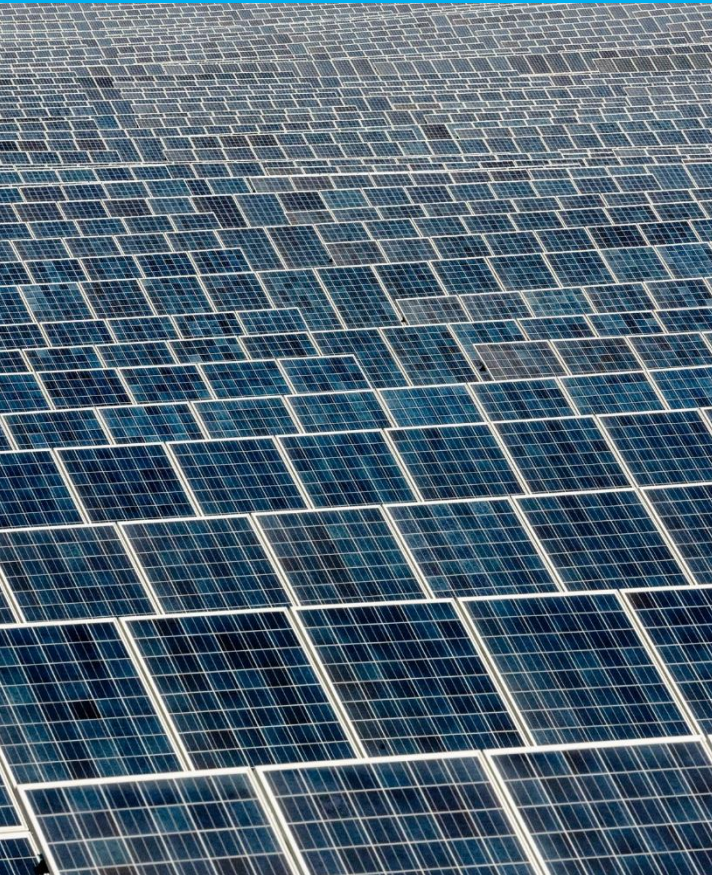


Scaling Solar



AN INNOVATION OF
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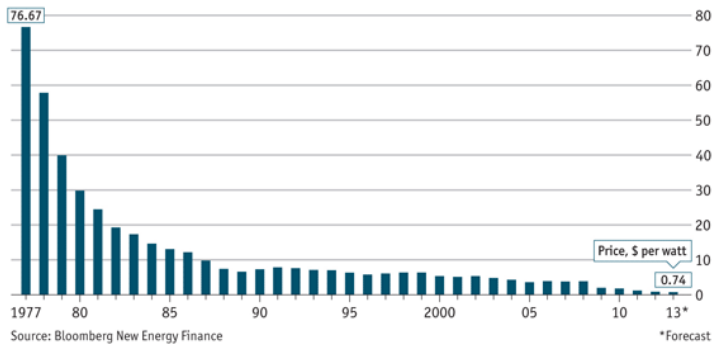
Scaling Solar:

A World Bank Group solution to rapidly expand private investment in utility-scale solar PV in Africa

The Solar opportunity in Sub-Saharan Africa has reached a *tipping point*

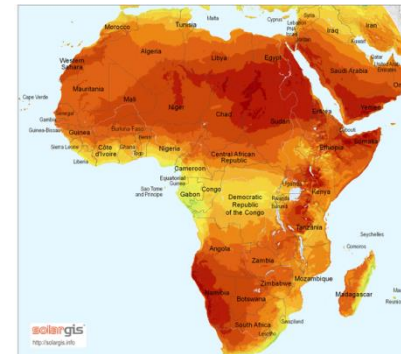
The economics of utility-scale solar PV power have reached a tipping point...

