional project finance would only become available after financial close. If the turbines are ordered after financial close, the project could only commence operations after the waiting period, say 18 months later. If turbines are to be ordered earlier, for example, after signing land leases, but well before financial close, the project could start operations much closer to financial close but the developer would have to make the required down payments at the described early stage. A number of ways exist to avoid that dilemma have previously been discussed and applied. Although they do not advertise this widely, some banks, for example, have been seen to move the financial close of a project forward so as to include the down payment in the project finance.

Offtake and its legislative framework

The offtake of wind generated electricity in the US has always given a much more diverse and patched picture than in Europe. Many of the states in the US (currently 28⁵) now have a renewable portfolio standard (RPS). Under the RPS legislation which varies, and sometimes significantly so, from state to state,⁶ the utilities in that state are required to have a certain share of their electricity come from renewable energy sources. The RPS model therefore parallels the green certificate system in the EU, notably the UK ROC system. Under RPS legislation, the utilities are not required to buy electricity from a every renewable energy projects as they would be under a feed-in tariff; all the RPS does is generate artificial demand for renewable electricity: the utilities have to have some of it in the mix of

electricity but where they get it from, is basically left to them. So, they can build their own projects, they can team up with developers or other parties to supply all the renewable electricity they need or they buy it from the lowest bidder in the market.

The latter is an approach favoured by a number of utilities in the US. They calculate how much renewable electricity they need to meet the RPS requirement, subtract whatever they can supply themselves or from other sources, and then invite bids for the missing capacity. Naturally, the 'winner' of these tenders is the project which offers the lowest price for its electricity and, until recently, project companies or independent power producers were competing against each other to offer the lowest prices, sometimes at levels around US5cent/kWh, a price that would have been unsustainable in Europe. However times have changed, not least because there are now more states with RPS legislation now and, what's more, with very ambitious targets which force the utilities to offer higher prices for wind electricity.

There is widespread belief in the US that the new incoming administration, be it Democratic or Republican, will further strengthen renewable energy in the US. Congress is debating a Federal RPS.⁷ If this were to happen, in other words, if every utility has to have a certain percentage of its energy come from renewable energy sources, the US market is likely to grow even faster and at a pace hitherto unprecedented in any market or business. Depending, of course, on the details of such legislation, utilities which have not yet had any interest or experience in renewable energy will try to secure access to renewable electricity and the credits which are given to renewable energy will increase substantially in value. Not surprisingly, US utilities with experience in renewable energy are gearing up for this situation to secure wind projects, less so because of the electricity generated from these projects but because of the certificates they will get and which they can sell to their less experienced brethren.

A Federal feed-in tariff in the US at the moment seems less likely. Steps for such legislation which would mirror the successful German model are being discussed in a number of states, notably California, Minnesota, and Michigan.⁸ A bill for a Federal feed-in tariff, albeit only applicable to projects under 20 MW, was introduced in Congress in June 2007,⁹ but it appears that the American public, and with it American politicians, would not accept legislation which would completely remove any market element and the freedom to barter – at least not at the moment. Ironically, studies have

shown that, despite the lack of market forces, a feed-in tariff will actually be cheaper for the consumers than a certificate system as the RPS provide.¹⁰

Costs and profitability

The costs for wind projects in the US have, like everywhere else, increased in recent years, although, as mentioned, the increases have not dented the profitability of most projects. Costs for turbines in particular have gone up substantially. This is not only the result of the omnipresent and much quoted shortage of turbines, it is also the result of an increase in the costs for commodities like steel and copper which are essential for wind turbines.

Additionally the cost of land has gone up. This is not necessarily the result of a shortage of suitable land for wind projects but rather that of increasing awareness among land owners: they exchange information and learn how much is paid in other parts of the country. So, the days where farmers accepted option agreements for US\$1 per year/acre are gone, and the share of revenue of a wind project for which the landowners are asking has steadily gone up. This development does not, however, render wind projects uneconomical. Costs for land rights are still within acceptable parameters, and the development in the US is not unlike that in Germany where farmers were happy with the smallest of contributions in the early days and where there is now a generally accepted regime of prices and revenue shares for leased land. Because of the grid capacity situation, described above, there is actually a lot of good wind land available in which no project developer is interested because of the lack of grid connection. Thousands of acres are, for example, offered in Texas in areas which have very little chance of grid connection in the foreseeable future. Conversely, lands on the East Coast, especially in states with an ambitious RPS, currently fetch very high prices.

