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**SOLAR ENERGY IN SENEGAL
PRESENTATION**

SUMMARY

SENEGAL SOLAR

Electricity Market

Potential & evolution of Renewables

Legal framework

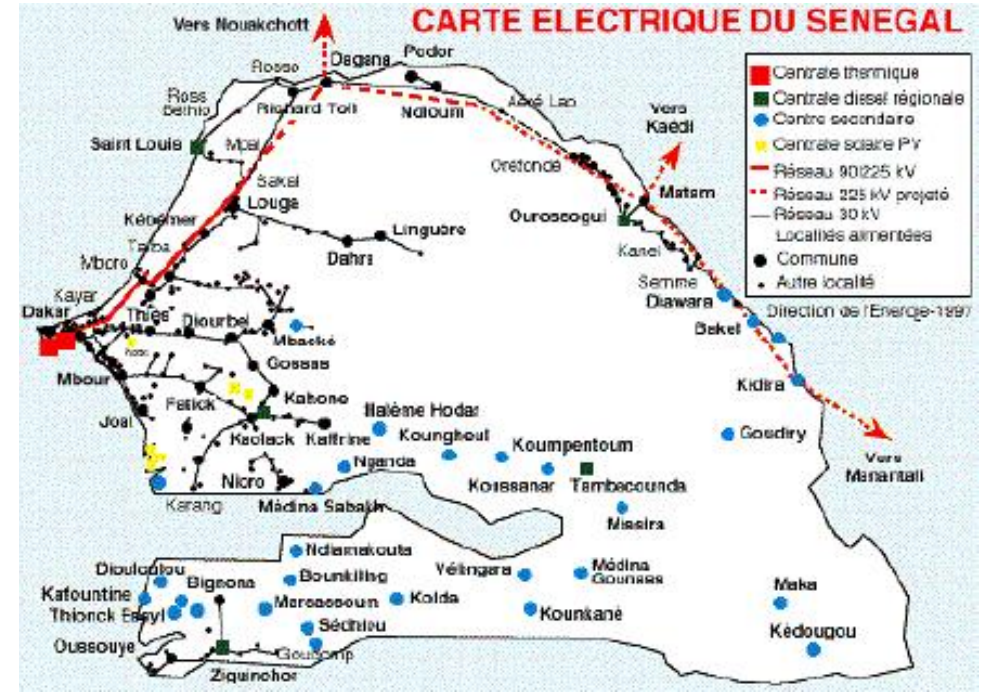
Success Cases

Conclusions

ELECTRICITY MARKET

SENEGAL SOLAR

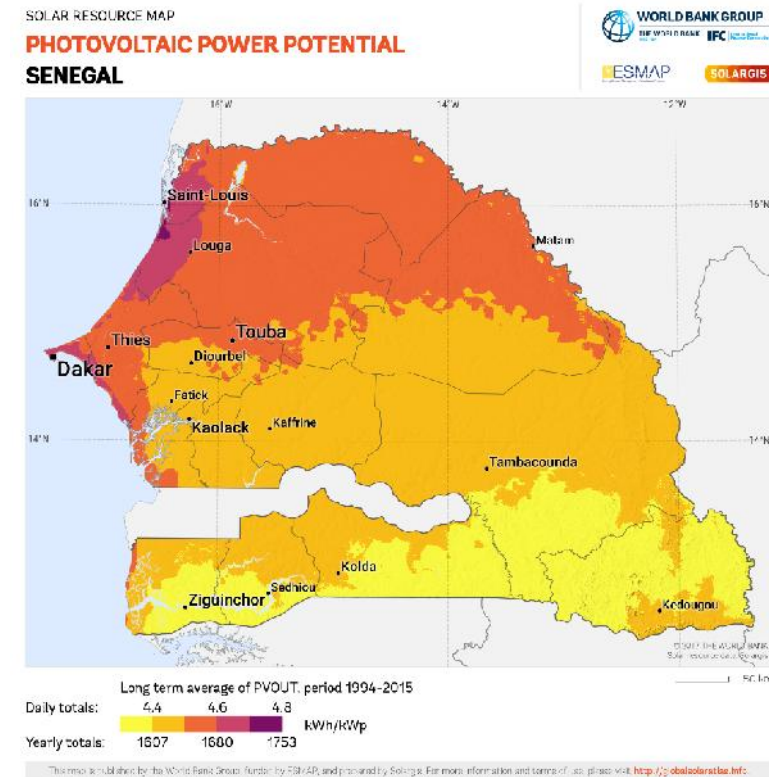
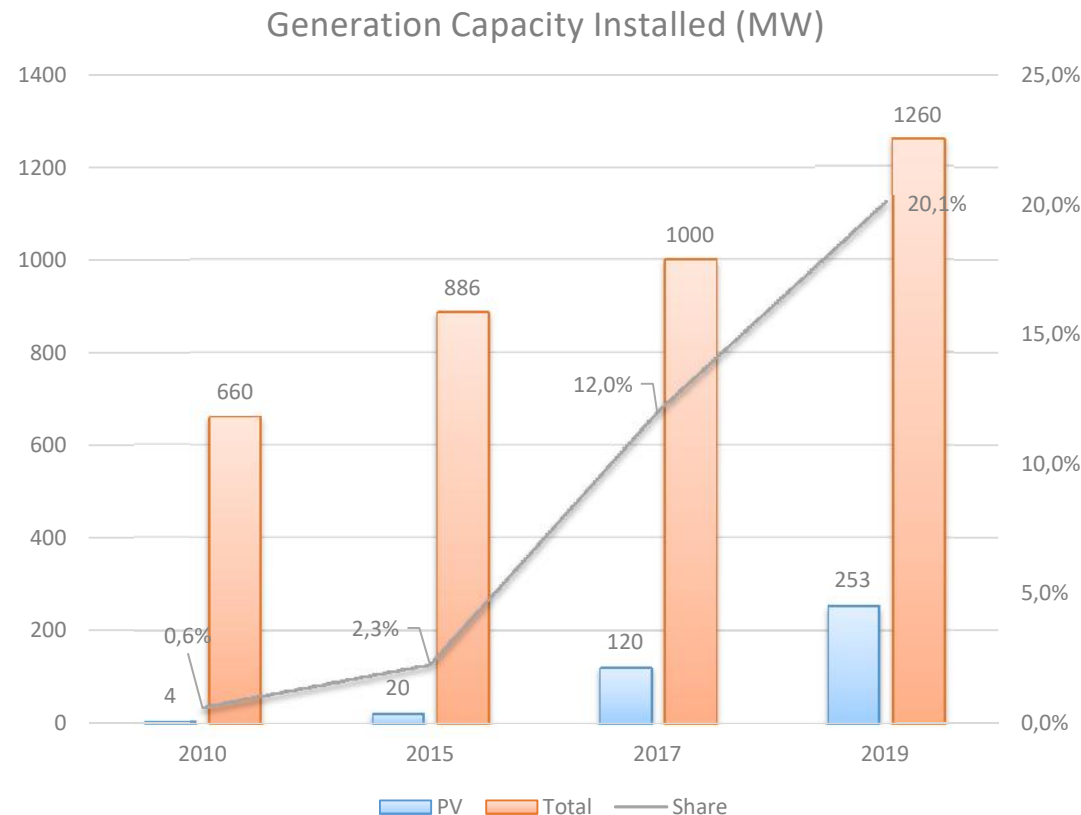
- National grid operator (SENELEC): 531,65 km
- Supranational grid (OMVS): 945 km
- Regulator CRSE
- Gas & oil dependent
- Electrification level 64%
- Installed capacity ~1GW
- Energy Price: 0.15 to 0.22 €/kWh (LV)
- Dropping costs of production
- Yearly increase in demand 6% (3500 GWh/y)
- Peak hours: 19-23h



PV POTENTIAL

SENEGAL SOLAR

- 300 sunny days / year
- $\text{DNI} > 1500 \text{ kWh/m}^2/\text{year}$
- Good resource, but dust and heavy temperatures



LEGAL FRAMEWORK

SENEGAL SOLAR

❑ 2010 Renewable Energy Law

- CRSE determines the tariff (art.14)
- IPP (without mentioning it)
- Autoproduction regime, sell of excess, tariff dependent on technology, capacity, fixed by CRSE, max.110% of installed power

❑ 2011-2013 decree

- regulates power purchase from Ren. En. and
- Public grid connection conditions

❑ 2015 Renewable energy dept at Senelec as one-stop-shop for developers

SUCCESS CASES

SENEGAL SOLAR

First 3 PV IPPs

- ❖ Senergy 2: 20 MW,
- ❖ Malikounda 22 MW and
- ❖ Senergy 30 MW
 - Commissioned in 2017
 - Before 2010 Renewable law => direct agreement (transition period 2012)
 - 25 years PPA, 65FCFA/kWh (0.10€/kWh) except Senergy II.
 - High risk
 - Crystalline Silicon, fixed structure
 - FONSI only provided capital to Senergy, Malicounda full equity, senergy 1 and 2 debt to equity 75/25