Price of crystalline silicon PV cells, \$/W



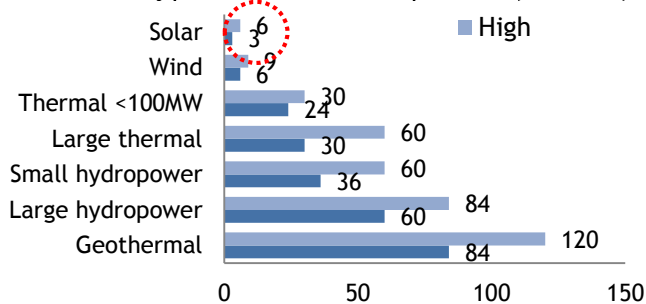
...and Africa benefits from some of the best irradiation levels on the planet

Horizontal irradiation in Africa



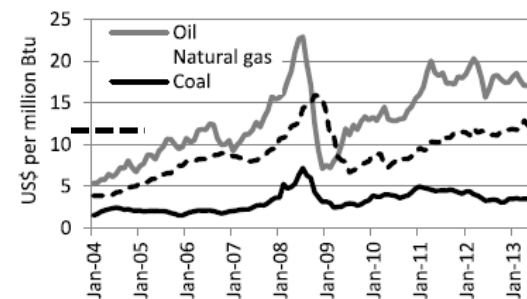
Solar power can be built in 3-6 months vs. 3-10 years for thermal, hydro & geothermal...

Typical construction periods (months)



...and many countries need to diversify away from a dependency on HFO and fossil fuels

Evolution of oil, gas and coal prices since 2004



But investment in solar PV is slow...

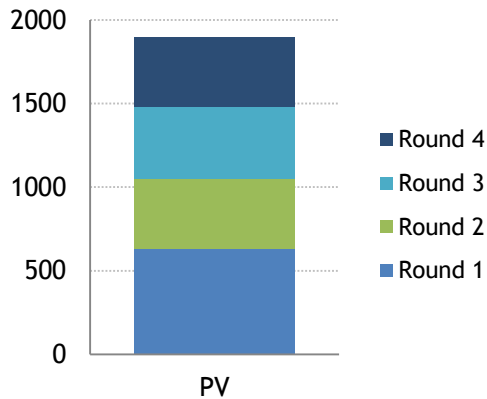
- ✘ Lack of market scale
- ✘ Lack of competition
- ✘ High transaction costs
- ✘ High perceived risk and cost of capital
- ✘ Limited institutional capacity

Scale, standardization & competition are needed

Case Study: Dramatic tariff reductions have been achieved in South Africa

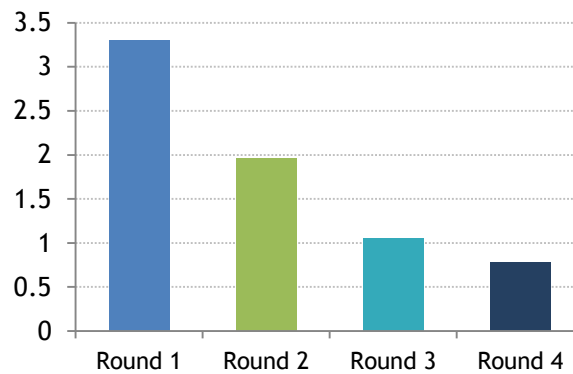


Capacity allocated per round (MW)



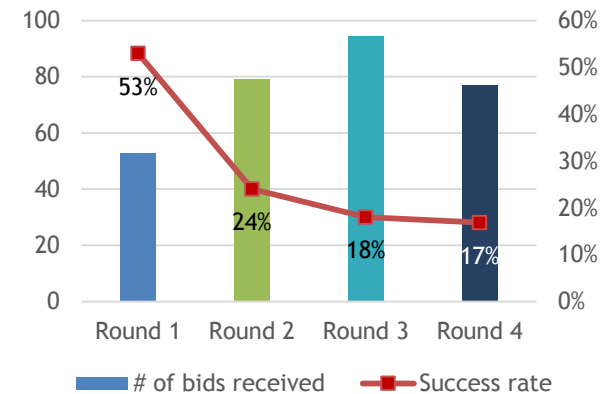
✓ +1,900 MW of solar PV power

Tariffs per round (ZAR/kWh)



✓ Tariff drop of -68% for PV projects over the 3 rounds

Number of received bids and success rate (includes wind)



✓ Surge in investor interest and increasing selectivity in bidders afforded

The WBG solution: A “One-Stop-Shop” offering



Scaling Solar is a “one-stop-shop” for Governments to rapidly mobilize competitive privately funded grid connected solar projects within 2 years of engaging our team.

