



WORLD BANK GROUP

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IFC

International
Finance Corporation

MIGA

Multilateral Investment
Guarantee Agency

FINANCIAL SOLUTIONS BRIEF

ZAMBIA

Scaling Solar

PROJECT HIGHLIGHTS

- Scaling Solar is designed for rapid implementation and offers a “one-stop-shop” package that includes advisory services, contracts, financing, guarantees, and political risk insurance.
- The Zambian Scaling Solar project attracted top-tier global developers to the country’s first competitive auction. It resulted in the lowest tariff to date in Sub-Saharan Africa.
- Market soundings showed WBG presence was key to attracting reputable developers and financiers. All bidders requested the World Bank’s IDA payment guarantee.
- The program is currently being implemented in several countries in Sub-Saharan Africa—including Ethiopia, Madagascar and Senegal, and is being considered in other regions.

Sub-Saharan Africa has excellent solar resources and a sizeable need for additional power generation. However, despite falling costs globally, there are few solar power plants outside of South Africa and their costs are significantly higher than in other parts of the world. To help change this, the World Bank Group (WBG) designed the Scaling Solar program.

Scaling Solar is designed for rapid implementation, and offers a “one-stop-shop” package of advisory services, contracts, financing, guarantees, and political risk insurance from the World Bank, International Finance Corporation (IFC), and Multilateral Investment Guarantee Agency (MIGA) under a single engagement aimed at creating viable markets for grid-connected solar photovoltaic (PV) power plants. This enables governments and utilities to procure solar power transparently and at the lowest possible cost, helping reduce financing costs, which leads to more certainty and better tariffs for consumers. The Zambian program attracted top-tier global developers into the first competitive auction and resulted in the lowest tariff in Sub-Saharan Africa to date. The Scaling Solar program is now being replicated in several other countries.

PROJECT DESCRIPTION

In 2015, the Government of the Republic of Zambia (GRZ) announced its plan to develop up to 600 MW of solar generation. GRZ wanted to (i) increase its power generation capacity at a time of power deficits being met by expensive imports, and (ii) diversify the generation mix to hedge against the risks of climatic and hydrological variability (hydropower represents over 90 percent of generation). This is a first step to increase the reliability and security of electricity supply.

ROUND 1

In August 2015, GRZ decided to use the WBG Scaling Solar initiative to tender two solar PV plants with a total capacity of up to 100 MW (“Round 1”). Round 1 projects involve the development, financing, construction, operation, and maintenance by each project company of a new solar PV plant located in the Lusaka South Multi-Facility Economic Zone, 20 kilometers south of Lusaka.

Forty-eight companies, including many world-class organizations, expressed interest. In May 2016, only nine months after the start of the process, GRZ awarded the 47.5 MW (55 MWp) West Lunga Project to Neoen SAS of France (Neoen) and First Solar Inc. (First Solar) of the USA. They offered a tariff of US¢6.015/kWh, which was the lowest tariff for solar energy in Sub-Saharan Africa at that time. The 28.2 MW (33 MWp) Ngonye project was also awarded, to Enel Green Power with a bid of US¢7.839/kWh.

The projects will sell the power at a fixed price (i.e., not indexed) to the Zambian utility company ZESCO through a 25-year power purchase agreement (PPA). The Industrial Development Corporation (IDC), a GRZ-owned company, was mandated to lead the design and tender. IDC also takes a minority share in the project companies.

ROUND 2

After the success of Round 1, GRZ launched Round 2 in March 2017 for up to 300 MW and it prequalified 12 firms in June 2017.

CONTEXT

The projects are exposed to a substantial country and off-taker payment risk, affecting their financial sustainability and bankability.

Zambia has a limited track record with international investors and Independent Power Producers (IPPs). Also, while the utility ZESCO has established a solid operational capacity, it has a relatively limited track record of successful contract performance with IPPs. To mitigate the consequences of the energy deficit crisis, GRZ provides substantial fiscal liquidity support to ZESCO to cover the pricing difference of expensive emergency supply and imports.

Market soundings showed that the WBG presence—particularly the World Bank’s relationship with GRZ and guarantees—was key to attracting reputable developers and financiers. Bidders were free to choose whether to use one or more of the World Bank guarantees, IFC financing, and MIGA political risk insurance in formulating their finance plans. In Round 1, all bidders requested the World Bank’s IDA payment guarantee (see World Bank Group Guarantee Support).

FINANCING

The cumulative cost of the two Round 1 projects is approximately \$100 million. The financing for each project is structured independently but similarly with a maximum debt-to-equity ratio of 75 to 25. The debt consists of three tranches as shown in Graph 1. The projects are planning to reach financial close in 2017.

