

THE SUN SHINES FOR THE BOKPOORT BOYS

THE BOKPOORT CONCENTRATED SOLAR POWER PROJECT IN SOUTH AFRICA HAS BROKEN NEW GROUND IN TECHNOLOGY WITH 9.3 HOURS OF THERMAL STORAGE, WHICH IS CONSIDERED TO BE THE HIGHEST AMONG COMMERCIAL CSP PROJECTS OF COMPARABLE SIZE. BY **ADITYA THAKUR**, MANAGER, ACQUISITIONS AND PROJECT FINANCE, AND **PRABASHEN GOVENDER**, PROJECT DIRECTOR, **ACWA POWER**.

At the same time, the project is a landmark in the Renewable Energy IPP programme with its economic empowerment funding structure, which potentially heralds a new era of private sector funding for the empowerment equity that hitherto had been the mainstay of public financial institutions of South Africa.

The REIPP procurement programme

The government of South Africa has, quite successfully so far, completed two rounds of bidding and awarding of projects under the REIPP programme. Of the original target of 3,725MW of renewable energy capacity across different technologies 1,416MW and 1,044MW has been awarded in Rounds I and II respectively.

While much can be written about the success of the REIPP programme, remarkable results have been achieved in areas of reduction in the cost of procurement of electricity and increasing the local content procurement progressively. The programme also allays concerns about South Africa's heavy reliance on coal-based generation and provides a much-needed boost to the renewable energy industry in the country.

For Round II in March 2012, a total of 79 bids were received and 19 projects were selected as preferred bidders. Bokpoort was the only CSP project in the second round to bid and with a tariff that was 7% lower than the average tariff for Round I CSP projects, was awarded the preferred bidder status soon afterwards in May 2012.

Bokpoort CSP project – A landmark in REIPP

The Bokpoort project is located at Bokpoort farm, roughly 120km from the town of Upington in the Northern Cape Province of South Africa. The site is ideally suited considering its proximity to a sub-station, good access via a road network and a water source in its vicinity. The plant, once built, will have an array of solar collectors connected together through heat transfer tubes that will transfer heat energy to a boiler for steam generation. A 50MWe conventional steam turbine will then use the steam flow to generate

electricity and two molten salt tanks will store excess heat energy for conversion into electric energy after sunshine hours.

One remarkable feature of the plant is the size of thermal storage – it is the world's first commercial utility-scale CSP plant to have more than nine hours of storage, which provide the ability to deliver power well after sunset, effectively making it a base-load power plant. Once operational, it will generate over 230,000MWh every year – enough to meet the electricity requirements of 17,000 households in South Africa while avoiding some 200,000 tons of carbon dioxide through clean, emissions-free power¹.

The shareholders of the project include ACWA Power with 40%; Public Investment Corporation (PIC), a state-owned institution, with 25%; Lereko Solafrica Investments, a BEE² partner, with 13%; Lereko & Metier through its investment funds LMSF1 (9%) and LMSCF (3%); and Kurisani, an investment arm of Lovelife (a South African NGO working towards HIV/Aids prevention) and a local community trust with 5% each.

Kurisani and the community trust are the BBBEE³ partners in the project. The community trust is envisaged to bring economic benefits to the local communities living within a 50km radius of the project location by virtue of its shareholding in the project in addition to the socio-economic development activities carried out by the project company.

The equity funding for the BEE and BBBEE has historically been funded by public financial institutions in South Africa. However, in the Bokpoort CSP project, the lead sponsor ACWA Power, decided to provide such funding to the BEE shareholder, Lereko Solafrica Investments with 13% shareholding, thereby setting a precedent of sorts in the REIPP.

An amount of R195m for this purpose will be provided by ACWA Power's empowerment funding vehicle to Lereko. The funding terms are on a par with what is otherwise available in the market from public financial institutions. The equity funding for BBBEE partners, Kurisani and the community

TABLE 1 – THE REIPP PROGRAMME

	Allocation to preferred Bidders: Window 1		Allocation to preferred Bidders: Window 2		MW allocation per determination
	MW	Percentage	MW	Percentage	
	Solar PV	631.53	43.60	417.1	
Solar CSP	150.00	75.00	50.0	25.00	200.0
Wind	633.99	34.30	562.4	30.40	1,850.0
Biomass	0.00	0.00	0.0	0.00	12.5
Biogas	0.00	0.00	0.0	0.00	12.5
Landfill Gas	0.00	0.00	0.0	0.00	25.0
Small Hydro	0.00	0.00	14.3	19.10	75.0
Total MW	1,415.52	39.00	1,043.9	28.00	3,625.0

Source: Department of Energy, Govt. of South Africa

trust is being provided by PIC through its empowerment funding channels.