Scaling Solar brings together several World Bank Group services under a single engagement:

- ✓ **Advice** to assess the right size and location for power plants in grid.
- ✓ **Simple and rapid tendering** to ensure strong competition from committed industry players.
- ✓ **Standardized, balanced project documents** to eliminate drafting and negotiation delays.
- ✓ **Competitive financing and insurance** attached to tender and available to all bidders.
- ✓ **Risk management and credit enhancement** products to lower financing costs and deliver lower tariffs.

What's new about this?

The 'One-Stop-Shop' Approach

- ✓ Whole WBG in one packaged solution
- ✓ A single mandate
- ✓ Designed with both **Government and Developers** in mind

A focus on standardization

- ✓ Fully developed documentation quickly tailored to local needs drives speed
- ✓ Standardization across countries creates a single, 'virtual', large scale market

Likelihood of quick wins

- ✓ Coordinated delivery to address both public and private sector constraints
- ✓ The WBG has the expertise to make it work
- ✓ Lessons embedded from successful and unsuccessful precedents

⇒ Standardization delivers speed, efficiency, programmatic scale and competition to reduce tariffs and entice top tier developers to participate

⇒ Coordinated, collaborative and rapid delivery

Developers that have bid on Scaling Solar tenders



Scaling Solar tender results in Zambia

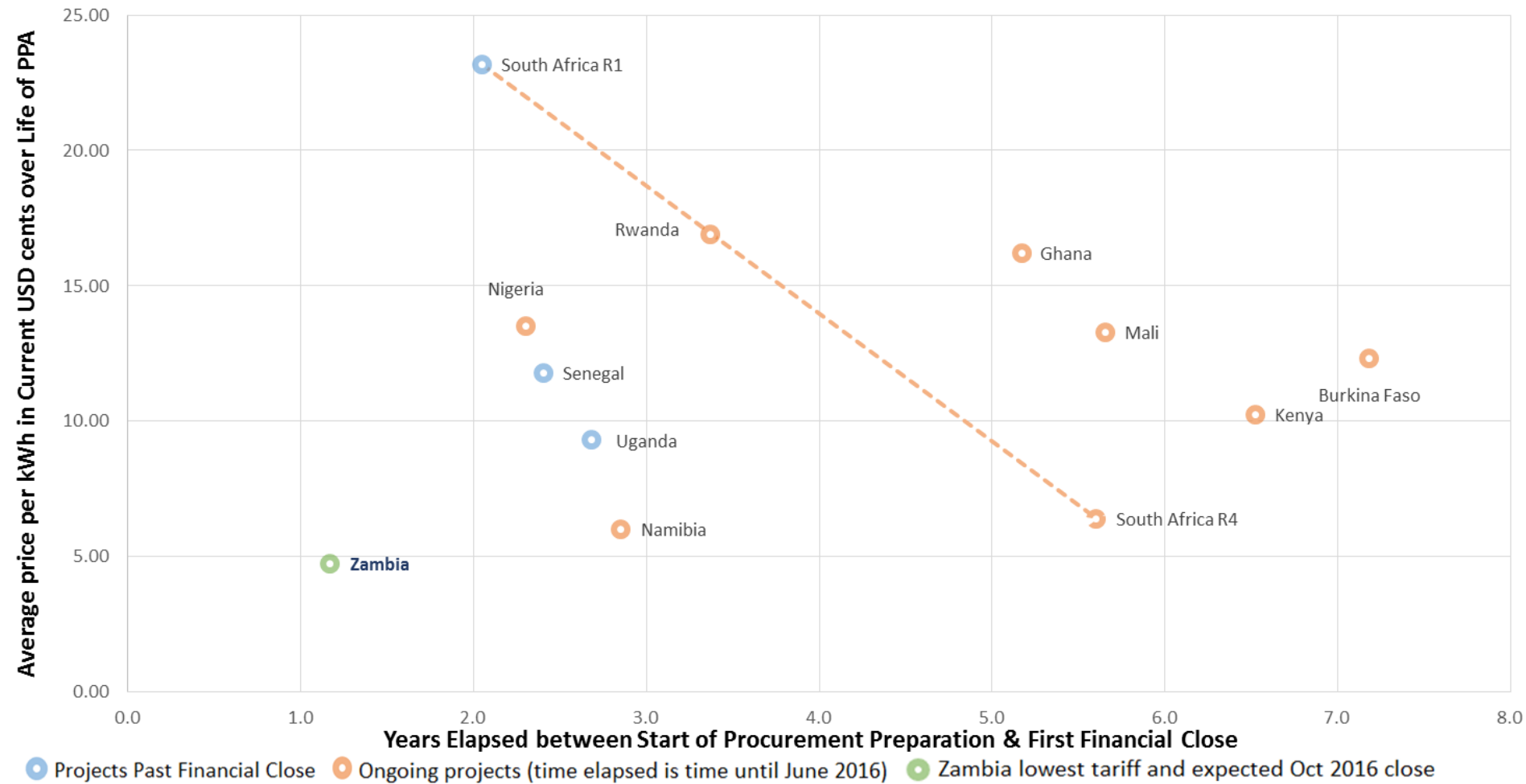
Projects were developed and tender was prepared and executed to conclusion in 9 months

