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## Brief: Unlocking Botswana's Solar Power Opportunity

### Market Overview | June 2025

#### Botswana: A Solar Market Opening at Scale

Botswana is in the early stages of a strategic shift from coal-reliant generation to a diversified, clean energy system. With solar irradiance exceeding 2,200 kWh/m<sup>2</sup>/year — among the highest on the continent — the country offers exceptional potential for utility-scale PV development. Facing real power reliability challenges and a growing peak demand, the government has opened the market to private investment through a structured IPP framework, with a target of 8 GW of renewables and over 900 MW already in procurement. For solar developers and infrastructure partners, Botswana now presents a clear, de-risking entry point into Southern Africa's evolving energy landscape.

#### Key Drivers of the Opportunity

- Government target of **50% renewable energy by 2030**, up from under 2% today
- Current installed capacity of approximately **800 MW**, but only ~600 MW reliably available
- National **peak demand reaches ~700 MW**, with imports required during outages
- Strong institutional off-taker: **Botswana Power Corporation (BPC)** actively signing 25-year PPAs
- **1.5 GW solar procurement program** under way, scalable to **8 GW** in total
- Over **900 MW of solar** in active procurement, with additional unsolicited private proposals emerging
- **Self-generation allowed** for commercial and industrial users (no tender needed)



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## Grid and Storage Infrastructure Supporting Solar

- 500 MW national **Battery Energy Storage System (BESS)** program underway (target COD 2028)
- Major transmission projects to enable both domestic access and cross-border trade:
  - **North-West Transmission Grid (Phase 2)**
  - **RSA Interconnector (BOSA) and Zambia Interconnector (BOZA)**
  - **Morupule–Jindal 400kV Line** for evacuation of new IPP capacity
  - **Substation digitalization and SCADA upgrades** across the national grid

These infrastructure investments de-risk generation projects by ensuring grid access and future market flexibility.

## Public-Sector Renewable Energy Initiatives

The Ministry of Minerals and Energy has launched a multi-tiered national strategy focused on solar energy, storage, grid expansion, and distributed access.

- **1.5 GW Utility-Scale Solar IPP Program (Phase 1)**  
Competitive bidding underway for multiple grid-tied solar projects under 25-year PPAs with BPC.
- **8 GW Vision** by 2035  
Aimed at replacing coal dependency and positioning Botswana as a clean power exporter in the SADC region.
- **Mini-Grid Rural Electrification (6 Villages – Pilot Phase)**  
Targeting off-grid regions through solar-powered mini-grids under a US\$300M national rural electrification initiative.
- **National Rooftop Solar Program**  
A government-led initiative aiming to equip 50,000 households and SMEs with rooftop solar systems by 2030 under a net metering framework. The estimated program value is US\$50 million, with cost-sharing expected through

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subsidies, concessional finance, and private participation. Priority access is intended for low-income and vulnerable users.

## **Private-Led Utility-Scale Solar Opportunity (Project Spotlight)**

A shovel-ready 100 MW grid-connected solar PV project is now seeking strategic capital and/or EPC partners:

- Capacity: 100 MW (219 GWh/year)
- Location: Near capital city, with direct grid access; land secured
- Offtake: 25-year PPA with Botswana Power Corporation (BPC)
- Project IRR: 15.7% | Equity IRR: ~19.3% | Payback: ~6.8 years
- Tariff: US\$0.075/kWh with 2.5% annual escalation
- CAPEX: Approx. US\$95 million
- Commissioning Target: Q4 2026
- Emissions Offset: ~197,000 tonnes CO<sub>2</sub> annually

This project aligns directly with the government's 1.5 GW procurement framework and offers replicability at national scale.

## **Policy, Licensing, and Investment Environment**

- Transparent, structured IPP procurement under Ministry of Minerals and Energy
- Prospecting and generation licenses governed by the Minerals Act and Electricity Act
- Foreign ownership and capital repatriation fully permitted
- Active government discussions to streamline procurement for pre-capitalized projects

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- Botswana imposes no domestic content requirements for energy projects, allowing full foreign participation. Local EPC capacity is available for collaboration.

## **Broader Context: Energy Diversification and Demand Outlook**

- Botswana consumes approximately 21,000 barrels/day of refined fuel, largely imported
- Declining refinery capacity in South Africa has spurred energy security initiatives
- Government developing large-scale **coal-to-liquids**, **CBM-based gas**, and **petrochemical projects**, creating long-term power demand
- Total coal reserves exceed 200 billion tons; CBM reserves estimated at 200 TCF
- Synthetic fuels project under design: 24,000 barrels/day output, US\$6B capital requirement

## **Conclusion: First-Mover Advantage in a High-Irradiance Market**

Botswana presents one of Southern Africa's most underutilized solar markets — combining real power demand, high solar potential, and sovereign commitment to clean energy. With an 8 GW renewable energy target, an active 1.5 GW procurement window, and expanding grid infrastructure, the country offers an actionable entry point for long-term solar investors.

For developers and infrastructure partners seeking early access to a scalable, policy-aligned market — Botswana is not just promising, but open for business now.