



# ZENO ENERGY

ZENOSWAP POWER SOLUTION

# EXECUTIVE SUMMARY

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## OVERVIEW OF BUSINESS IDEA

Nigeria's SMEs, especially in rural areas, struggle with unreliable power supply, resorting to expensive and polluting traditional generators. To address this, the introduction of an innovative and scalable solution

*— Zeno Swap System offers a promising alternative to traditional power sources, providing reliability, cost effectiveness, and sustainability .*

# EXECUTIVE SUMMARY

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## PROBLEM STATEMENT

➤ Energy is a crucial ingredient for the social, economic, and industrial development of every nation.

➤ The frequent power outages impact the business performance of SME managers in Nigeria.

➤ According to World Bank (2017) 43.5% of Nigerians living in 774 Local Government Areas lack access to electricity



# EXECUTIVE SUMMARY

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## PROBLEM STATEMENT

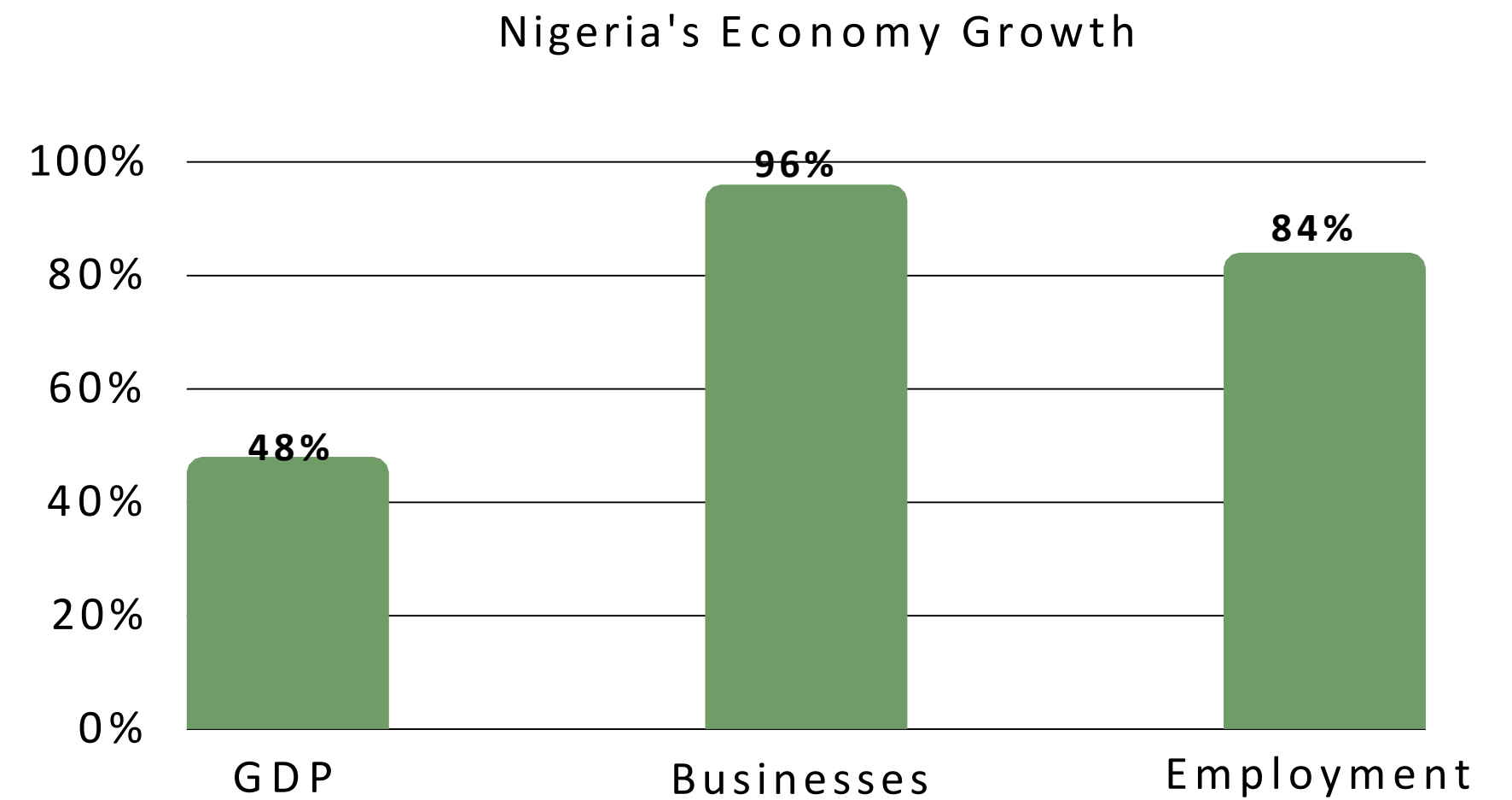
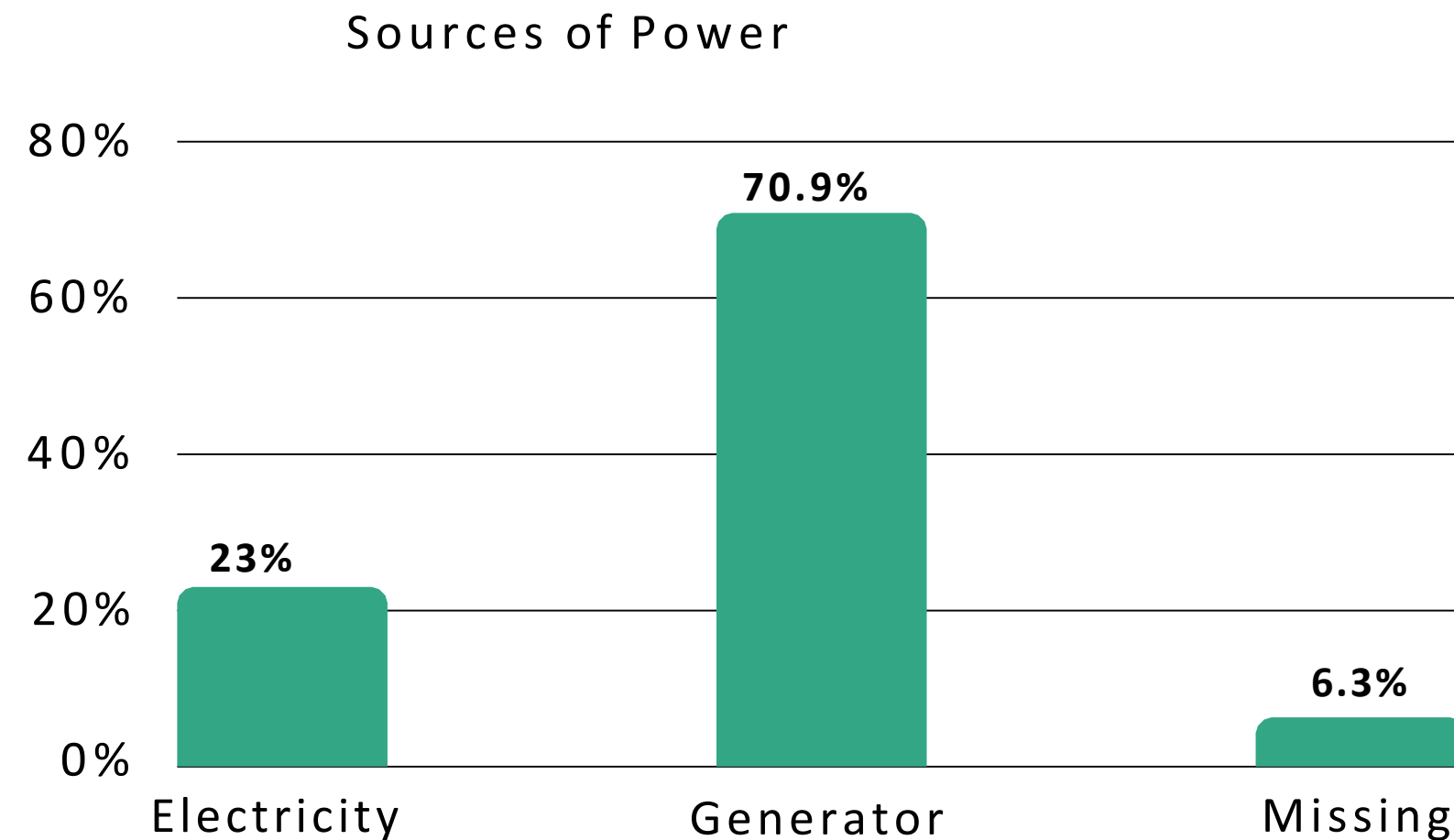
- Power supply is the major driving force for all businesses in today's competitive world. It is therefore important that an access to stable power supply is essential for the success of any business which in turn leads to consumer satisfaction, high productivity, profitability, employment and overall economic growth.
- The drive for this initiative is to provide power solution that is affordable, durable, scalable and adaptable for the small and medium scale enterprises (SMEs) that account 48% of Nigeria's GDP.