The construction of the project is being carried out by an EPC consortium that includes industry leaders Acciona, TSK and Sener, all Spanish and all of which have a well-established track-record of developing, constructing and operating CSP power plants across the globe. Crowie Concessions of South Africa is the fourth party in the consortium. The performance of the contractor’s obligations under the EPC contract has been secured by financial guarantees in line with standard project finance practice. It is worthwhile highlighting, that, in spite of CSP being a relatively new technology in South Africa and the economic turbulence in Spain, there is no completion support in any form from the sponsors for this project.

The operations and maintenance of the project will be carried out by a joint venture of NOMAC (a wholly owned subsidiary of ACWA Power) and Invest in Africa Energy Services (South African empowerment partner). The EPC contractor will continue to provide O&M support for the first three years of commercial operations under a technical services agreement.

The PPA has been signed with Eskom, the state utility, for a 20-year period. Eskom’s payment obligations are guaranteed by the South African government through the provisions of an implementation agreement.

Financing structure

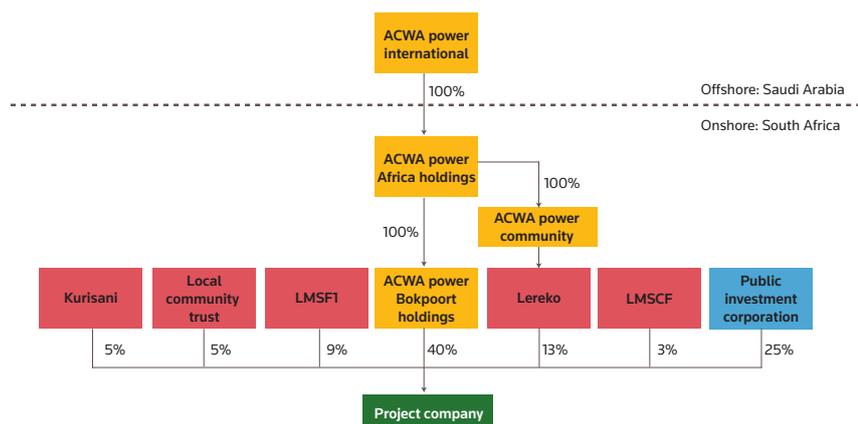
The debt financing for the project is provided by Investec, ABSA and OMSFIN. Investec and ABSA acted as the initial mandated lead arrangers for the project and provided R850m each on a take and hold basis. There was also an underwriting commitment for additional R1.3bn together from Investec and ABSA, part of which was later taken up by OMSFIN. The debt has been provided for a contractual tenor of 19.5 years with a cash sweep starting 12.5 years after completion to bring it down to 17.5 years. Repayment profiles have been sculpted to maintain debt service cover ratios of 1.35x or above at P50 irradiation levels.

The financing structure also features a mezzanine loan tranche provided by ACWA Power with fixed pricing for the duration of the PPA. Investec and ABSA also act as the working capital banks and the hedging banks.

The project has to comply with the hedging strategy to make sure that the entire foreign currency exposure under the EPC contract has to be hedged. At the same time, since the interest rate is based on floating JIBAR, the project has undertaken to swap the senior debt for at least 90% during construction which drops to 75% for the next 10 years.

The equity financing is provided by ACWA Power, PIC and the Lereko Metier funds with BEE/BBBEE empowerment funding from ACWA Power and PIC. The equity financing

FIGURE 1 – COMPANY STRUCTURE



has been provided through a mix of share capital and shareholder loans.