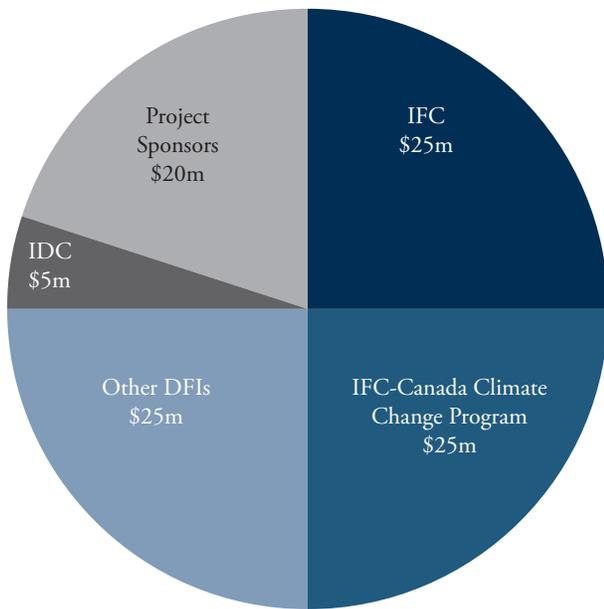
WORLD BANK GROUP GUARANTEE SUPPORT

The Scaling Solar program was inspired by the experiences of large emerging markets like South Africa, Brazil, and India, where repeated auctions for renewable energy have resulted in dramatically lower tariffs as developers became familiar with bidding processes and the industry was allowed to evolve.

The intent of Scaling Solar was to bring the benefits of low cost solar to Africa by adapting elements of success in pathfinder markets to the reality and challenges of Sub-Saharan African countries. For instance, most countries do not have a market large enough to attract top-tier global developers (unlike Brazil or South Africa for instance). However, by replicating the process and documents across countries, this creates a standardized solar project pipeline that attracts more experienced developers.

Building on these experiences, the various arms of the WBG collaborated for two years before the first engagement in Zambia to develop the principles of the program, as well as standard processes and documents.

GRAPH 1. ESTIMATED FINANCING OF ROUND 1



The program included WBG technical advice and pre-negotiated template documents for governments and developers to use (including a Power Purchase Agreement – PPA, and Government Support Agreement – GSA), increasing transparency and reducing risks and costs. Scaling Solar also includes an offer of WBG debt financing, guarantees, and insurance to boost confidence for first-of-a-kind projects in new and challenging markets.

The Scaling Solar approach (i) was implemented quickly thanks to fully templated documents and processes, and the offer of WBG debt financing and guarantees, (ii) de-risks projects to deliver lower tariffs, and (iii) achieves economies of scale via a standard approach across multiple projects/countries.

The World Bank offers both IDA payment guarantees and loan guarantees (see following Box). The corresponding guarantee terms were included in the Request for Proposal (RFP) package, alongside the IFC financing and the MIGA insurance offers. In Round 1, the two winning bidders each requested an IDA payment guarantee and IFC financing.

BENEFITS OF WORLD BANK GROUP SUPPORT

Scaling Solar demonstrates the benefit of following a competitive, transparent and well-structured procurement process by comparison to unsolicited negotiated deals

BOX 1. IDA GUARANTEES

- **IDA Payment Guarantees.** Under the PPA, ZESCO is required to provide payment security via a letter of credit (LC). To help ZESCO provide that security, GRZ requested IDA to provide payment guarantees. Without IDA guarantees, ZESCO would not be able to find long-term LCs and many sponsors and lenders, both development finance institutions and commercial banks, would not be able to participate. The IDA guarantee also reduces the cost to ZESCO of procuring these LCs and avoids the requirement for ZESCO to post cash collateral.
- **IDA Loan Guarantees.** The loan guarantees are offered to commercial banks to extend debt finance to the solar IPPs. The World Bank would backstop the ability of the IPP to repay commercial banks in the event the GRZ or ZESCO fail to meet their contractual obligations. Thus, the commercial banks would be incentivized to provide longer tenors and lower interest rates given the improved credit risk rating.

prevalent in Sub-Saharan Africa. GRZ had entered several Memoranda of Understanding for unsolicited proposals to construct solar PV power plants in Zambia. Given the unstructured nature of these proposals, negotiating PPAs had been a long and unfruitful process. Under Scaling Solar, after appointing IFC Advisory as transaction advisor, IDC could carry out a full competitive procurement process in nine months. In May 2016, IDC opened the financial proposals, unveiling remarkably low tariffs, well below the costs of electricity then imported to reduce load shedding.

The developers and financiers also benefit from the transparency of a well-structured process and from the explicit presence of the WBG. Most importantly, Zambian customers benefit from a cheap and clean source of power that is highly complementary with the dominant hydropower generation capacity.