# EXECUTIVE SUMMARY

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## PROBLEM STATEMENT

- ▶▶ About 70% of SMEs rely on costly generators
- ▶▶ SMEs in Nigeria contribute 48% to the national GDP



# EXECUTIVE SUMMARY

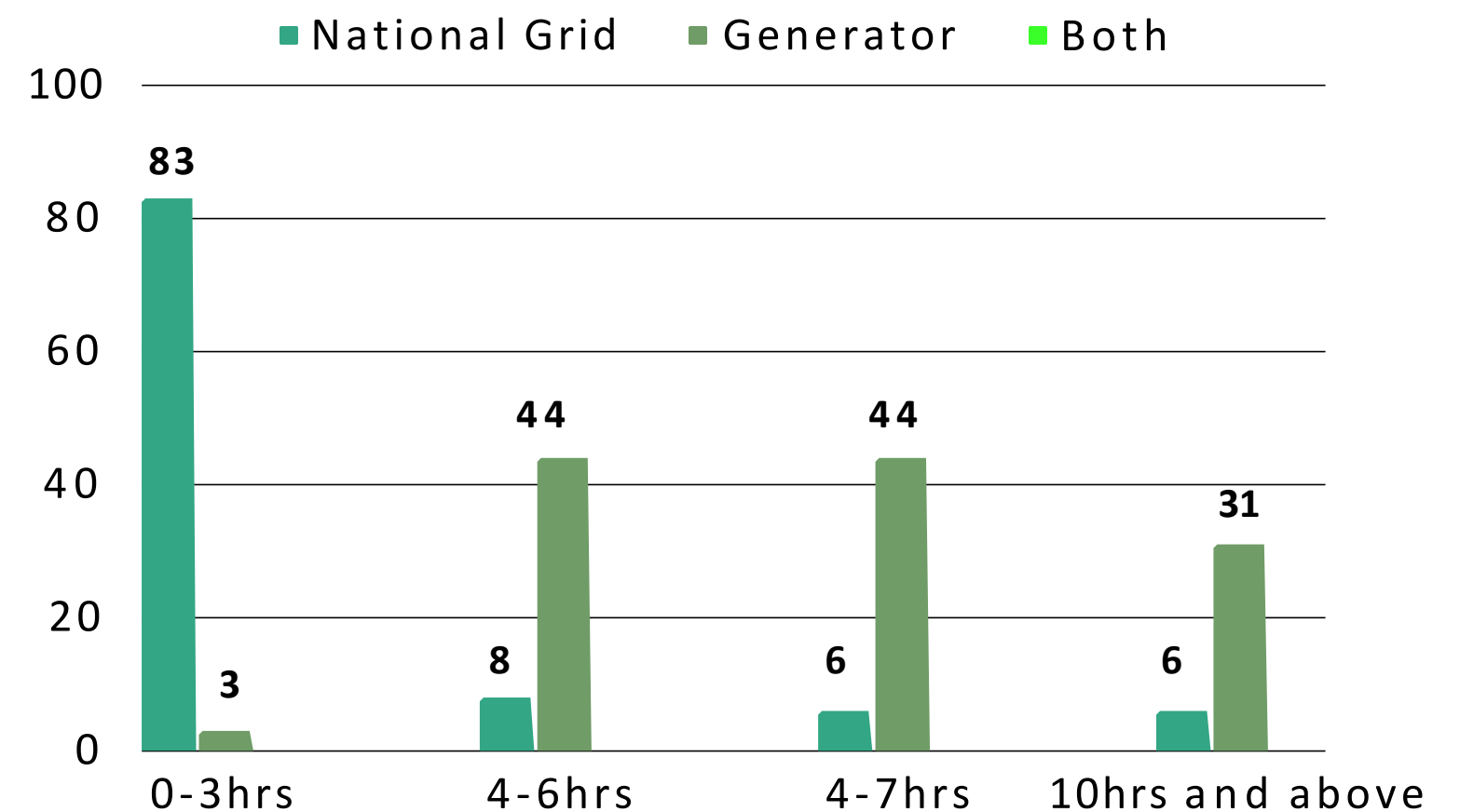
## PROBLEM STATEMENT

- ▶ A Recent survey conducted in 2020 to assess the daily usage of electricity in running daily business activities from three different sources of power supply:

By and large, 83 businesses that rely only on the national grid use electricity between 0-3 hours; 8 firms use between 4 & 6 hours, and 6 use between 10 hours and above. Firms that rely solely on generating rate have 3 of them using between 0-3 hours daily, 44 use between 4-7 hours, and 31 use 10 hours and above. The power supply increased with a combination of both sources for about 178 and 167 firms having access to electricity use for 7-9 hours and 10 hours and above respectively.