Financing – Overcoming the challenges

The path to financial close for the project was not without its share of challenges. At the time of bidding in March 2012, the sponsors' consortium included ACWA Power, Industrial Development Corporation (IDC), Lereko, Lereko Metier Funds, Kurisani and the community trust. IDC held a significant equity stake (25%) and an additional amount of debt funding as part of the lender consortium, which included Investec and Development Bank of Southern Africa (DBSA). IDC was also the provider of empowerment funding to Lereko, Kurisani and the community trust.

However, soon after bidding and being awarded the project by the Department of Energy, IDC decided not go ahead with the project. Nonetheless, ACWA Power decided to remain committed and to proceed without IDC. While this was necessary to make sure that the project implementation was not jeopardised, this also posed a number of immediate challenges:

- 1) How to plug the gap in equity financing for 25% of project equity?
- 2) How to bridge the gap in debt funding?
- 3) How to provide empowerment funding for the BEE/BBBEE partners in the project?

To complicate matters further, the South African rand kept depreciating, increasing the rand cost of EPC and the funding requirements. Persistent efforts over the next few months yielded positive results when PIC decided to step into the transaction for a 25% equity shareholding and also to provide BBBEE funding for Kurisani and the community trust.

At the same time, for the debt funding ABSA joined the lender consortium, effectively bridging the gap left by IDC's exit. The project funding was therefore made whole again except for the BEE empowerment funding for the 13% shareholding of Lereko. This is where ACWA Power stepped in and created a precedent of sorts by deciding to provide this funding from its own balance sheet.

If the project team was hoping for some reprieve after overcoming the above challenges, their hopes were quickly dashed when just months before the PPA signature date, DBSA could not get approval for its portion of debt funding. This was a massive setback – DBSA was providing more than 50% of the debt funding! Finding close to R2bn in a matter of several weeks when all banks/financial institutions are busy closing their own transactions was not going to be easy.

The REIPP regulations also make it very difficult for foreign lenders to participate since there are no termination payment guarantees for foreign currency debt. This limited the universe of potential lenders to the South African market. To add to the woes, CSP is a relatively new technology in South Africa and motivating credit

approvals within the short window of time available was a Herculean task by any standards. The financing itself was quite aggressive with long debt tenors and extremely sharp pricing, which were unheard of in the South African market.

Investec and ABSA played an extremely critical role here by agreeing to underwrite an additional R1.3bn for the project which would later be syndicated in the SA market. While this bridged the gap significantly, there was still a need for additional debt funding. One solution could have been to reduce the gearing but because of the short timeframe available, all equity investors could not get their approvals to increase their equity commitments.

ACWA Power demonstrated its commitment to the project, yet again, by stepping in and providing funding in the form of a mezzanine loan. The loan documents were continuously being discussed in parallel, which proved to be a significant challenge given the change in financing structure. However, with sponsors and lenders (namely Investec & ABSA) having committed themselves fully to the project, the challenge was overcome and loan documents were executed eventually in June 2013.

Currency and interest rate swaps

In addition, ACWA Power brought to South Africa's infrastructure project financing landscape the good practice of separating the hedging of credit risk and the market risk of foreign exchange and interest rate swaps. Rather than relying solely on the trade quote provided by the bank facing the project company, ACWA Power put in competition market-making international banks with local banks to adequately discover the market price of the instrument on an interbank basis.

The credit spread relating to the risk borne by the local hedging bank facing the project company was added on top of such pricing. For several trades in respect of these swaps, JP Morgan ended up being more competitive than the local banks and entered into a back-to-back swap with the local banks (ABSA and Investec) that were facing the project company. Considering the total amount of interest rate swaps and foreign currency hedges undertaken, the savings were significant. In addition, ACWA Power maximised the volume of three-month JIBAR swaps during construction, as opposed to the one-month JIBAR swaps that are typically used when debt is disbursed on a monthly basis, as the market for such roll-over periods is more liquid and leads to better pricing overall.

After a year and a half of persistent effort in the face of adversity, the Bokpoort CSP project eventually reached financial close, and the Bokpoort boys could enjoy their day in the sun ... but not for long. They are busy preparing for the fourth round of the REIPP programme, which will be submitted before long. ■

Footnotes

- 1 – Based on an average 1,100KWh/month per household consumption (ESKOM) and 0.94tCO₂/MWh grid emission factor for South Africa
- 2 – Black Empowerment Entity
- 3 – Broad Based Black Empowerment Entities