	West lunga Site	Mosi-oa Tunya Site
Neoen / First Solar	6.0150	6.1350
ENEL Green Power	7.7989	7.8390
Access / EREN Zambia 1	8.2879	8.4000
MULILO Zambia PV1 Consortium	8.4000	8.9509
EDF Energies Nouvelles	10.0400	9.9850
SEP / AVIC Intl	10.6000	10.6000

6.0c/kWh non-indexed is equivalent to an average in current dollars over contract life of 4.7c/kWh

Performance relative to regional benchmarks

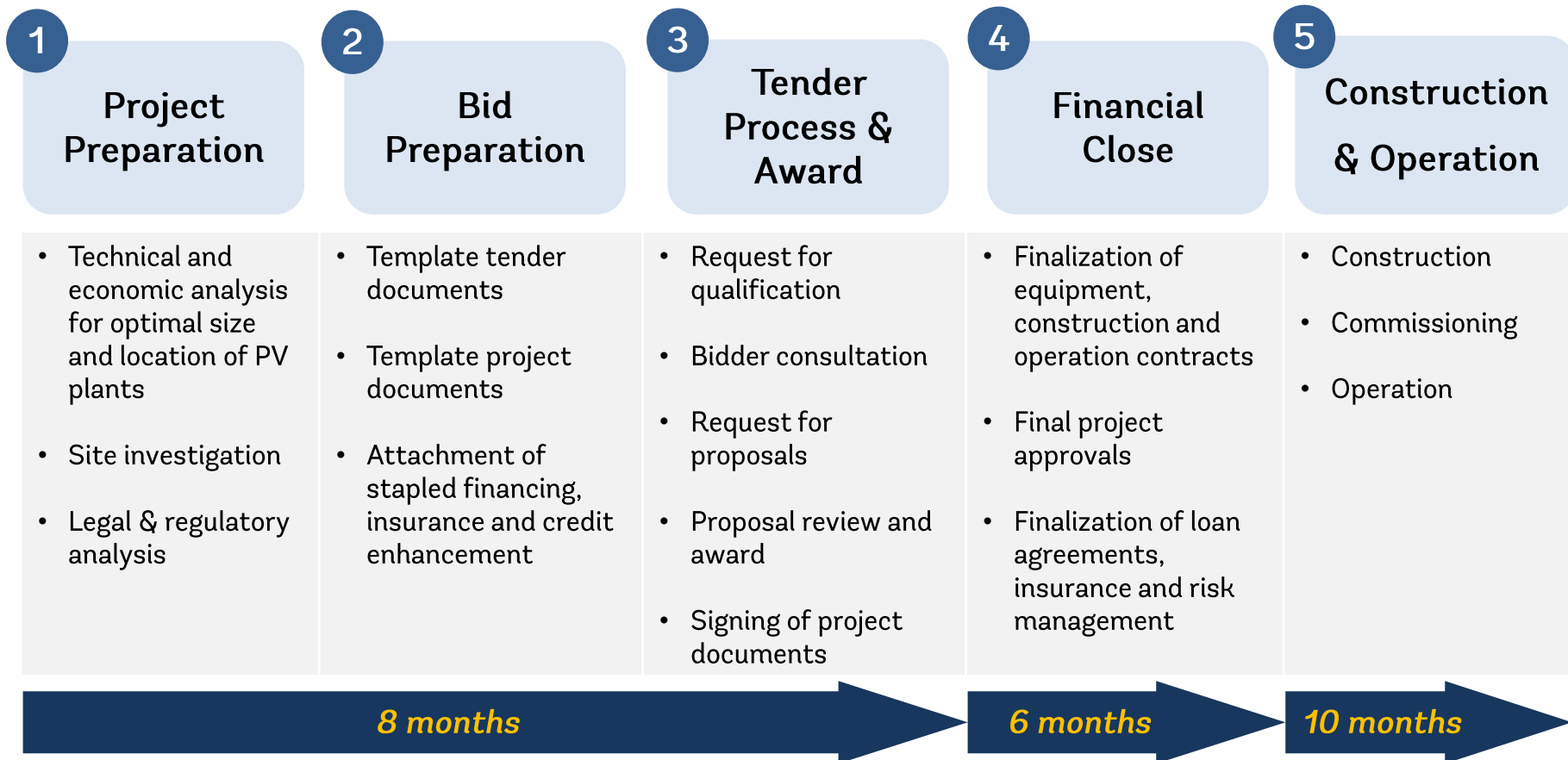
Sub-Saharan Solar PV: Comparisons of Tariff and Time to Market



How will it work? Scaling Solar's 5 steps



- Several WBG instruments brought together under a single product offering
- Client governments would engage in a single mandate to access the “one-stop-shop”



The tendering process: What are the “template documents”?

Engagement Letter & ToRs for specialized Consultants

- Government signs a Letter of Engagement with IFC’s Advisory Services
- A World Bank Group team is put in place
- Specialized consultants are hired based on existing Terms of References

Power Purchase Agreement & Government Support Agreement

- Documents designed as fair, balanced & bankable
- Prepared by World Bank Group with support of Linklaters & Norton Rose independent review

Pre-qualification Document & Request for Proposals

- Tendering documents are ready and have been designed to attract top tier developers and investors

Letter of Interest and Indicative financing terms

- Indicative terms for debt financing as well as terms for Partial Risk Guarantees are available and have been through preliminary internal approvals

⇒ Critical for this set of documents to be utilized in their template forms to achieve scaled, competitive solar power within 2 years

What are the benefits?

1. For Governments:

- ✓ Speed
- ✓ Customized process
- ✓ Certainty
- ✓ Competitive fixed-rate tariffs

2. For Project Developers:

- ✓ Market creation
- ✓ Reduced development time
- ✓ Level playing field
- ✓ Regional scale

3. For Donors*:

- ✓ Reach
- ✓ Leverage
- ✓ Transparency
- ✓ Impact

* Opportunities for donors include: funding transaction advisory (steps 1-3) or provision of capital grants to all bidders to lower tariffs and improve affordability