**Distribution of SMEs daily power supply by source**

(Omokanmi, Oke, & Ridwan 2010)



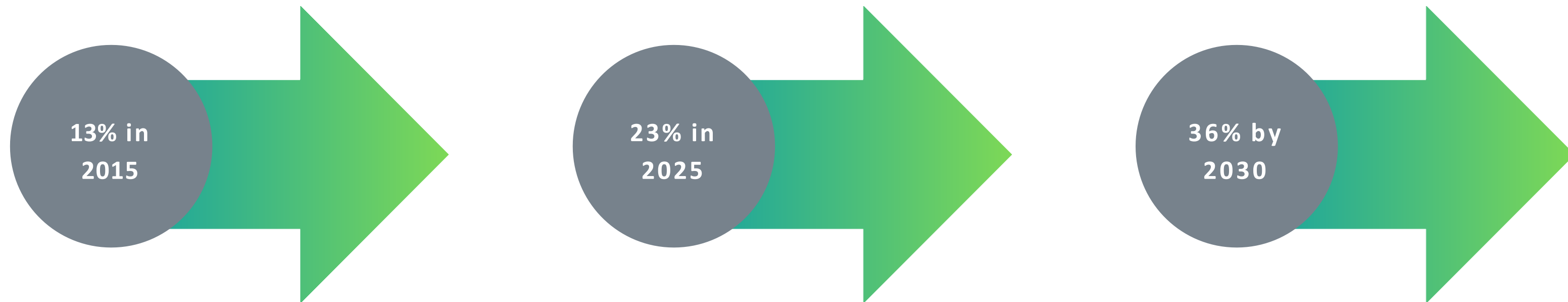
# EXECUTIVE SUMMARY

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## PROBLEM STATEMENT

### ▶▶ Government Initiatives:

In 2006, Nigeria launched the Renewable Energy Master Plan (REMP) to raise renewable electricity supply from 13% in 2015 to 23% in 2025 and 36% by 2030



# EXECUTIVE SUMMARY

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## PROBLEM STATEMENT

### ▶▶ Government Initiatives: Nigeria's Energy Transition Plan (ETP)

**Decarbonization Strategy:** Aims to eliminate diesel/petrol generators and expand generation capacity via renewable sources, primarily Solar.

**Energy  
Efficiency**

***Renewable  
Energy***

***Building  
Electrification***



# MARKET ANALYSIS

## TARGET AUDIENCE

### 01 Micro Small and Medium sized Enterprises

- MSMEs operating in rural areas, such as agribusinesses, small scale manufacturing units, local shops, and service providers facing inconsistent or inadequate power supply

### 02 Social Enterprises and Nonprofits

- Community Projects: Social enterprises, NGOs, or community focused organizations involved in rural development initiatives and seeking sustainable energy solutions

### 03 Government and Development Agencies

- Rural Development Programs: Government initiatives, development agencies, or cooperatives aiming to support rural electrification and economic growth

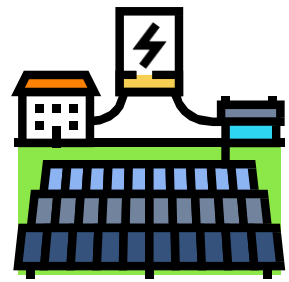
### 04 Entrepreneurs and Startups

- Emerging Businesses: New ventures or startups aiming to establish themselves in rural communities, requiring dependable and cost effective power solutions.

# MARKET ANALYSIS

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## POTENTIAL FOR MARKET



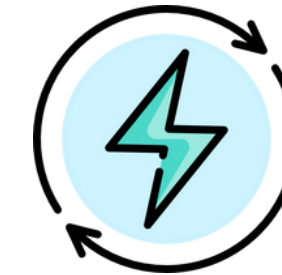
**Off-Grid Solutions:** The rural areas, in particular, present a significant market for renewable energy solutions like solar, wind, and battery storage systems due to inadequate access to the main grid.



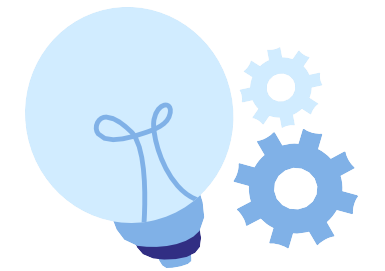
**Agricultural Technology:** Nigeria's agriculture sector is vast, and there's a growing demand for tech-driven solutions for increased productivity, irrigation systems, and agro-processing.



**Market Readiness:** SMEs, particularly in rural areas, are seeking reliable and affordable alternatives to traditional power sources, presenting a ripe market for innovative solutions like the E-Swap Battery System.



**Demand for Sustainable Energy Solutions:** There's a growing awareness and interest among Nigerian SMEs in adopting sustainable and cost-effective energy solutions to reduce reliance on generators and lower operational costs.



**Digital Solutions:** Nigeria has a burgeoning tech industry with potential for software development, mobile applications, fintech, and e-commerce platforms due to increasing internet penetration.

# MARKET ANALYSIS

## DEMOGRAPHY



**Small and Medium-sized Enterprises:** Including micro-enterprises, small shops, agribusinesses, and local service providers.

Business Type and Size



**Rural Areas:** SMEs situated in remote or rural regions lacking consistent access to stable electricity from the main grid.

Geographical Location



**Varied Levels of Education:** Business owners and operators with diverse educational backgrounds, from minimal formal education to higher levels of qualification.

Educational Background



Industry Segment

**Agribusiness:** Farms, food processing units, and agricultural cooperatives.

**Retail and Services:** Local stores, markets, and service-oriented businesses.

**Education and Healthcare:** Rural schools, clinics, and community healthcare centers.



Financial Status

**Varied Financial Capacities:** Ranging from micro-enterprises with limited resources to moderately sized SMEs with slightly higher financial capabilities.



Socio Cultural Context

**Community-Centric:** Often deeply integrated into local communities, reflecting cultural norms and societal structures.

Business Lifecycle



**Establishment Stage:** Includes startups and new ventures seeking stability and growth opportunities.

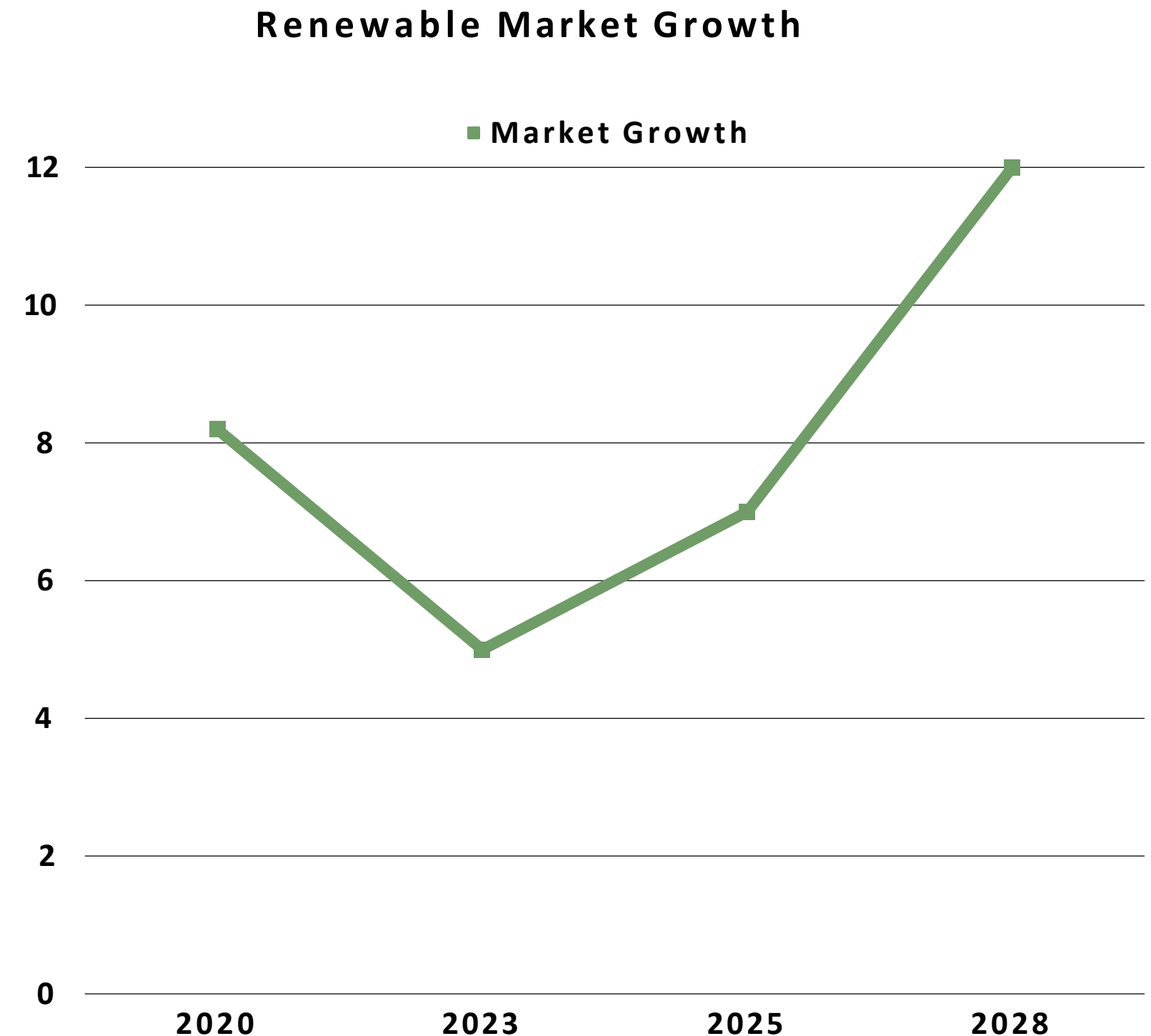
**Established Businesses:** SMEs with operational history facing challenges with existing power solutions.

