Case exercise: 78 MWac/100 MWdc Solar PV plant in Nigeria

Prepare a financial model analysing a project financed independent power plant project ("IPP"). The plant will be utilizing solar photovoltaic technology. Based on your analysis prepare a presentation for an investment committee outlining at least the following:

- the equity returns of the project;
- the financial model should be a 20 year analysis, including projected income statement, balance sheet and cash flow statement
- the risks of the project from an equity investor perspective;
- your assumptions and the reasoning behind the assumptions;
- recommendation on whether to invest or not

Background

The power plant will be built in Nigeria and the project will have a 20 year power purchase agreement ("PPA") with the local government owned electricity trader called NBET ("Off-taker"). The government of Nigeria will provide a government guarantee to the IPP against non-payment from the Off-taker. In addition the project is applying for a Partial Risk Guarantee (PRG) from the World Bank or AfDB. The project will be financed with non-recourse senior debt and equity. The project is seeking debt financing from well-known development financing institutions and the majority of the equity comes from North American private equity funds.

so world bank will pay if Nigeria won't pay?

Wärtsilä will act as the EPC and O&M contractor for the IPP, Wärtsilä is also considering a minority equity investment to the IPP. The PPA has a term of 20 years after which the power plant may seek for a PPA extension or may decide to dismantle the plant. The Off-taker commits to purchase all of the electricity produced by the solar plant. The tariff has been set to 99 USD/MWh. The project is eligible for a tax holiday, and is thus exempt from Corporate Income Tax and With-holding tax on dividends for the first 5 years of operation.

Capital costs incurred during construction:

- EPC turnkey price of the power plant is 90 million $
- O&M mobilization of 1.0 million $
- Interconnection costs of 3.0 million $
- Development costs of 5.0 million $
- Construction time of the plant is 12 months
- Please consider any other costs the IPP could occur when arranging the financing and during construction

Technical specifications:

- Photovoltaic panels (monocrystalline silicon panels, with single axis trackers)
- Net capacity 78 MWac/100 MWdc
- Expected energy yield in the first operational year is 200 000 MWh (before degradation and availability losses).

Operating costs:

- Fixed O&M fee of 16 USD/kWdc/year, indexed to US CPI.
- Annual operational insurance cost is approximately 0.5% of the total CAPEX.
- Please consider any other costs the IPP could occur during operations.

Practicalities

During your next round of interviews you will be asked to present this case in a Power Point format. Also be prepared to present the financial model Excel you have created. All publically available information can be utilized when working on the case. The use of financial model templates is not allowed, your Excel must be built from scratch. Before the interview you are allowed to ask five initial questions and 2 follow up questions regarding the case. Direct your questions to Harri Antikainen at +358 40 849 5770 or harri.antikainen@wartsila.com. Please consolidate your initial questions to one email or phone call.