

INTERNATIONAL  
SOLAR  
ALLIANCE

A photograph of a solar farm at sunset. The solar panels are tilted and arranged in rows, reflecting the orange and yellow light of the setting sun. The foreground is filled with tall grass and small yellow flowers. A large, bright yellow sun is partially visible on the right side of the image, partially obscured by a white curved graphic element.

# **Africa's Solar Strategy- Current Scenario, Investment, Business Models and Regulatory Frameworks**

**February 2026**



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**The “As-Is” Scenario: Africa’s  
Solar Paradox**

# The African Energy Paradox: High Resource Potential, Low Realisation



**60% of World's Best Solar Resources**



**Solar PV accounts for ~3% of continent's total electricity generation**

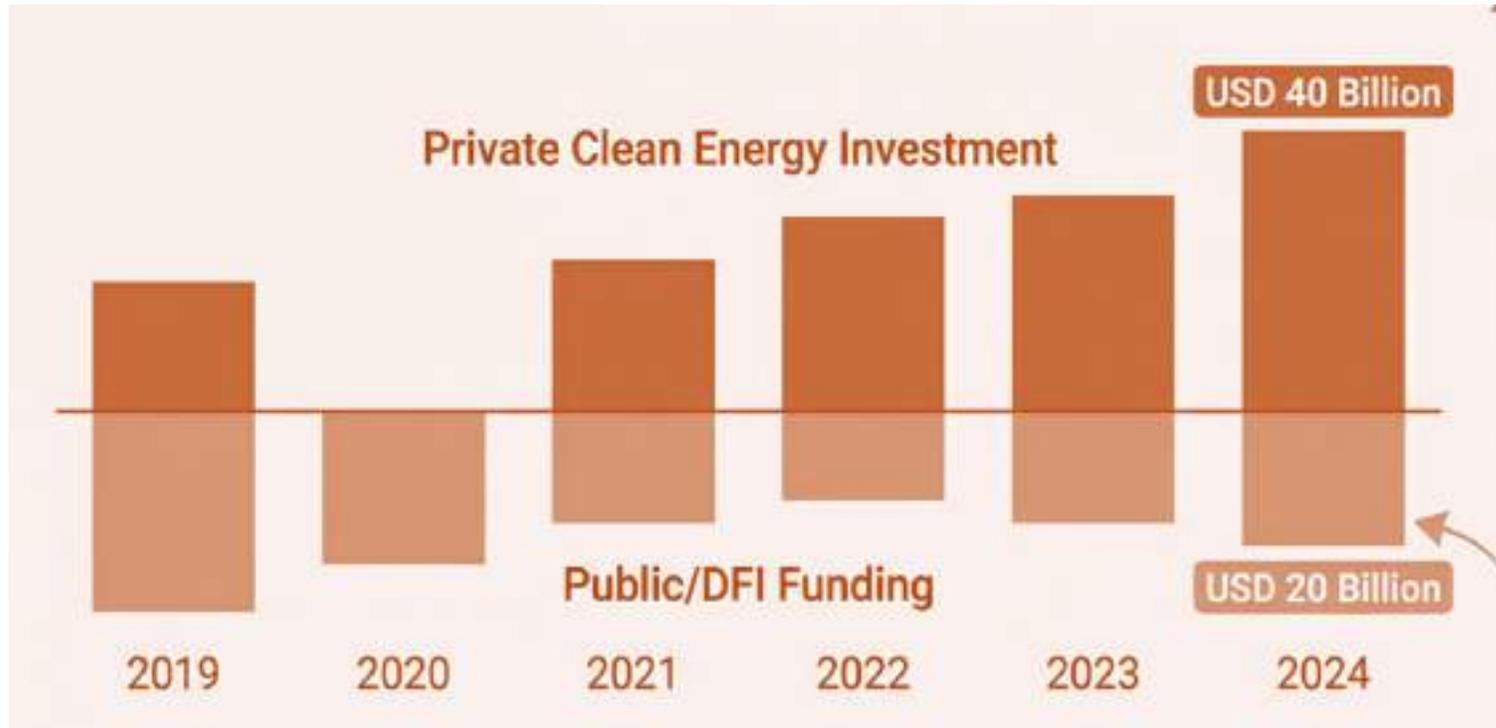
**600 million** people currently live without electricity