# MARKET ANALYSIS

## Nigeria Growth Analysis

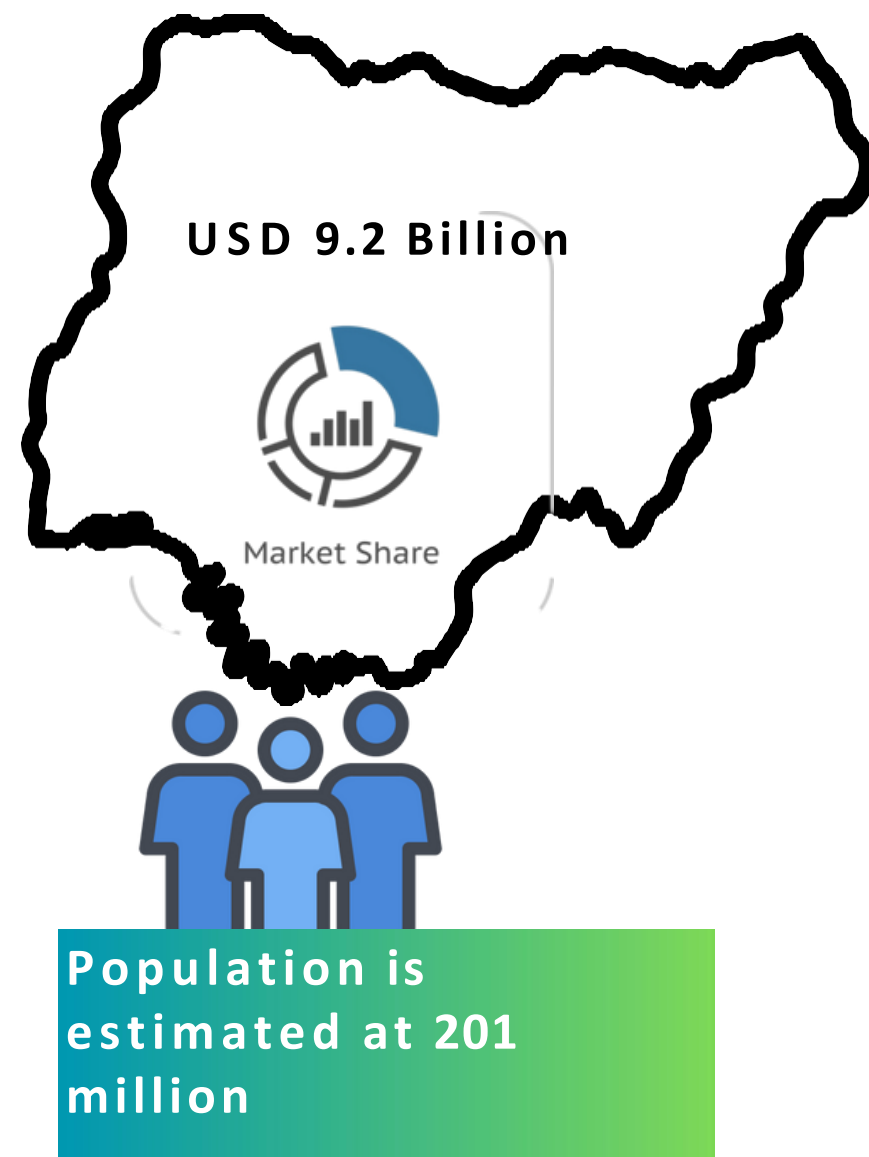
### Number of people using portable power station

- The COVID-19 pandemic negatively impacted the market in 2020
- Presently, market has reached a pre pandemic levels
- Over the long term: Government policies and technology advancement is expected to drive the marker growth
- Technological advancements in solar PV manufacturing will likely create lucrative growth opportunities for Nigeria's renewable energy market in the forecast period.

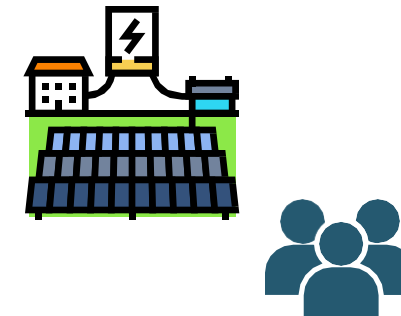


# MARKET ANALYSIS

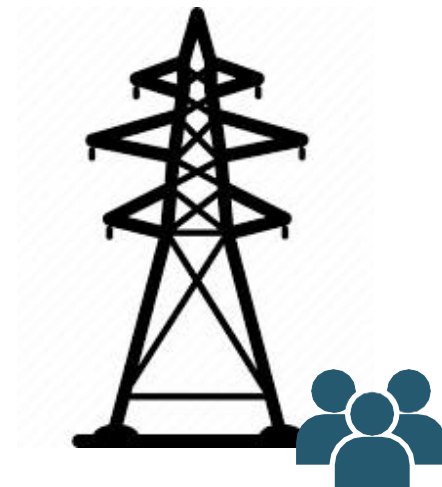
## Market Size Overview



- Nigerian OGS Market opportunity is estimated at USD 9.2 Billion
  - SAS sector receiving over USD303 million from 2015 to date
- The PPS market in Middle East & Africa is expected to grow from US\$ 12.67 million in 2021 to US\$ 15.92 million by 2028; it is estimated to grow at a CAGR of 3.3% from 2021 to 2028.