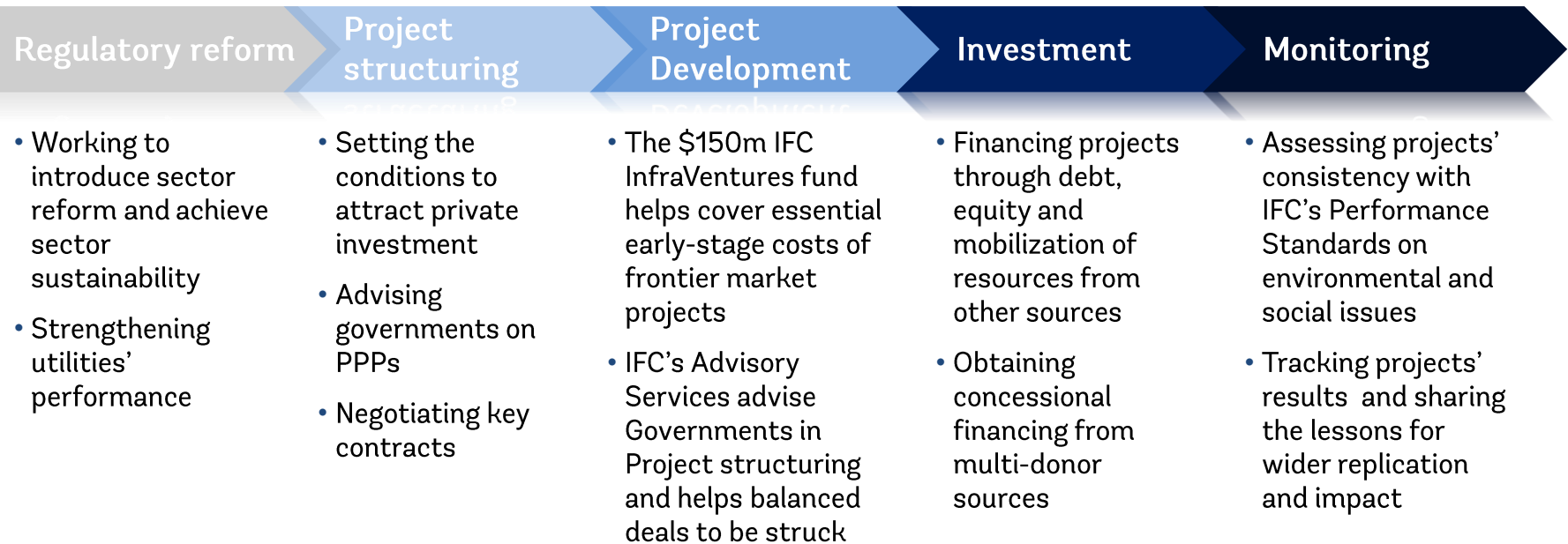
The World Bank Group is well-positioned to deliver



WORLD BANK GROUP

The World Bank Group has a long track record working with Africa's power sectors, key stakeholders and unique challenges. IDA and IBRD support client country governments with financing and advice to extend access to electricity, expand least-cost generation, create sustainable regulation and leverage the private sector.

IFC is experienced in developing bankable private power projects and has a substantial track record in both tendering and financing solar power plants. MIGA provides a range of political risk insurance products to attract private capital into emerging markets.



✓ Together, the World Bank Group is uniquely positioned to deliver the Scaling Solar solution.

World Bank Group research on tender design

A WORLD BANK STUDY

Electricity Auctions

AN OVERVIEW OF EFFICIENT PRACTICES

Luiz T. A. Maurer
Luiz A. Barroso

THE WORLD BANK

A WORLD BANK STUDY

Design and Performance of Policy Instruments to Promote the Development of Renewable Energy

EMERGING EXPERIENCE IN SELECTED DEVELOPING COUNTRIES

Gabriela Elizondo Azuela
with Luiz Augusto Barroso

THE WORLD BANK

IFC International Finance Corporation

Competitive Procurement of Supply and Demand Resources -- A Natural Evolution

Kellogg School of Management

Luiz Maurer
Climate Business Group, IFC

Evanton, January 30, 2013

The opinions here expressed are those of the author and do not necessarily represent those of IFC, WFP Group, or WFP Bank of Directors

