South Korean wind

Wind speeds up in SK

Developers and financiers of renewable energy projects in Asia have been watching with interest the development of the South Korean wind power market. By Bruce Weller, director, BNP Paribas, Singapore and **Stephen McWilliams**, partner, **Latham & Watkins LLP**, Singapore.

Two recent projects, the Youngduk wind power project, which closed in September 2004 and achieved project completion in May 2005, and the Gangwon wind power project, which was inked on May 20 2005, represented key steps towards the development of a significant renewable energy market in South Korea. Of particular importance was the Youngduk financing, which was the first non-recourse financed wind power project to reach financial close in Asia (ex-Japan and Australia). This article examines the state of the market in South Korea as well as the background and details of the Youngduk and Gangwon wind park power financings.

Wind power in South Korea

Background on the South Korean electric power industry - The South Korean electric power industry is in the process of restructuring pursuant to the Restructuring Plan for the Electric Power Industry issued by the Ministry of Commerce, Industry and Energy (MOCIE).

Currently, the South Korean electric power industry is under phase 2 of the restructuring - Generation Competition.

Six generation companies have been spun-off from the Korea Electric Power Corp (Kepco), and Kepco is now the sole transmission and distribution company. There are also several independent power producers.

Under the current electric power market system, all generators are required to sell the power they generate to the electricity buyer (currently only Kepco) through the electricity power market in accordance with the Rules on the Operation of the Electricity Market established by the Korea Power Exchange (KPX). The current electricity market is characterised as cost-based pool because the market price reflects the actual variable costs of the generators. KPX receives offers of generating capacity from generators and calculates the system marginal price based on the most expensive generation cost variable.

The South Korean government has announced that it plans to increase the share of renewable energy to 5% of energy consumption by 2011. To this end, it has announced that it intends to concentrate support on hydrogen fuel cell, photovoltaic and wind power technologies.

To meet this requirement, significant new investment in wind power projects will be required in South Korea over the next six years.

Tariff protection for wind power generation - The Renewable Energy Development and Dissemination Promotion Act provides that MOCIE must announce the standard price for electric power generated from renewable energy sources including wind power (the standard price), and the difference between the standard price and the system marginal price must be borne by the government if the market price is lower than the standard price for electric power.

YOUNGDUK WIND PARK DETAILS

Name	Youngduk Wind Park
Country	South Korea
Size	36.9MW (24 turbines)
Technology	NEG MICON/Vestas
Debt	Tranche 1 – E26m term loan
	guaranteed by EKF
	Tranche 2 – Won15m term loan
Maturity	Tranche 1 – March 2015
	Tranche 2 – May 2020
Status	Operational

A number of **developers are** waiting to see if MOCIE **extends this regime**

The concessionary tariff is valid for wind power projects for a period of 15 years from commercial commencement.

GANGWON WIND PARK DETAILS

Name	Gangwon Wind Park
Country	South Korea
Size	98MW (49 x 2MW turbines)
Technology	Vestas V80 – 2.0MW turbine using Optispeed
Debt	Tranche 1 – E36m term loan guaranteed
	by EKF
	Tranche 2 – Won 40 bn term loan
	Tranche 3 – E27.7m uncovered loan
Maturity	Tranche 1 – June 2015
	Tranche 2 – March 2020
	Tranche 3 – December 2016
Status	Under construction

MOCIE's most recent announcement on this was the Public Notice dated October 19 2004 (the MOCIE notice), which set out the details of governmental support for the difference between the standard price and the market price.

Under the MOCIE notice, the tariff protection amount is calculated by multiplying (i) the difference between the standard price and the monthly weighted average of the system marginal price by (ii) the quantity of generated electricity sold at the standard price.

The current standard price for wind power is W107.66/kWh. This standard price is intended to apply to projects reaching commercial operation prior to October 10 2006 (technically only the first 250MW developed prior to that date will qualify but it is not expected that this cap will be reached).

The concessionary tariff is valid for wind power projects for a period of 15 years from the commercial commencement date.

There is some uncertainty under the MOCIE notice as to what constitutes the commercial commencement date but, for the purposes of modelling expected revenue, the normal interpretation adopted by developers and lenders is to assume that this is assessed on a unit-by-unit basis (the commissioning process in large wind projects is typically either sequential, with units being completed one after the other, or phased, with completion occurring in groups).