Estimated 90 million live entirely off-grid

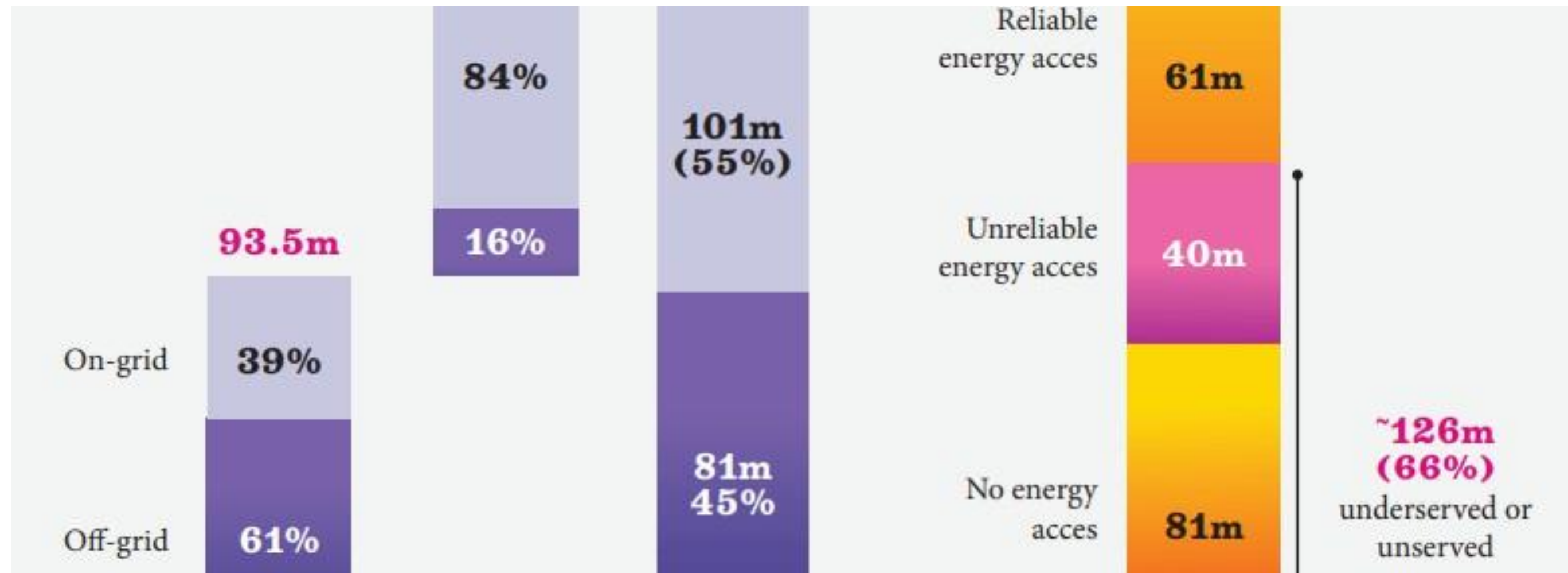


80% On-Grid Electrification Status

estimated over 120 million connected on-grid unreliable electricity with a host of alternatives

# MARKET ANALYSIS

## NIGERIA'S OFF-GRID OPPORTUNITIES

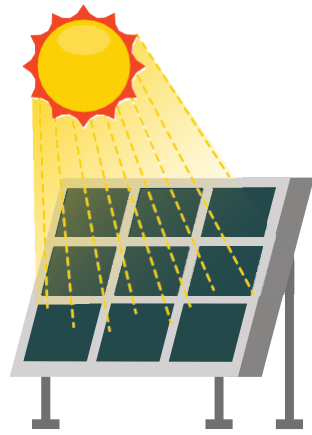


Source: Nigeria's Energy Report (2019)

# MARKET ANALYSIS

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## OFF-GRID STAND ALONE SOLAR PRODUCTS



### **SOLAR LANTERN**

Single piece lantern, with or without a separate charging panel.



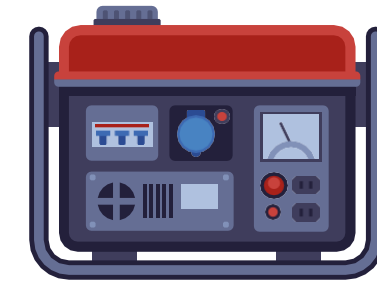
### **SOLAR HOME SYSTEM (SHS)**

A complete unit including solar panel, multiple lighting points, control unit, and associated DC appliances that all come as a single kit.



### **SOLAR PANEL**

A solar panel that is independently sourced and coupled at the point of sale together with other power components to form a solar energy solution. Other associated components include batteries, charge controllers, inverters, and associated wiring.



### **PORTABLE POWER STATION**

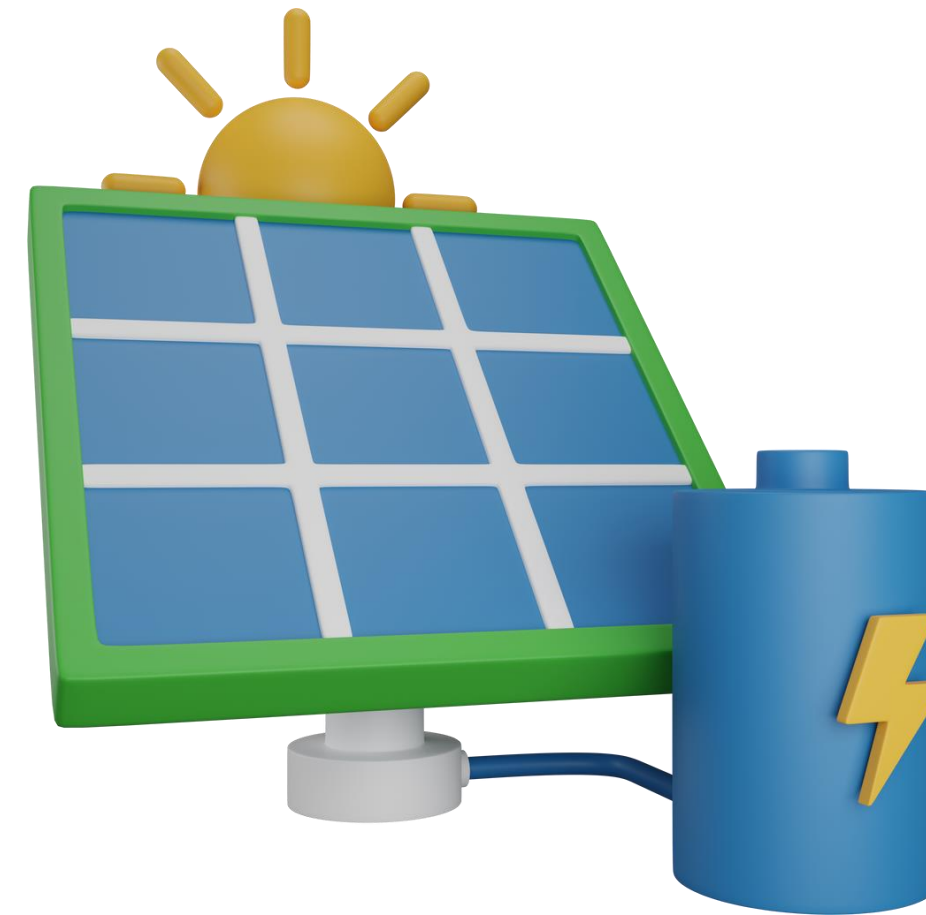
Portable power stations provide off grid electricity using a rechargeable battery. They're similar to power banks but have a larger capacity, higher output power, and AC (wall) outlets so they can power anything from phones to home appliances.

# ZENO SWAP: BATTERY AS A SERVICE

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## ZENO SWAP

The Zeno-Swap Battery System is a cutting-edge, modular energy solution designed specifically for Nigerian SMEs, especially those in rural and semi urban areas facing energy challenges. This innovative system provides a reliable, sustainable, and scalable power source tailored to meet the diverse energy needs of small and medium-sized businesses.