From a donor perspective, the World Bank's IDA guarantees also constitute an efficient and leveraged use of limited IDA resources compared to the large investment need. For the West Lunga project, the IDA payment guarantee of \$3.5 million uses an allocation of less than \$1 million from Zambia's IDA country envelope. However, it leverages ap-

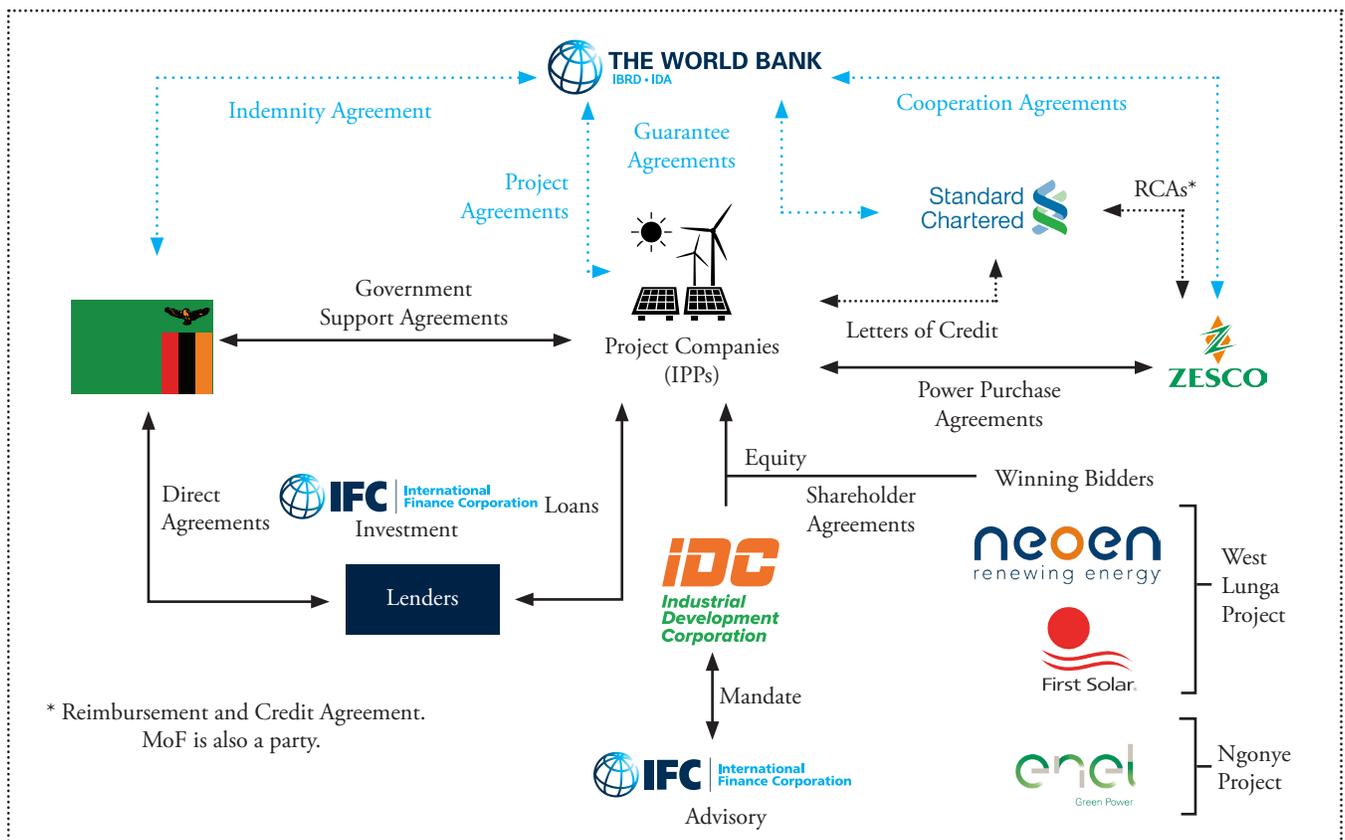
proximately \$60 million in investments from development finance institutions and private project sponsors. The operation is consistent with the WBG's goal to maximize finance for development and contributes fully to the WBG Africa Climate Business Plan. This calls for accelerating climate-resilient and low-carbon development.

Further deployment of the program is currently ongoing in several countries in Sub-Saharan Africa, including Ethiopia, Madagascar and Senegal and is now being con-

sidered in other regions. From less than 25 MW of solar plants currently operating in the region outside South Africa, Scaling Solar now has mandates for the development of up to 1.2 GW of new solar power generation on the continent.

There is a Zambian proverb that says "Consistency enables one to achieve their goals." Scaling Solar proves this wisdom and helps mobilize finance for development.

GUARANTEE STRUCTURE



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