**Investment Gap:**  
Current ~USD 110bn vs  
Required USD 200bn/yr

**Clean Energy Share:**  
Only USD 40bn of total investment

**Credit Ratings:** Only Botswana and Mauritius held investment grade-ratings in 2023

**The mismatch between resource availability and generation is not a failure of technology but a gap in the market frameworks**



## Sector Deep Dive

Venture Capital (VC) and Private Equity are now dominant in early-stage access, providing 40% of capital for energy access start-ups since 2015

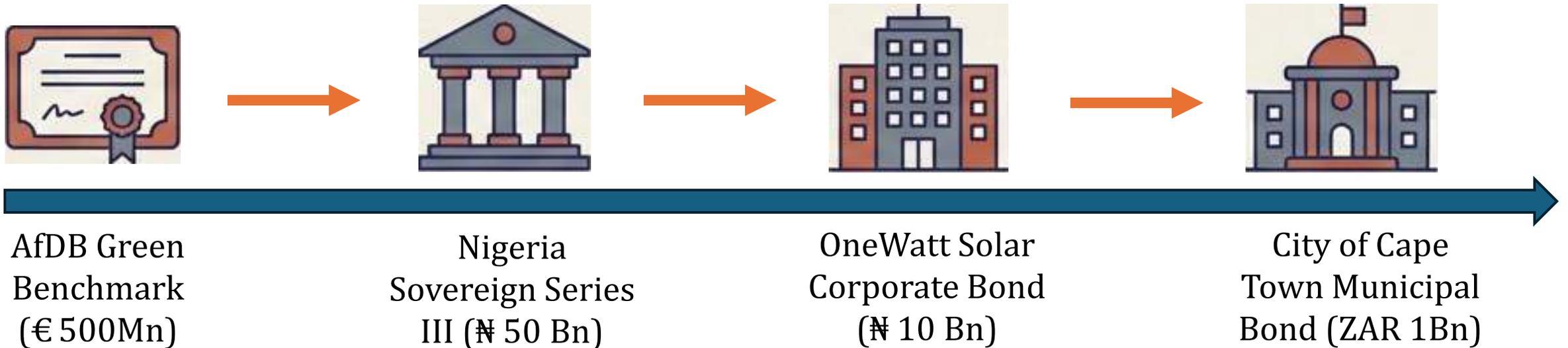
*Chinese DFI spending reduced by >85%*

VC attention is shifting from pure-play residential access to higher-growth areas like e-mobility (USD 70Mn invested in 2023) and C&I solar.

# Financial Innovation: De-Risking Markets with Green Bonds and Sukuk

Capital costs for solar in Africa are 3-7x higher than developed economies. Innovative instruments are bridging this gap.

## 2024-2025 issuances



### Market Trends

Approx. USD 10bn raised across ~80 deals by mid 2025

### Emerging Instruments

Rise of Green Sukuk (Egypt/Morocco) and asset-backed securitisation

# Africa energy finance is “de-risked” by public/DFIs debt which in turn has enabled PPP models to mobilize private capital at scale