IFC International Finance Corporation

13th INTERNATIONAL SEMINAR ON ENERGY IN BRAZIL FIESP-FIRJAN

Energy Efficiency Auctions

Luiz Maurer, IFC
São Paulo - 7/18/2012

WPS6485

POLICY RESEARCH WORKING PAPER 6485

Multidimensional Auctions for Public Energy Efficiency Projects

Evidence from the Japanese ESCO Market

Azumi Imai

The World Bank
Africa Region
Sustainable Development Department
June 2013

DESIGN AND PERFORMANCE OF ECONOMIC INCENTIVES TO SUPPORT RENEWABLE ENERGY DEVELOPMENT

Gabriela Elizondo and Luiz Maurer

IFC ESMAP RENEWABLE ENERGY TRAINING PROGRAM; June 17th, 2014

The World Bank Group

PPIAF Enabling Infrastructure Investment

South Africa's Renewable Energy IPP Procurement Program: Success Factors and Lessons

May 2014

Aston Eberhard, University of Cape Town
Joel Koller, World Bank Institute
James Leigland, Private Infrastructure Development Group

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How to Choose Appropriate Incentives to Deploy Renewable Energy and Increase Energy Efficiency

Auctioning Hydro Concessions for Power Generation Efficiency

The Example of Madeira River, Brazil

João Dutra Saraiva
January, 2012

WORLD BANK GROUP
Energy and Extractives Global Practice Group
October 2014

POLICY RESEARCH WORKING PAPER 7002

Performance of Renewable Energy Auctions

Experience in Brazil, China and India

Gabriela Elizondo Azuela
Luiz Barroso
Ashish Khanna
Xiaodong Wang
Yun Wu
Gabriel Cunha

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October 2014

viewpoint PUBLIC POLICY FOR THE PRIVATE SECTOR

Feed-In Tariffs or Auctions?

Procuring Renewable Energy Supply in South Africa

Feed-in tariffs have been the most widely used support mechanism to encourage the growth of grid-connected renewable energy. But could competitive tenders or auctions offer lower prices while still providing adequate incentives for market entry by renewable energy suppliers? This note looks at recent developments in South Africa, which initially employed feed-in tariffs for renewable energy but then turned instead to competitive tenders. Initial outcomes are encouraging: there has been much market interest, and subsequent bidding rounds have seen prices fall. Could there be lessons for other countries?

South Africa offers more on coal for electricity production than any other country. But in the face of climate change concerns it has embarked on a transition to lower carbon emitting technologies. Its most recent electricity plan included, for the first time, ambitious targets for renewable energy: 18,000 megawatts of wind and solar, one of a total proposed source capacity of around 90,000 megawatts, by 2030. To expand renewable energy supply, South Africa first explored the option of renewable energy feed-in tariffs (REFTs) before choosing instead to pursue competitive tenders. Inexpensive solar offers lessons for other developing and emerging market economies.

In March 2011 NEREA also specifically released a consultation paper with lower feed-in tariffs, arguing that a number of parameters—such as a higher rate and the use of debt-fall changed. The new tariffs were 25 percent lower

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Next Steps – Expressions of Interest

- ✓ Receipt of an Expression of Interest from Government
- ✓ Discussions to confirm and agree:
 - ✓ Suitability of Scaling Solar in country context
 - ✓ Sufficiency of stakeholder support (MoE, MoF, Utility, Regulator)
 - ✓ Identification of a government champion to drive the project
 - ✓ A timeline from mandate to selection of a Preferred Bidder
- ✓ Signing of a mandate with the World Bank Group to:
 - ✓ Conduct technical studies
 - ✓ Run a competitive tendering process complete with standardized documents and stapled financing
- ✓ Make initial payment for advisory services as per the engagement letter
- ✓ WBG team to run due diligence process and, after consultation and agreement from Government, tendering process

⇒ Expected timeline from mandate to selection of Preferred Bidder: 6 to 12 months

Questions or Interest? Please contact us

Webpage: www.scalingsolar.org

Contact: scalingsolar@ifc.org