Overall, while the regulatory regime provides a reasonable basis for investment in the sector today by significantly reducing the market risk element associated with the tariff, an extension and further refinement of the regime would greatly benefit the industry going forward. In this light, a number of developers are waiting to see if MOCIE extends this regime to encompass projects that reach commercial operation post-October 10 2006 and clarifies some of the aspects of the current legislation.

Youngduk Wind Park

Project structure - The Youngduk wind park development project is a 24 turbine (39.6MW) project in a development area located on the coast east of Youngduk (approximately an hour's drive north of Pusan City in the Republic of Korea).

The sponsors of the project are Unison Co Ltd, Armada Power Holdings SL (a subsidiary of Marubeni) and NEG MICON A/S (part of the Vestas group of companies). Unison, in addition to its role as a sponsor, performed the role of EPC contractor and O&M contractor and provided strong completion support to the project.

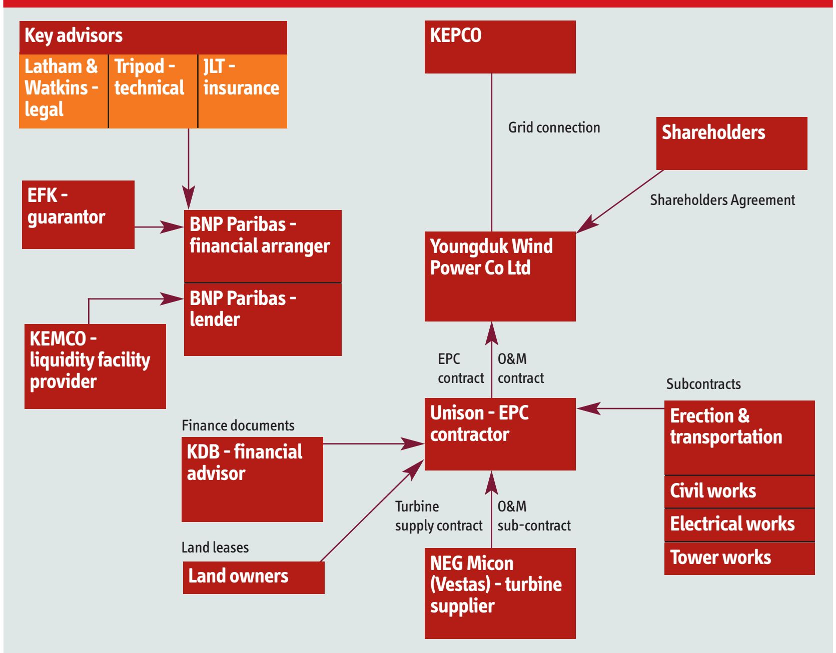
NEG MICON was the key supplier to Unison (supplying all 24 wind turbines and related equipment) and is also performing on-going operations and maintenance support services under a sub-O&M Agreement. This transaction occurred during the merger of NEG MICON and Vestas.

Korean Development Bank provided support to the project in its role as financial adviser. Counsels to the lenders were law firms Latham & Watkins and Bae Kim & Lee while the Wuhyun firm represented the project company.

Financing structure - The financing for Youngduk was provided via two tranches:

- A €26m term loan guaranteed by Eksport Kredit Fonden (EKF); and
- A W15bn term loan utilising a Korean Energy Management Corporation (Kemco) liquidity facility.

YOUNGDUK WIND PARK CONTRACT STRUCTURE



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The Kemco liquidity facility is designed to encourage the financing of renewable energy projects through the provision of soft loans to lending institutions for onwards lending to a project at a margin below that payable on pure commercial facilities.

Kemco provides the actual funds but the lending institution bears the risk of a borrower default (as repayment is due to Kemco regardless of whether the borrower defaults).

MOCIE guidelines provide that the maximum amount of facilities available in any year is (at the time of this article) W20bn.

Loans made must be repaid in instalments over the full 10 years after a five-year grace period on repayments.

Youngduk achieved project completion in May 2005, in accordance with the construction schedule.

Gangwon Wind Park

Project structure - The Gangwon Wind Park project is a 98MW (49 x 2MW turbines) project located in Pyungchang County, Gangwon regional Province, in South Korea.