## Africa's investment landscape

**\$110 billion**

Total energy investments in 2024

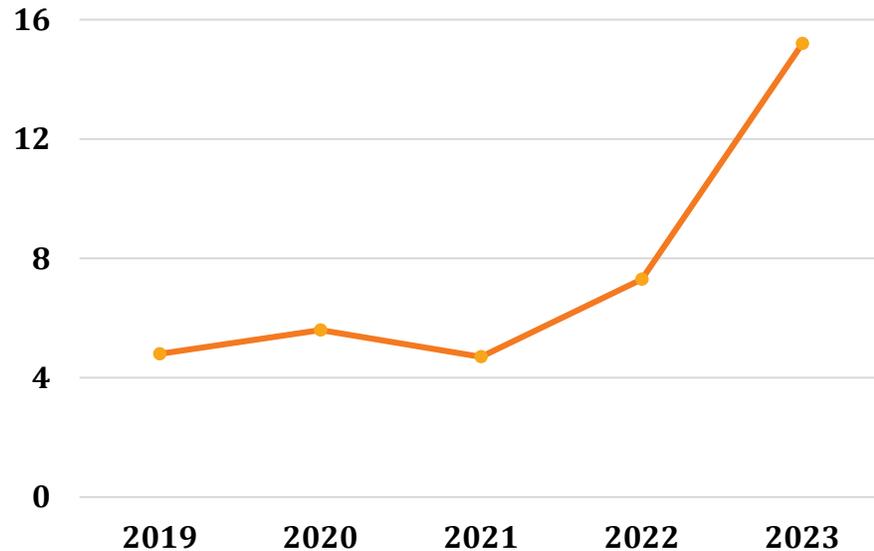
**90%** of private investments

via BOO/BOT out of all PPP models

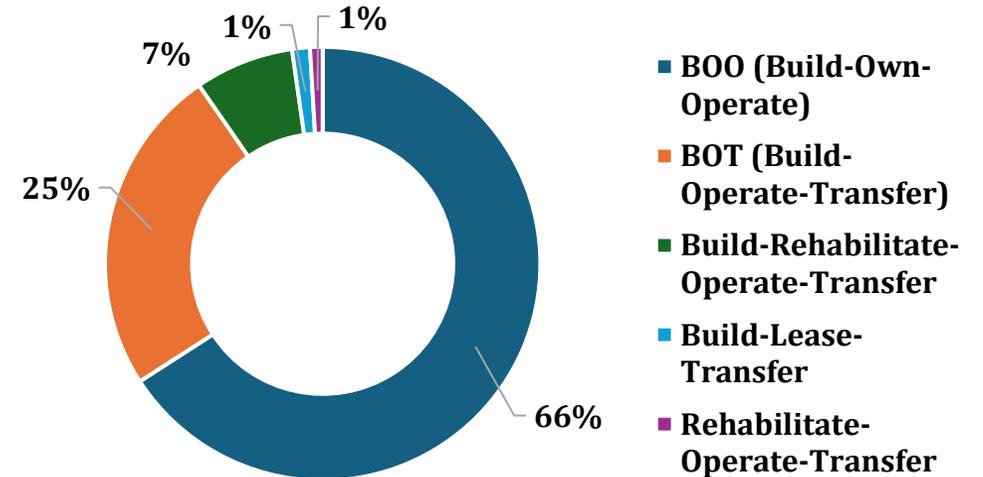
**75%** of RE investment (2010-20)

in South Africa, Morocco, Egypt, Kenya

## Clean energy investment in Africa (\$ billions)



## PPP investment models (2000-23)



Patterns from leading markets - South Africa, Egypt and Kenya - suggest successful Public-Private Partnership (PPP- BOO/BOT) models; targeted off-grid private funding could serve as practical pathways for scaling solar deployment across the continent.

# Commercial lenders have been comfortable in the southern and northern regions, with mature and developed electricity sectors