Scaling Solar

- ❖ Touba 30 MW
- ❖ Kahone 30 MW
 - Awarded in April 2018
 - Subject to Renewable law => Competitive Bidding
 - 20 years PPA <0.04€/kWh
 - Bankable non-negotiable documents
 - Short time to market 24 months*
 - credit enhancement and risk management
 - Transaction advice
 - Payment guarantee*
 - FONSI provides capital

* See chart in following slides

SUCCESS CASES

SENEGAL SOLAR



A solar IPP procurement process for African governments

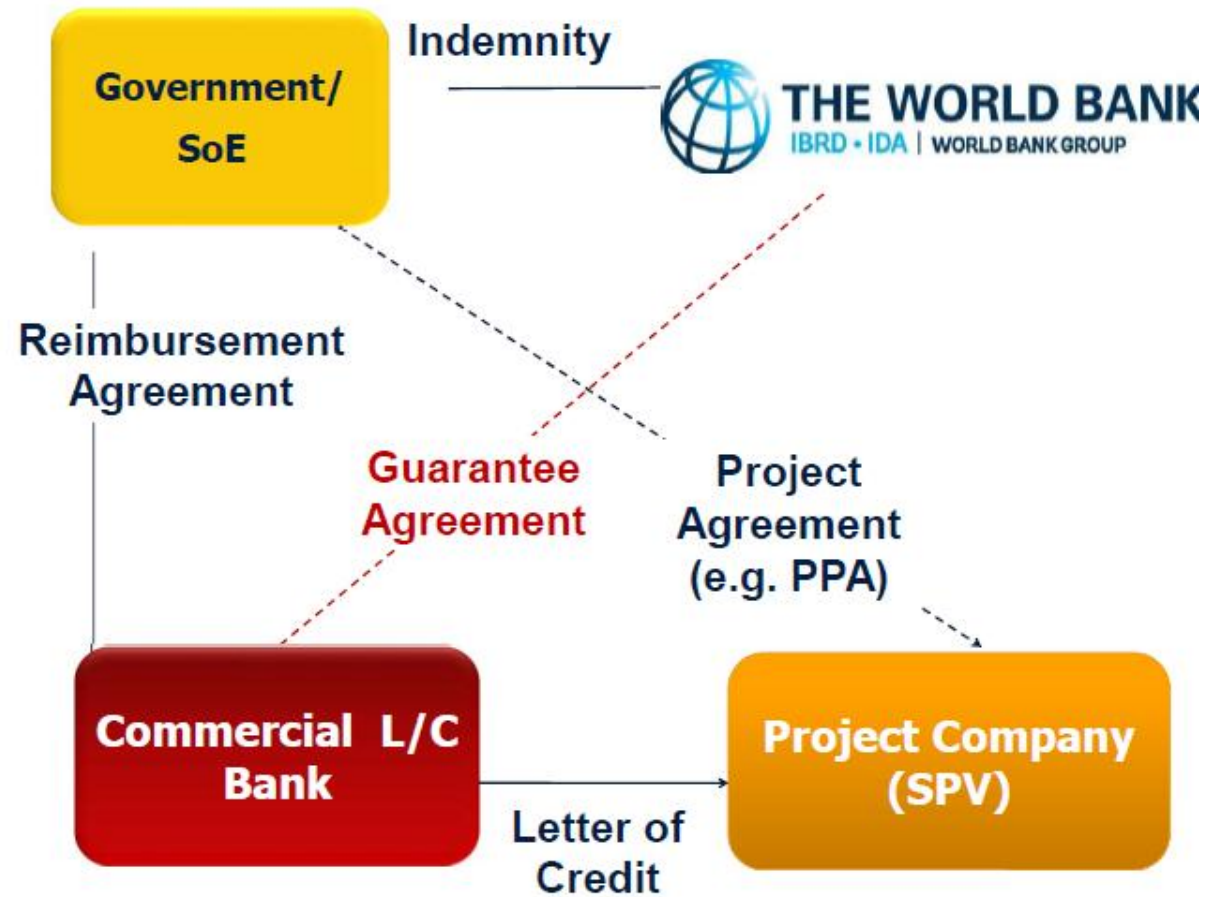
A 'one-stop-shop' coordinating several WBG instruments under a single product