The sponsors are Unison Co, Axia Power Holdings (a subsidiary of Marubeni), Eurus Energy Investments (a subsidiary of Eurus Energy Holdings Corp), Korea Midland Power Company, Military Mutual Aid Association, and Lahmeyer International.

Vestas Asia Pacific and Unison Co are performing the role of joint EPC contractors. Construction has commenced, with the project to be completed in three phases - January 2006 for Phase 1, April 2006 for Phase 2 and December 2006 for Phase 3.

The technology supplied by Vestas is the V80 2.0MW turbine. Despite initial teething problems when this model turbine was introduced in 2002, it is now seen as reliable, proven technology.

Latham & Watkins and Bae Kim & Lee again acted for the lenders on this transaction.

Financing structure

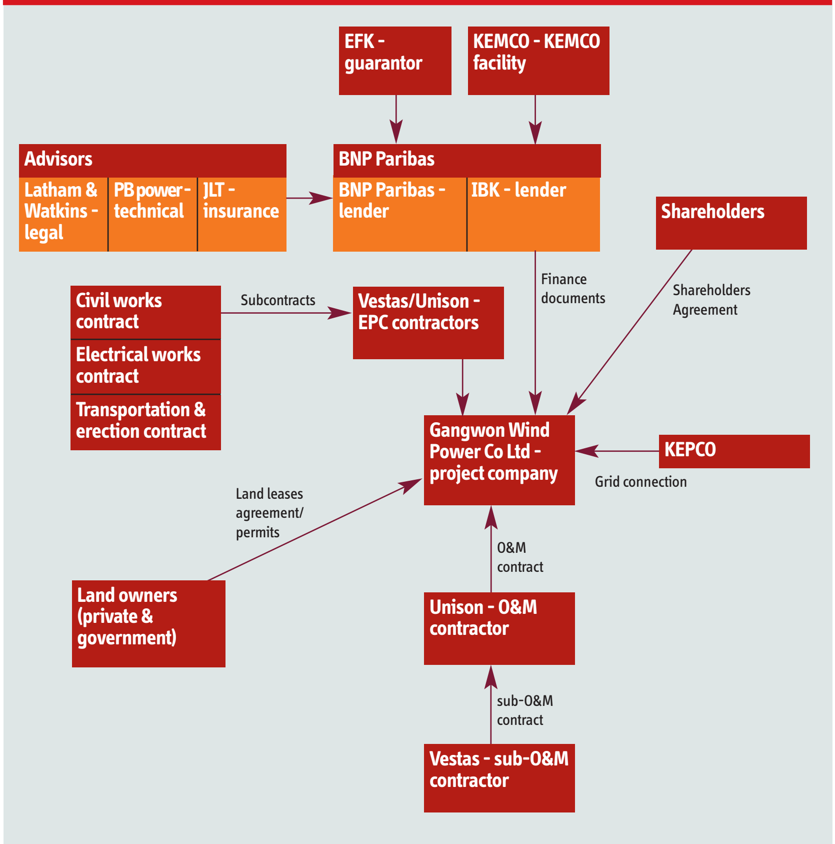
BNP Paribas and Industrial Bank of Korea together provided the loan facilities for Gangwon. These facilities comprised:

- A €36m term loan guaranteed by Eksport Kredit Fonden;
- A W40bn term loan utilising a Kemco liquidity facility; and
- A €27.7m commercial term loan.

Other issues

The Gangwon deal was also one of the first projects to be signed following the coming into force of the Kyoto Protocol on February 16 2005.

GANGWON WIND PARK CONTRACT STRUCTURE



The Protocol requires signatory nations to reduce their greenhouse emissions to 5.2% below 1990 levels between 2008 and 2012.

The Protocol provides an important compliance option known as the Clean Development Mechanism (CDM), which allows countries or companies to sponsor emissions reduction projects in developing countries and use those credits to meet emission caps.

The Gangwon project aims to seek certification under the Protocol, which would enable the offshore sponsors to claim and trade CDM credits. The financing structure is designed to ensure that this is encouraged while ensuring that appropriate security is put in place in favour of lenders.

Conclusion

The successful financings of the Youngduk wind power project and the Gangwon wind power project provide a model for future financings of wind power projects in South Korea and Asia generally.

A number of South Korean-specific features (including the presence of suitable sites and MOCIE's pro-active encouragement of such projects) were critical elements that other countries will be looking at closely in developing their own renewable energy policies.