## Africa's private sector hotspots (2000-2023)

**409** (46.5 GW)

electricity generation projects

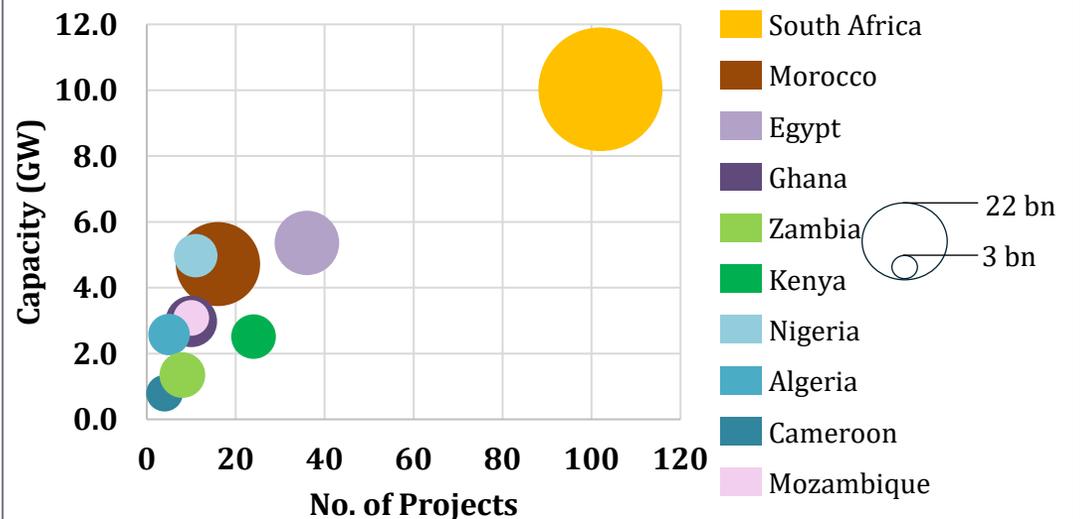
**\$68.7 billion**

Investments in the projects

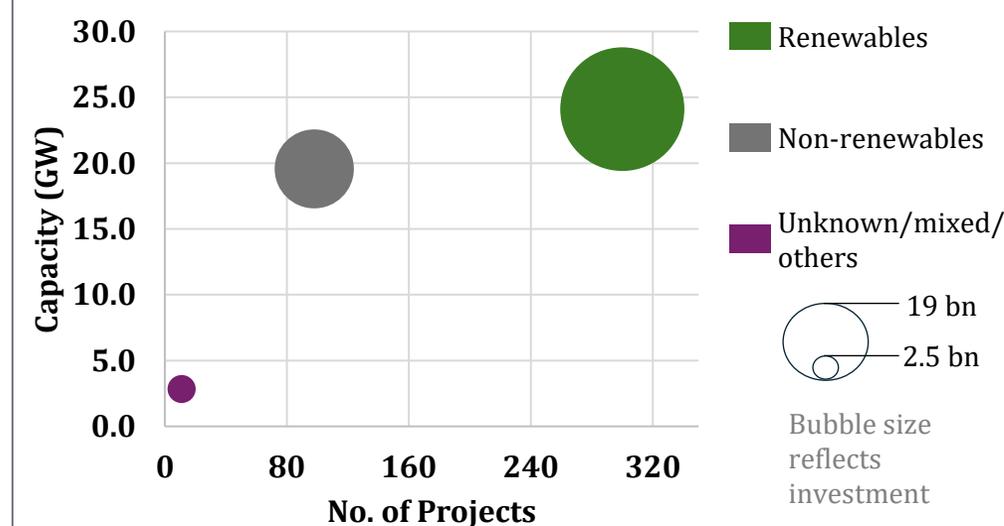
**60%** (2010-2019)

Investments into off-grid renewables

### Private investment in top 10 countries (2000-23)



### Private finance projects by fuel (2000-23)



Investment flows remain highly concentrated in countries with relatively predictable returns, stable policy environments, and stronger financial systems. Markets like South Africa, Egypt, Morocco, Kenya, and Nigeria dominate both public and private investment inflows.