**Off the Grid Power Solution**



# ZENO SWAP: BATTERY AS A SERVICE

## ZenoSwap VALUE PROPOSITION

### Reliable & Clean Energy



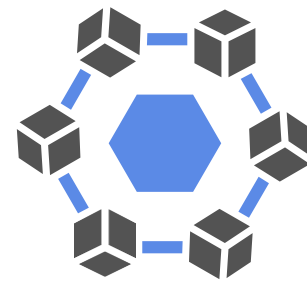
Its compatibility with renewable energy sources like solar panels enhances its versatility. This integration distinguishes it as a system ready for the future, aligned with sustainability goals.

### Cost Effective Solution



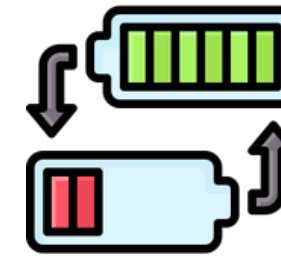
Offers a cost-effective energy solution by minimizing operational costs associated with fuel and maintenance of traditional generators, thereby reducing long-term expenses for SMEs.

### Modular & Scalable Design



The ZenoSwap Battery System's modular design allows for scalability, enabling SMEs to start with a smaller capacity and expand gradually based on their growing energy demands.

### Swappable Battery Packs



The concept of swappable battery packs ensures uninterrupted power supply. This feature is unique in mitigating downtime, offering businesses continuous power without the need for extensive recharging or waiting periods.

### Comprehensive Support Ecosystem



The system's inclusive support system, covering installation, training, maintenance, and customer support, ensures that SMEs can effectively operate and maintain the system without facing technical hurdles.

### Impact on Local Economies



Its potential to enhance productivity, support extended working hours, and contribute to economic growth within rural areas sets it apart in terms of its positive impact on local communities and businesses.

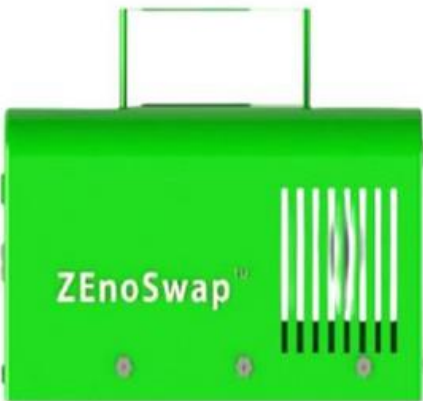
# ZENO SWAP: BATTERY AS A SERVICE

## ZenoSwap

- Energy storage & Distribution
- Power supply to consumers



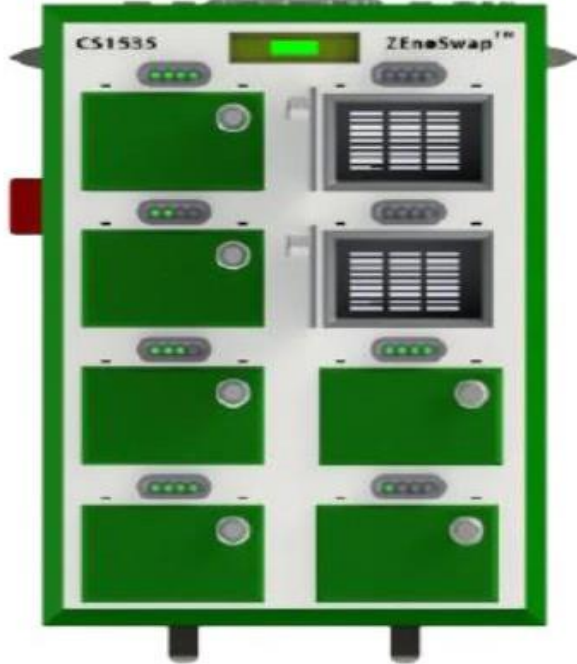
Isometric-left view



left view



Isometric-right view



## Zeno Swap Station

- Solar Power Charging Station to charge the Zeno battery/device

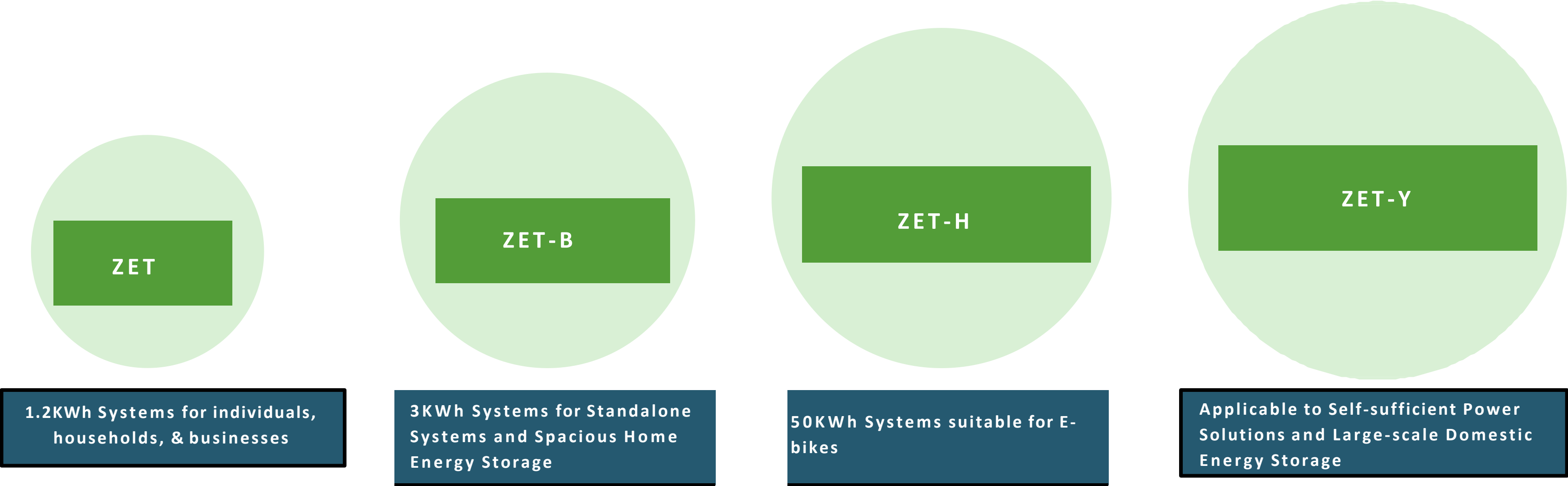
# ZENO SWAP: SPECIFICATION

<p>POWER BOX</p>	<p>1-1.5KVA Rated Max Output Power          4nos of USB PORT.          4nos DC JACK PORT          INBUILT LED TORCH LIGHT.          LCD DISPLAY          Short circuit protection.          Overload/underload protection.          DC output port.          Product dimension: 350mmx230mmx180mm          Weight: ~21kg</p>
<p>BATTERY BANK</p>	<p>1,700-2000Whr energy storage          70Ah Battery Bank.          Lifepo4(Lithium) Battery technology.          Battery level led indicator          Short circuit protection.          Over discharge protection.          Compatibility with ZEP.          Product dimension: 220mmx150mmx160mm          Weight: ~17kg</p>
<p>CHARGING STATION</p>	<p>Upto20kWhr energy storage          Lifepo4(Lithium) Battery technology.          Battery charging levelled indicator          Short circuit protection.          Compatibility with ZET.          WEB / Remote monitoring interface.          Product dimension: 1200mmx80mmx265mm(LXWXD)          Weight: ~45kg</p>

