Lake Turkana wind, Kenya

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The Lake Turkana wind project in Kenya is a perfect example of how difficult it can be to utilise plentiful renewable energy resource in countries with limited national infrastructure. The risks of developing projects in developing African nations increase significantly when major new government-built transmission infrastructure is needed alongside any new power plant.

Despite these challenges however, Lake Turkana may act as a catalyst for utility scale renewables developments in Kenya, having overcome major delays to get its financing signed last month.

Transmission troubles

The Lake Turkana wind farm is to be located some 50km north of South Horr Township in north-eastern Kenya, some 500km from the capital Nairobi. The project entails the construction of a new 300MW wind farm consisting of 365 turbines spread out over a site of 162km squared. The plant is being built on previously deserted land cut off from any major town, which means new infrastructure is needed to support the development.

As part of the project, roads from Laisamis to the wind farm site, a distance of around 204km, are being upgraded and new access roads to project site built. The total cost for the road works is approximately €25 million (US$34m), which is included in the project costs. More challenging for the project's sponsor consortium is that the construction of necessary 400kv, 428km transmission line needed to connect the plant to the national grid is outside its control.

The Kenya Electricity Transmission Company (KETRACO) is responsible for creating the transmission line, which will cost around €142 million and is being financed through concessional funding by the Spanish government. Kenya's power transmission and distribution network is vastly insufficient to meet the country's growing power demands. Along with conventional power projects and numerous other potential wind developments, Kenya has potential geothermal resource of 7,000MW, and the government is keen to exploit this power potential to drive industrial development.

KETRACO is constructing around 10 major transmission lines and upgrading several others, with progress slow. The uncertainty attached to a state-built transmission line for Lake Turkana, particularly one of such length, was a cause a concern for lenders. To get the financing, belatedly, signed, the sponsors needed to agree a package of guarantees from DFI's and export credit agencies (ECA). Market observers expect the Lake Turkana experience to prompt the government to push transmission construction on to power developers in future.

Tariff trauma

UK-based Aldwych International is the main sponsor of Lake Turkana, co-developer KP&P Africa holds the second largest shareholding and the Finnish Fund for Industrial Cooperation, Industrial Fund for Developing Countries, Norfund and Sandpiper are minority equity investors.

KP&P first began exploring the wind resource in the area in 2006, and brought Aldwych into the project in 2009. Just before Aldwych joined, a tariff of €0.0752 per kWh was agreed for the project with state utility Kenya Power & Lighting Corporation (KPLC) under a 20-year power purchase agreement. This tariff later caused significant delays to the project, but the sponsors were reluctant to renegotiate on price, particularly as recent conventional power projects in the country have not proved much cheaper.

Lenders requested a partial risk guarantee (PRG) due to transmission concerns. The World Bank was lined-up to offer a PRG against the first €20 million of losses on the project if the transmission line is not completed by the start of operations. In 2012 it withdrew its support for the project however, and the deal was threatened with cancellation. The World Bank complained that the project was too large and too expensive for local power consumers to absorb the costs.

The deal was resurrected when the African Development Bank (AfDB), which is also lead arranger, stepped in to provide the PRG. This is the first time that the AfDB has ever offered a product of this nature, but it provided enough comfort to finally proceed to financial close.

Finally financed

The project has total costs of €623 million (US$859m) of which 70 per cent is covered by senior debt, 10 per cent is met through sub debt and 20 per cent is funded by equity. The 15-year financing breaks down into a €123 million development finance tranche provided by FMO (€73 million) and Proparco (€50 million), €200 million from the EIB, and a €200 million AfDB-led commercial tranche.

As Vestas is the project’s turbine supplier, EKF – the Danish ECA - is providing debt guarantees of €200 million, half of which is covering EIB direct lending and the other half is against the AfDB arranged commercial debt tranche. The EIB is also providing a €50 million political risk guarantee, which South African lenders Standard Bank and Nedbank are taking the commercial risk for, and a €50 million uncovered loan.

The commercial lenders on the deal are:

- AfDB
- Standard Bank
- Nedbank
- East African development Bank
- PTA Bank
- Triodos
- DEG

DEG’s €20 million contribution is in the form of sub debt, as is a €25 million loan from the European Union's EU African Infrastructure Trust Fund. The government of the Netherlands has provided a grant of €10 million, which will be used to part-fund the road works. The Overseas Private Investment Corporation (OPIC) has also shown interest in lending to the project. It may join the financing pre- or post-financial close, depending on when it gains credit approval.

Financial close may take up to three months, with conditions precedent including an amendment to Kenyan law, which is currently under discussion. The first 50-90MW of capacity is expected to be commissioned by late 2015, with the whole plant operational in 2016.

Advisers

KPMG is lead financial adviser to the sponsor consortium, and Anjarwalla & Khanna is its local legal adviser. Mott MacDonald is technical adviser to the lenders, and Trinity is their legal adviser.