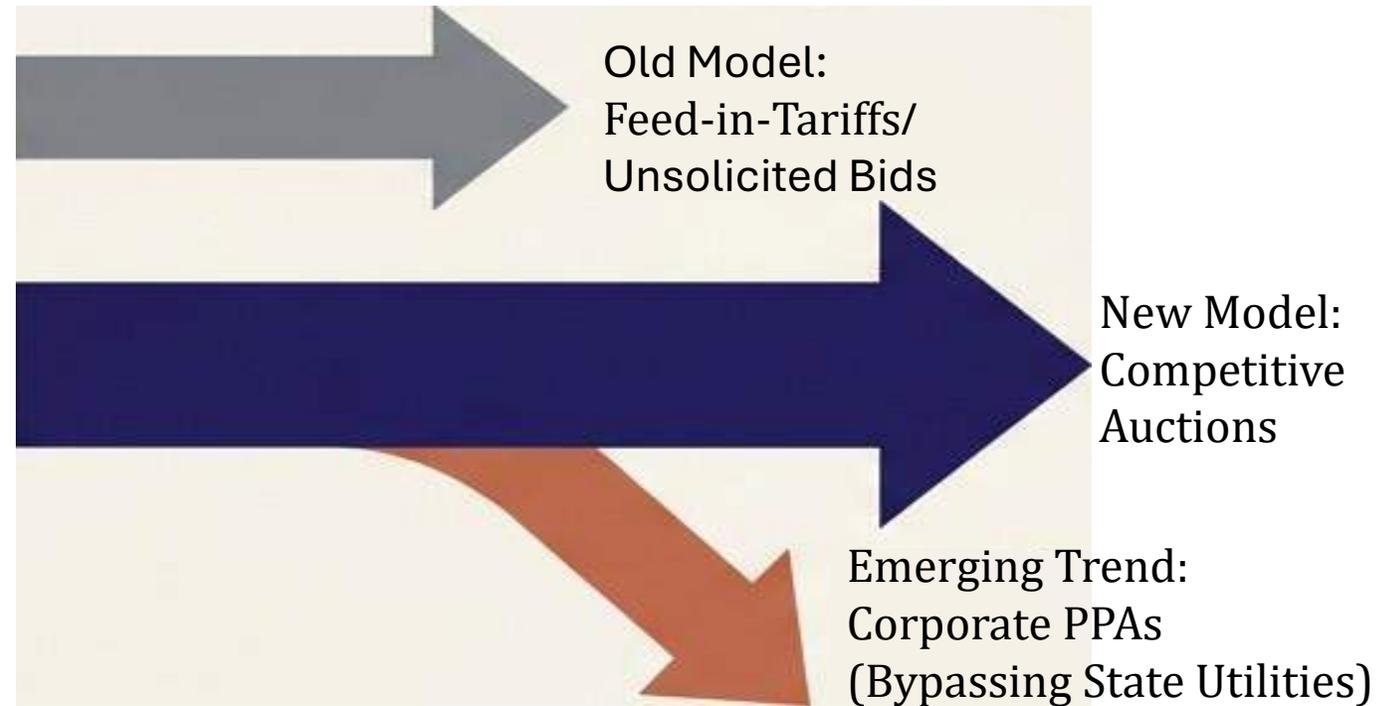


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**Evolving Business Models**

# Market Segment I: Utility-Scale solar shifting towards competitive procurement models

## Market Status

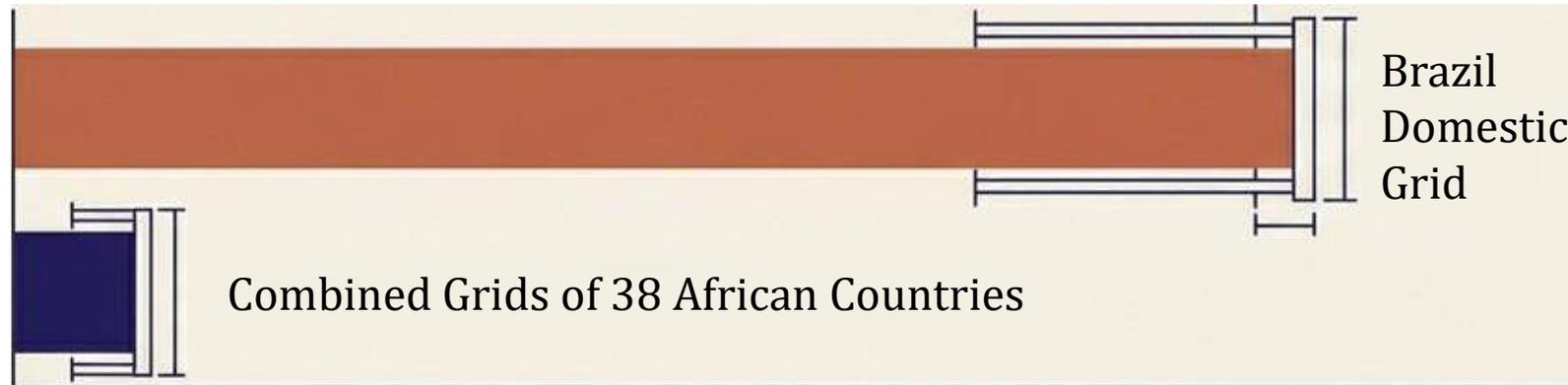
- Global pipeline exceeds 2.2 TW.
- Solar PV is now the least-cost source of power in most African jurisdictions.
- Tariff reductions of up to 80% achieved via competitive bidding (e.g. Namibia, Algeria)



Auctions lower costs but require rigid adherence to timelines to maintain investor trust. Bankability remains the primary bottleneck.