# ZENO SWAP: BATTERY AS A SERVICE

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## ZENO SWAP: GROWTH PLAN



# ZENO SWAP: SIDE BY SIDE

	ZENO SWAP	SOLAR PANEL	SOLAR HOME SYSTEM	PORTABLE POWER STATION
Low cost	✓	✗	✗	✗
Portable	✓	✗	✗	✓
Renewable Energy	✓	✓	✓	✓
Swappable battery pack	✓	✗	✗	✗
Scalable	✓	✗	✗	✗
Impact local economies	✓	✗	✗	✗

# ZENO SWAP: BUSINESS MODEL

## Revenue Analysis



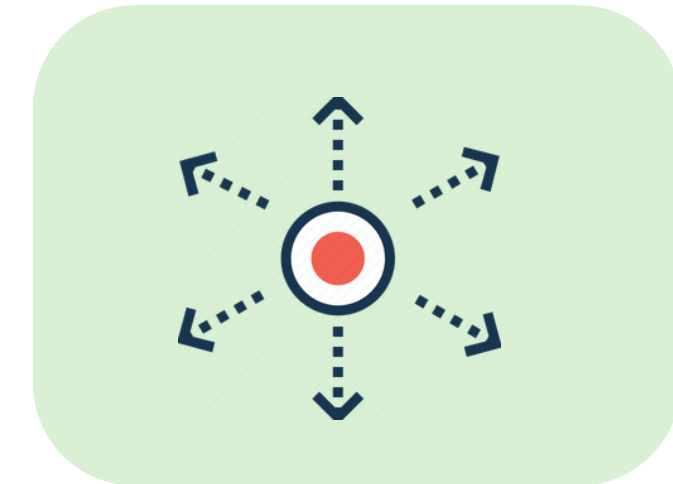
### **ZenoSwap Sales**

Revenue generated from selling the Zeno-Swap Battery System units to SMEs and institutions in rural areas. This includes various capacities of the battery system based on their energy needs.



### **Service Package**

Additional revenue streams from bundled services such as installation, training, maintenance, and after-sales support provided alongside the product.



### **Diversification:**

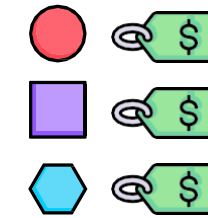
Exploring additional revenue streams such as licensing technology, providing data analytics, or offering subscription-based models for ongoing services.

# ZENO SWAP: PRICING STRATEGY

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- **Tiered Pricing Model**

- Offering different configurations and capacities of the E-Swap Battery System at various price points



- **Leasing or Rental Options**

- Implementing leasing or rental models where SMEs pay periodic fees instead of an upfront cost, making the system accessible with lower initial investment barriers.



- **Pay-As-You-Go (PAYG) Model**

- Allowing SMEs to purchase energy credits or units as needed, aligning costs with actual usage and ensuring affordability, especially for businesses with variable energy needs.



- **Partnership Discounts and Incentives**

- Introducing discounts or incentives for early adopters, Government agencies, strategic partners, or bulk purchasers to encourage initial uptake and partnerships.



- **Tailored Financial Models**

- Providing flexible financing options or payment plans tailored to the financial capabilities of SMEs, ensuring affordability and accessibility.



# ZENO SWAP: SWOT

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- Modular & Scalable design
- Swappable battery pack
- User-friendly

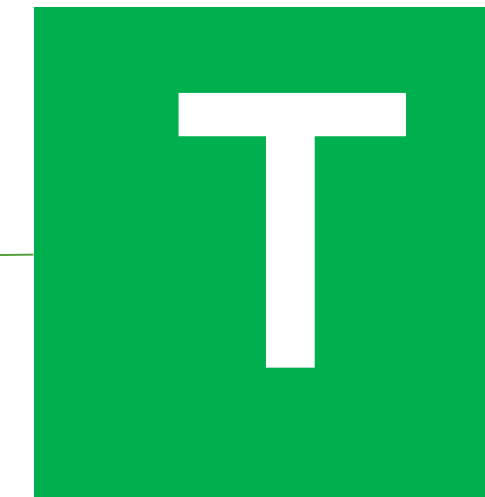


- Rising Demand
- Renewable energy sector growth
- Market is estimated at \$9.2B
- Government incentives
- Technology partnership

- Initial cost
- Limited market awareness
- Technological dependencies
- Dependence on components