The profits that developers can expect from American wind projects tend to be significantly higher than the figures seen in Europe. A figure up in the high single digits of the total investment for a wind park which has a good PPA, turbines, grid connection, etc. is not impossible.

Financing and tax credits

Almost every indication visible in the market is that the renewable energy market has been relatively unaffected by the current credit crunch. However, this general and rather positive picture needs to be put into perspective in some areas. First of all, it is still true that the largest share (until recently as much as 75%) of financing wind projects in the US

comes from European banks, often working out of their New York offices but with credit committees sitting in London, Frankfurt, or Milan. This share is not surprising if one considers how long these banks have been involved in wind energy and how much experience they have gathered over the years and how much they have educated their credit committees about the risks (or lack thereof) and details of wind projects. American banks lag many years behind although they are trying to, and doing a good job, with catching up quickly. Many of the US banks which have shown an interest in financing wind projects are local and regional banks with a lot of experience in real estate financings – and are thus those which have been hit most by the credit crunch. Their funds for new investment are limited and their credit committees are cautious about projects in which they have little experience. Moreover, the terms that American banks are offering are very often not as favourable and tailored for wind projects, which European banks have offered to for many years. European banks, for example, lend for periods of 12 years plus; a period very few American banks are currently prepared to offer but which is necessary for the economics of most wind projects.

It has often been argued that the success of the American wind market is owed to, and depends entirely upon, the PTC and their continuous and timely extension. The current PTC expires at the end of 2008 and it is not sure, in fact unlikely, that they will be extended in time. While it is true that the PTC adds US\$0.02 in credits to every kW of wind generated electricity, many projects would struggle without these two cents and that, if nothing else changed, the market would indeed suffer significantly, although this is only part of the equation. The driving factor in today's US wind market is not so much the PTC but the portfolio standards: they (artificially) generate the demand for wind energy by forcing the utilities to have a certain share coming from renewable sources. Without the PTC, this requirement still exists and the utilities still have to find wind generated electricity – be it supported by tax credits or not. What will happen is that IPPs, for example, will not be able to accept as low a price because the cash flow is reduced by two cents per kWh. Hence the projects will need to recover this loss through higher PPA prices and if the utilities are unwilling to pay this, they may not be able to get sufficient wind electricity into their mix – with the pecuniary penalties which the RPS may impose. If the PTC is not extended, the market will probably face a temporary dent but will, for the reasons stated, recover fairly quickly. The difference between the old

(PTC) system and the new one is that the burden for financially supporting renewables in the US moves from the Federal tax payer to the rate payers of those utilities which are bound by a RPS.

Note:

- ¹ Source: Press Release American Wind Energy Association (AWEA) of September 3, 2008.
- ² See US Department of Energy, www.nrel.gov/docs/fy08osti/41869.pdf, page 7.
- ³ Source: Windpower Monthly, Windicator for 2006.
- ⁴ See US Department of Energy, “20% Wind Energy by 2030: Increasing Wind Energy’s Contribution to US Electricity Supply”, July 2008, (www.nrel.gov/docs/fy08osti/41869.pdf).
- ⁵ Source: Database of State incentives for renewables and efficiency (DSIRE), see: www.dsireusa.org , plus Michigan passed an RPS in September 2008.
- ⁶ California, for example, requires 20% from renewables by 2010; Texas requires 5,880 MW by 2015 but has almost achieved this target already. Some states even accept clean coal as “renewable energy” within the meaning of the act.
- ⁷ At the time of writing this article, a bill has been passed in the House of Representatives which would require 15% of electric generation to be

fuelled by renewable sources by 2020, starting with an ambitious 2.75% in 2010, see: www.govtrack.us/congress/bill.xpd?bill=h110-6899.

- ⁸ California see: www.renewableenergyworld.com/rea/news/story?id=50748, Minnesota: www.renewableenergyworld.com/rea/news/infocus/story?id=51567; Michigan: www.renewableenergyworld.com/rea/news/story?id=50004.
- ⁹ www.house.gov/delahunt/feedin.pdf
- ¹⁰ See, for example, STERN REVIEW: The Economics of Climate Change, Chapter 16: Accelerating technological innovation (2006), page 366, www.hm-treasury.gov.uk/media/C/7/Chapter_16_Accelerating_Technological_Innovation.pdf

Stefan Schmitz
Partner
McDermott Will & Emery UK LLP
7 Bishopsgate
London EC2N 3AR
Tel: +44 (0) 20 7575 0376
Fax: +44 (0) 20 7577 6950
E-mail: sschmitz@mwe.com
www.mwe.com