# The Physical Constraint: Grid Integration & Storage

## Transmission Network Scale



## Grid Health

**Average Line Losses:** ~15%  
(Sub-Saharan Africa)

**Grid Status:** Mostly isolated and small.

## The Storage Solution (BESS)



**Cost Reduction:** -93% since 2010 to USD 192/kWh (2024)

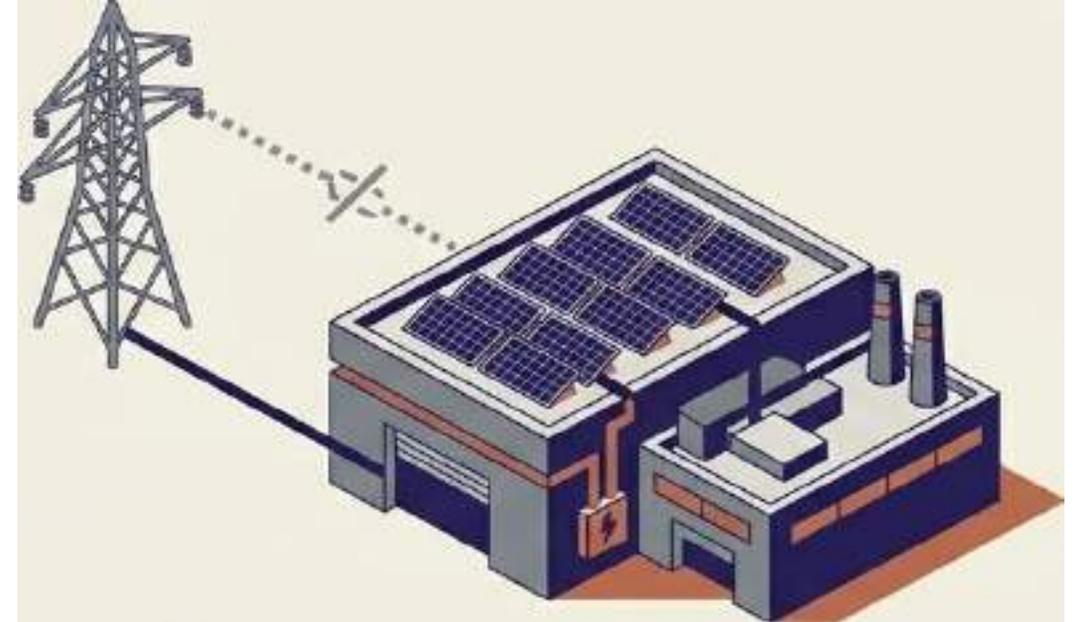


**Role:** Enables dispatchable solar to stabilise weak grids

Regulators must mandate storage in tenders and invest in grid digitalisation to prevent curtailment

# Market Segment II: Commercial & Industrial (C&I) Solar

A fundamental shift where the private sector defects from the grid to ensure reliability and cost control.



## Drivers

- High Diesel costs
- Grid unreliability (Record load shedding)

## Business Models

- Solar-as-a-Service model/ Leasing
- Third-Party PPA

## Market Data

- **Capacity:** >1.7GW (Sub-Saharan Africa, 2024)
- **Hotspots:** Nigeria, South Africa, Kenya

C&I offtake is currently considered less risky than residential/government offtake due to private sector creditworthiness.

## The Frontier: Wheeling

- Allows IPPs to use the grid to transport power to private buyers.
- Essential for scaling C&I beyond behind-the-meter solutions.
- Challenge: Balancing fixed grid cost recovery.



## Case Study: Kenya Energy (Net-Metering) Regulations 2024

- **Capacity:** 1 MW for C&I Customers.
- **Technology:** Requires bi-directional smart meters.
- **Credit:** 50% of the exported unit value.
- **Limitation:** Favours asset owners over third-party providers.

