

RATINGS COMPASS

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Ratings Update

Following the rating of two JI projects earlier this month, The Carbon Rating Agency (CRA) rated two more Joint Implementation projects as part of its Market Initiated Ratings Initiative. With this, the Agency has so far rated four JI projects in addition to several other projects mainly from the CDM domain. The two JI projects this week are a hydro power and a gas flaring project located in Bulgaria and Russia respectively.

In addition to the above, the Agency has added one more CDM project to the rated portfolio - a hydro power project in Chile.

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Comment

As part of the *Market Initiated Rating Scheme (MIR)* the CRA has analyzed several wind energy projects in China, India and the Philippines. Recently it added a portfolio of wind power plants in the Ukraine that qualified under Joint Implementation (JI) to its growing pipeline of projects.

Today, wind power is almost economically competitive with conventional sources of electricity. Increasing volatility in fossil fuel prices and concerns about energy supply have triggered large investments into renewable energy technologies, especially wind. The wind power market has been witnessing continuous growth over the past years and has seen another record year in 2007 with 20 GW of new installations - a 30% increase compared to 2006.

News Flash

"Suitability of the benchmark used in the investment analysis"

Increasingly, the Executive Board of the CDM is sending projects for review, requesting in particular that the "suitability of the benchmark used in the investment analysis" be re-assessed. Several projects recently examined by the CRA provide some insight into the trickiness of this part of the analysis. Reviews of energy efficiency and hydropower projects confirmed again that the contribution of CER revenue to overall income of certain types of projects is almost always limited.

Renewable energy projects, particularly those which have the benefit of some form of "green tariff", can be in the position where CER revenues - depending of course on price - may be of the order of perhaps only 5% of the power sales revenue. Carrying these figures through the IRR estimates will then result in "with CER" outcomes that are only one or two percentage points higher than the base case. It is not surprising that reviewers become suspicious when the "benchmark" falls neatly in between the two sets of calculations and so the additionality is happily "proven".

However, there are cases where the CER revenue is very important, even where the shift in IRR is small, and which can still be argued convincingly for additionality. The key lies in the financing structure. CER revenues can often add 10% or more to the project cash flow, which may be critical in negotiating with lenders on risky projects or in cases where local finance is difficult to raise.

As more scrutiny is placed on investment analysis, barrier arguments may become more relevant, at least in renewable energy cases.

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Under the clean development mechanism (CDM), China and India together account for 80% of all wind energy CDM projects. However, from the CRA's analysis of wind projects it appears that additional income from CDM may not in all cases cover the relatively high transaction and implementation costs, particularly with fluctuating carbon prices. It has been observed that monetizing carbon credits change project returns for wind projects by up to just 1 – 1.5%. Consequently, CDM financing for wind supports only 5 – 6% of the wind sector total installed capacity.

Therefore, the viability of wind projects, and renewable energy technologies in general, largely depends on a stable regulatory framework providing investors with the necessary confidence of relatively secure project returns. For example, fixed feed-in tariffs or long-term Power Purchase Agreements (PPA) – national or regional incentive structures to encourage the adoption of renewable energy through government legislation as utilities are obligated to buy renewable electricity at a premium price set by the government – have proven to deliver the most wind capacity, whereas quota and certificate mechanisms have proven less successful. Furthermore, the largest price reduction of renewable technologies and learning curves are found in markets using feed-in tariffs.

In addition to a stable regulatory framework, component prices and financing terms have a big impact on the economics of wind power projects as wind power projects are very capital intensive. Therefore wind power generation costs are also highly dependent on wind conditions, turbine load factor as well as operation and maintenance costs. As a consequence of the rapid expansion of wind power there are constraints in the turbine supply market, with the installation of new projects often being delayed by approximately two years. Hence, the cost for turbines and installed project cost has risen considerably. Even though lenders to wind energy projects require less consents from project developers than they used to, it is a *sine qua non* for every project developer to have a turbine supply contract in place to secure up front finance. This is based on the premise that the turbine supply agreement is a valuable asset, which could be sold to recover the debt in the case that the project failed to reach construction.

While suppliers are trying to increase their manufacturing capacities to meet demand, they in turn face the hurdle of securing key components such as gearboxes and bearings. Hence developers tend to turn to smaller, less experienced turbine manufacturers to meet their project requirements, which in turn exposes projects to increased technical risks associated with less well proven technologies. However, while the CRA was looking at the Chinese wind projects, it did not go unnoticed that the Chinese turbine industry, which used to be dominated by foreign manufacturers such as Vestas of Denmark, GE of the US or Gamesa of Spain, for the first time last year secured 50% of Chinese market share. Goldwind, being the turbine supplier to some of the projects rate by the CRA, is the biggest player by market share (22%). The firm is reported to have grown by 100% for each of the past eight years and is in discussions to export turbines to Pakistan, the Philippines and South Korea.

However, turbine supply shortages are not the only hurdles project developers have to overcome. Analyses showed that many markets are lacking a suitable grid infrastructure. Either wind farms are far from demand centres, requiring substantially more money to construct transmission lines and substations, or large wind farms or portfolios due to their size require the upgrading of grid connections in order to absorb the electricity produced by the plant. This can lead to severe delays in constructing and connecting otherwise viable wind projects.

The CRA's analysis of wind projects reconfirmed that the points discussed above – long-term PPA or a premium electricity price, turbine supply contracts and enhancement of grid infrastructure – prove to be a prerequisite for the performance of wind power projects.

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