SUCCESS CASES

SENEGAL SOLAR

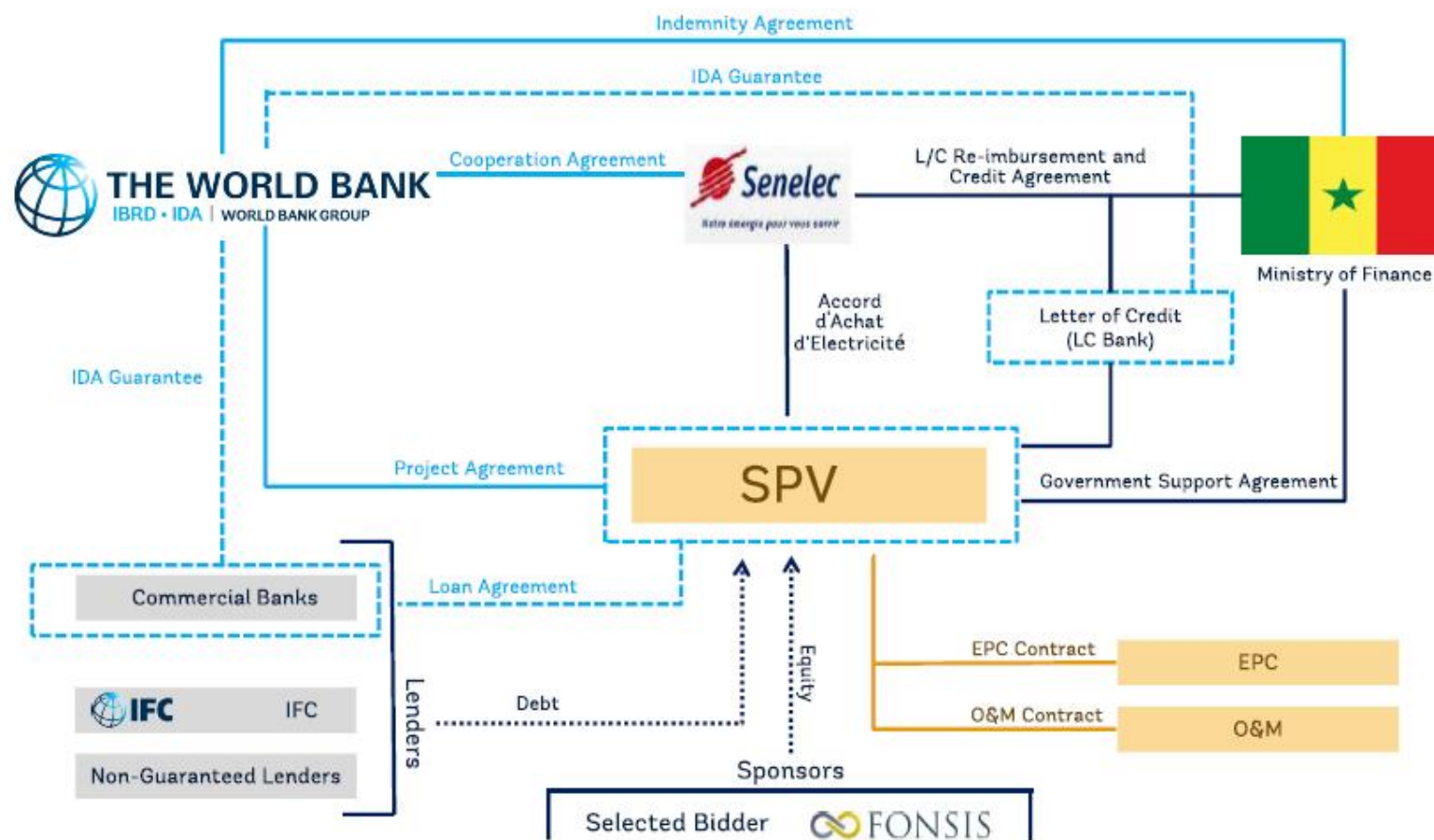
Example of Payment Guarantees by WB



SUCCESS CASES

SENEGAL SOLAR

Scaling Solar Senegal - Guarantee Structure



CONCLUSIONS

SENEGAL SOLAR

- Good solar resource
- Big investments/MW
- Simple technologies (fixed structure)
- Big players are adapting to SSA environment
- PV program is ahead of the Renewables Action Plan
- Scaling Solar 2nd round?
- Senegal is a HIPC, development funds available,
- Local social compensation (Malikounda 5% equity to neighbors), land issues

Thank you

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