# Market Segment III: Off-Grid Trends & The Pay-G Victory



## Market Drivers



**Bundling:** Solar Home Systems sold with fans and TVs



**Regional Driver:** High cooling demand in West Africa (Nigeria)

## Policy Sensitivity



**Uganda:** Sales doubled (World Bank EASP subsidies)



**Rwanda:** Sales dropped 91% (Transition between subsidy programmes)



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**Regulatory Interventions**

# Regulatory Interventions for Utility Scale Proliferations

## Regulations

## Intervention

## How it has helped



### Scaling Solar (Country-Specific Regulation) <sup>1</sup>

- Zambia adopted IFC's Scaling Solar framework, integrating standardized PPAs, government support agreements, and grid-connection documents into its national regulation
- Implemented a transparent, fast-track solar tendering system backed by World Bank PRGs, MIGA insurance, and IFC financing tools

- Enabled Zambia to secure record-low solar tariffs of US¢6.02/kWh and US¢7.84/kWh, among Africa's lowest at the time
- Reduced negotiation time, increased investor confidence, and delivered 88 MWp of clean grid-connected utility-scale solar capacity



### REI4P (Renewable Energy Independent Power Producer Procurement Programme) <sup>2</sup>

- World-class competitive procurement program launched in 2011, designed to attract private IPPs through transparent, rolling bid windows
- Managed by South Africa's Independent Power Producer (IPP) Office, ensuring clear governance, standardized processes, and transparent communication

- REI4P has attracted USD \$16 billion in private investment, delivering 79 awarded projects totalling 5,243 MW of renewable energy-one of the largest procurement successes globally
- Over its seven bid rounds, REI4P has procured ~12 GW and attracted R250 billion in investment, significantly lowering solar and wind tariffs and boosting local renewable energy expertise

# Regulatory Interventions for C&I Installations



## South Africa

### 1. Electricity Regulation Amendment Act (ERAA), 2024 <sup>1</sup>

#### Features:

- Opens electricity market to competition; enables private wheeling and PPAs
- Supports unbundling of Eskom and open grid access for C&I solar.

#### Benefits:

- Unlocks large corporate PPA market; accelerates wheeled C&I solar projects.

### 2. National Electricity Wheeling Framework (2025) <sup>2</sup>

#### Features:

- Mandates non-discriminatory open grid access + cost-reflective tariffs
- Ensures transparent pricing, regulatory certainty, and standardized processes.

#### Benefits:

- Boosts corporate adoption; improves grid access for large C&I solar developers.



## Kenya

### 1. Energy (Net-Metering) Regulations, 2024 <sup>3</sup>

#### Features:

- Allows C&I solar systems up to 1 MW to export surplus energy to the grid
- Uses a bi-directional net meter to track imports and exports.

#### Benefits:

- Lower electricity bills by offsetting grid use with solar exports.
- Better ROI through export credits - up to 50% of retail tariff (2025 guidance)

### 2. VAT Exemption & Import Duty Exemption for Solar Equipment <sup>4</sup>

#### Features:

- Zero-rated VAT on panels, batteries, inverters + reduced import duties
- Accelerated capital allowances for corporate solar investments.

#### Benefits:

- Significant reduction in C&I solar CAPEX
- Strong incentive for corporate procurement

# Regulatory Interventions for DRE Proliferation

## African Model Mini-Grid Regulations (AMMR)<sup>1,2</sup>



### Implementors

Type: Continental model framework

#### Features:

- Cost-reflective tariff methodology (tariff caps, asset depreciation, smoothing fluctuations).
- Simplifies administrative and licensing processes.
- Provides structured templates for regulators (up to 90% implementation-ready).

#### Benefits:

- Creates clarity and predictability for investors.
- Standardises minigrid rules across the continent, reducing market fragmentation.
- Helps countries adopt investor-friendly, technically sound regulations.

**Country Coverage:** Intended for adoption across **multiple African countries**; already drawing interest from **Cameroon, Lesotho, Burkina Faso, Zimbabwe**

## DER Regulatory Reforms<sup>4,5</sup>



### Implementors

Type: Licence exemption for private generators

#### Features:

- License threshold expanded from 1MW to 100MW, allowing large distributed generation projects without licensing requirement.
- Further reforms removed the licensing requirements entirely.
- Projects can wheel power through the grid, supporting third-party supply model.

#### Benefits:

- Major surge in DER projects (from 134 MW in 2021 → 4,490 MW in 2023). [get-transform.eu]
- Reduces severe load-shedding and power shortages.
- Unlocks large private investment & enables C&I solar growth.
- Strengthens energy security by reducing reliance on Eskom.

**Country Coverage:** South Africa



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**Let no one be left behind.  
Thank You!**