

Project briefing

JASPER SOLAR POWER PROJECT, SOUTH AFRICA



Project name: Jasper solar power project

Location: Near Kimberly, Northern Cape Province, South Africa

Capacity: 96MWp

Annual Generation: 180,000MWh

The South African PV market has certainly been kind to US utility-scale PV solar project developer SolarReserve — both in terms of opportunity and returns.

In particular, the country's arid Northern Cape region, where summer temperatures usually top 40 degrees Celsius, provides a haven for potential PV installations.

"There's just very, very good solar insolation in that region. When you look at it on the world standard, it's up there as a region that is bathed in solar resource and that is throughout the year. It's there to be harvested," says Alistair Jessop, SolarReserve's senior vice president of development, South Africa.

SolarReserve's first opportunity to enter such a promising market came about around five years ago, when the South African Department of Energy (DOE) held meetings with various PV market players in an attempt to spearhead an initiative that would later morph into the Renewable Energy Independent Power Producer Procurement Programme (REIPPPP).

"We were attracted to the South African market back in 2010," Jessop notes. "There was a conference held in conjunction with

the DOE and [utility] Eskom and a lot of the related parties, where it was clear that there was going to be a process under which a renewable programme was going to be constructed. At that point, we then took the decision to move forward with the development of projects in South Africa."

Under the REIPPPP, three rounds of bidding for sites have led to 64 PV projects totalling almost 1.5GW being awarded contracts in South Africa — all of which will supply energy to Eskom. News of the successful bidders in the fourth round is expected soon from the South African government.

SolarReserve immediately saw the results of participating in the REIPPPP, as the company was awarded two projects during the first round of bidding, eventually developing the Lesedi and Letsatsi projects — totalling a combined 150MW of capacity. Both sites came online in May 2014 and marked SolarReserve's first big step into the South African PV sector.

Planning

In the next round of bidding for the REIPPPP, SolarReserve was once again awarded a project, giving the company an outlet to develop the largest solar installation on the African continent — the 96MWp Jasper solar power project.

It was a long road in terms of planning and development for Jasper, which was

completed in November 2014 and has started to generate energy for Eskom through a 20-year power purchase agreement.

After the project was awarded, SolarReserve went about fostering a financial plan for the installation. With the assistance of South African investment firm Kensani Group, SolarReserve was able to roll out a strong roster of shareholders and investors, including Public Investment Corporation, Intikon Energy, Kensani Capital Investments, the PEACE Humansrus Community Trust and Rand Merchant Bank.

SolarReserve also attracted the interest of one particularly high-profile investor in the project — the internet giant Google, which was making its first renewable-energy investment in South Africa.

Jessop remarks: "I think Google took a good amount of time looking at the market and decided that our project was a project that was worthwhile investing in. I mean, clearly, we're delighted to have Google in the Jasper project ... It was so great to get them in on this and it's great to have them alongside us today."

The Northern Cape, already home to the Lesedi project, proved to be the ideal spot to develop Jasper, thanks to the arid terrain and a heavy amount of solar energy received in the area.

"To be suitable, the terrain had to be applicable for solar application," Jessop

At 96MWp, Jasper is currently Africa's largest operational PV power plant by capacity.





says. “We did environmental sweeps, we looked at any grid connection issues, we looked at any local issues. So you take all of that into consideration before we really start developing the site from the ground up. It’s a great location – it’s got the right conditions to construct these large infrastructure projects.”

After determining that the site was primed for development, construction began on Jasper.

During the plant’s installation, over 1,000,000 man-hours were generated, including over 800 on-site jobs at one point. Looking to capitalise on the climate around the site, SolarReserve utilised 325,000 Yingli Green Energy ‘YL295P-35b’ multicrystalline modules, which were installed onto the project.

The project — which was completed two months ahead of schedule — is set to produce 180,000MWh of renewable energy per year for South African residents, enough to power at least 80,000 homes. As part of the REIPPP, the plant will allocate a percentage of its revenue towards the Enterprise Development and Socio-Economic Development for the purpose of benefiting local communities.

In order to ensure the project’s optimal operation and profitability — as well as appease their shareholders — SolarReserve says it made it a point to select the top materials and components on the market. “There was an effort in panel selection and also the mounting designs in order to make sure that we got the

The construction of Jasper used over one million man hours.

optimum performance,” Jessop says.

Jessop adds: “With round one happening, the local banks were tremendously supportive of the programme. Clearly, it was beneficial for them to support the programme, but at the same time, they didn’t want to take risk on technology improvement, so they wanted it to have proven technology in the projects and that meant fixed-tilt PV systems. What we’re seeing in rounds three and round four [of the REIPPP] obviously, people are now looking at single-axis trackers. ... It was a step in the times.”

Despite being tasked with developing the largest PV installation in Africa, Jessop says that SolarReserve dealt with relatively few challenges during the execution of the project.

“South Africa benefits from a world-class infrastructure in terms of road, rail and ports. The Jasper project came on ahead of schedule and started producing energy which was being put on the grid about two months early,” he says. “There’s a substantial distance between port and site in terms of hundreds of kilometres, but we didn’t have any issues with any transportation. It was

well run. ... We had a fantastic, trouble-free experience.”

Looking ahead, SolarReserve still has much more planned for the young South African PV sector. During the third round of the REIPPPP, the company was once again awarded a project — the 100MW Redstone solar power plant — which is set to be developed alongside Lesedi and Jasper in the Northern Cape.

Jessop notes: “We’ve enjoyed success here and we’re building a pipeline with a view to taking a very long-term high position in both developing and earning projects within the South African market.” ■

Solar opportunities in East Africa will be under the spotlight at Solar Energy East Africa. The event, organised by PV Tech Power’s publisher, Solar Media, will be held on 10-11 March in Nairobi, Kenya. Further details are available at eastfrica.solarenergyevents.com

Author

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