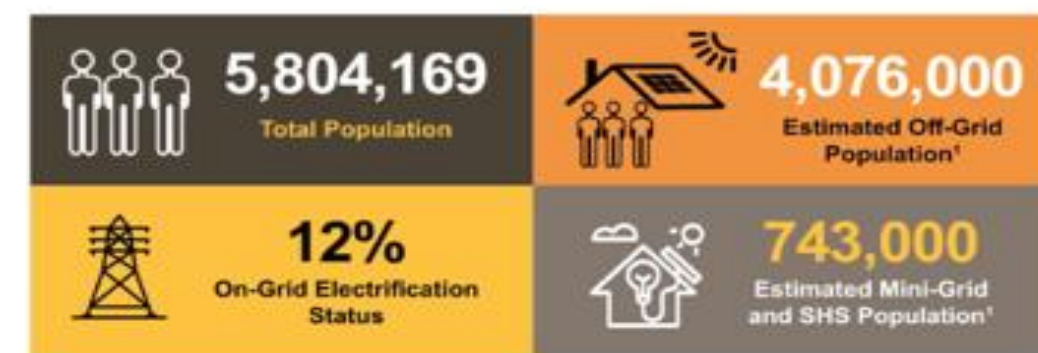
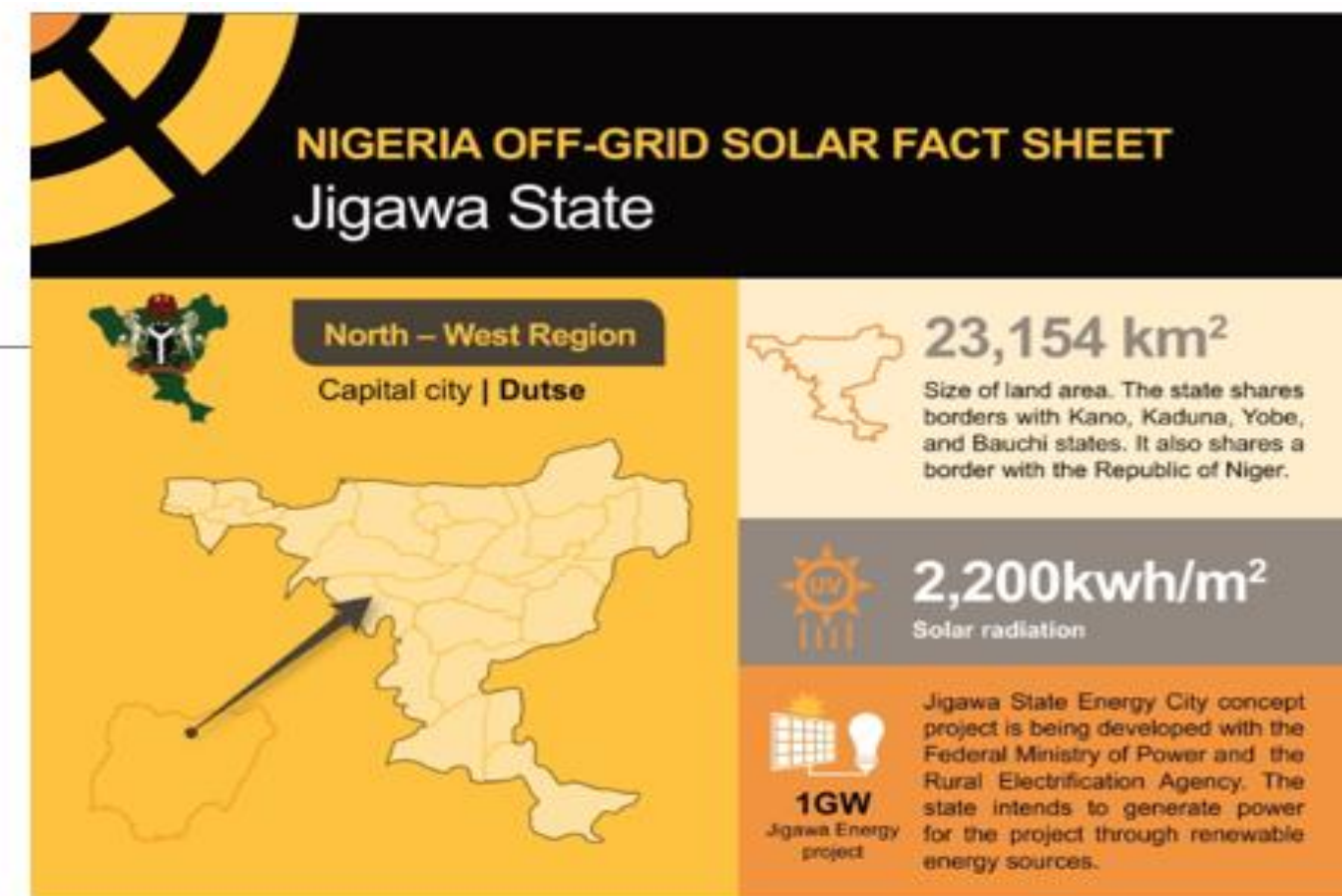
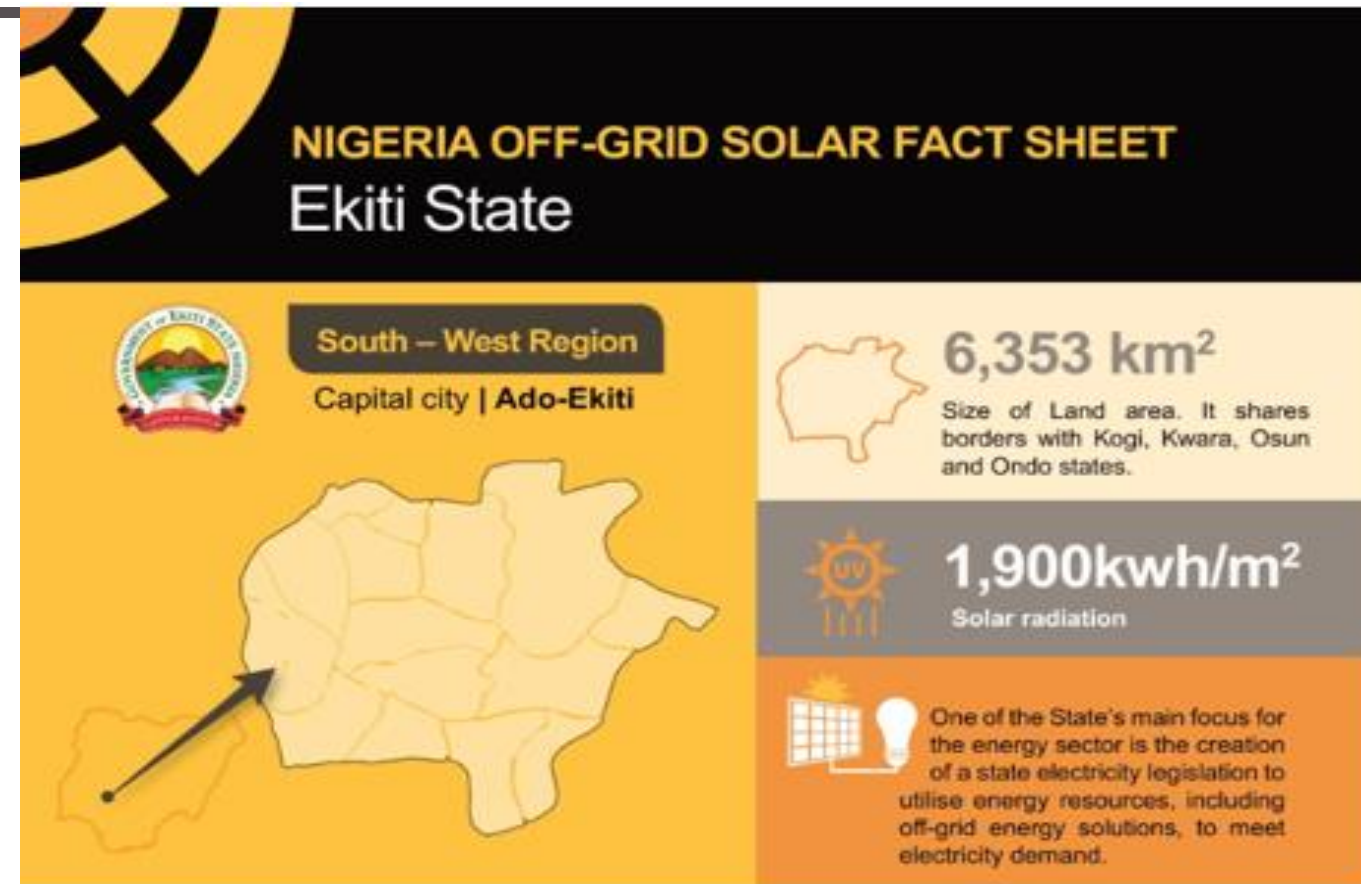


- Competitive market
- Regulatory changes
- Supply chain distribution
- Substitute technology





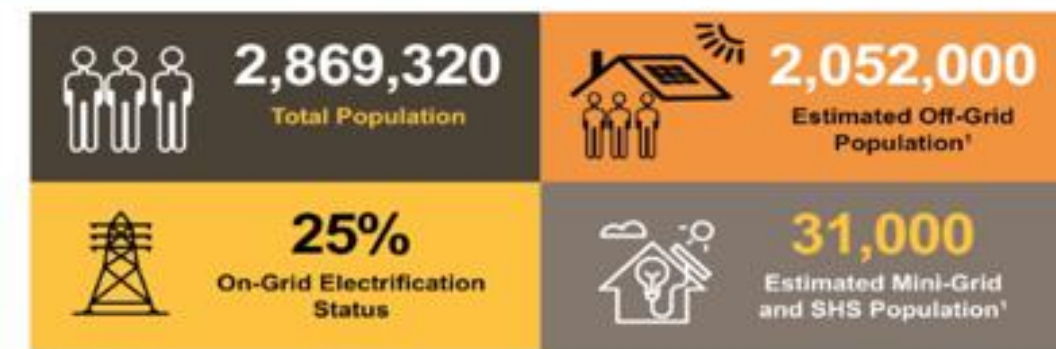
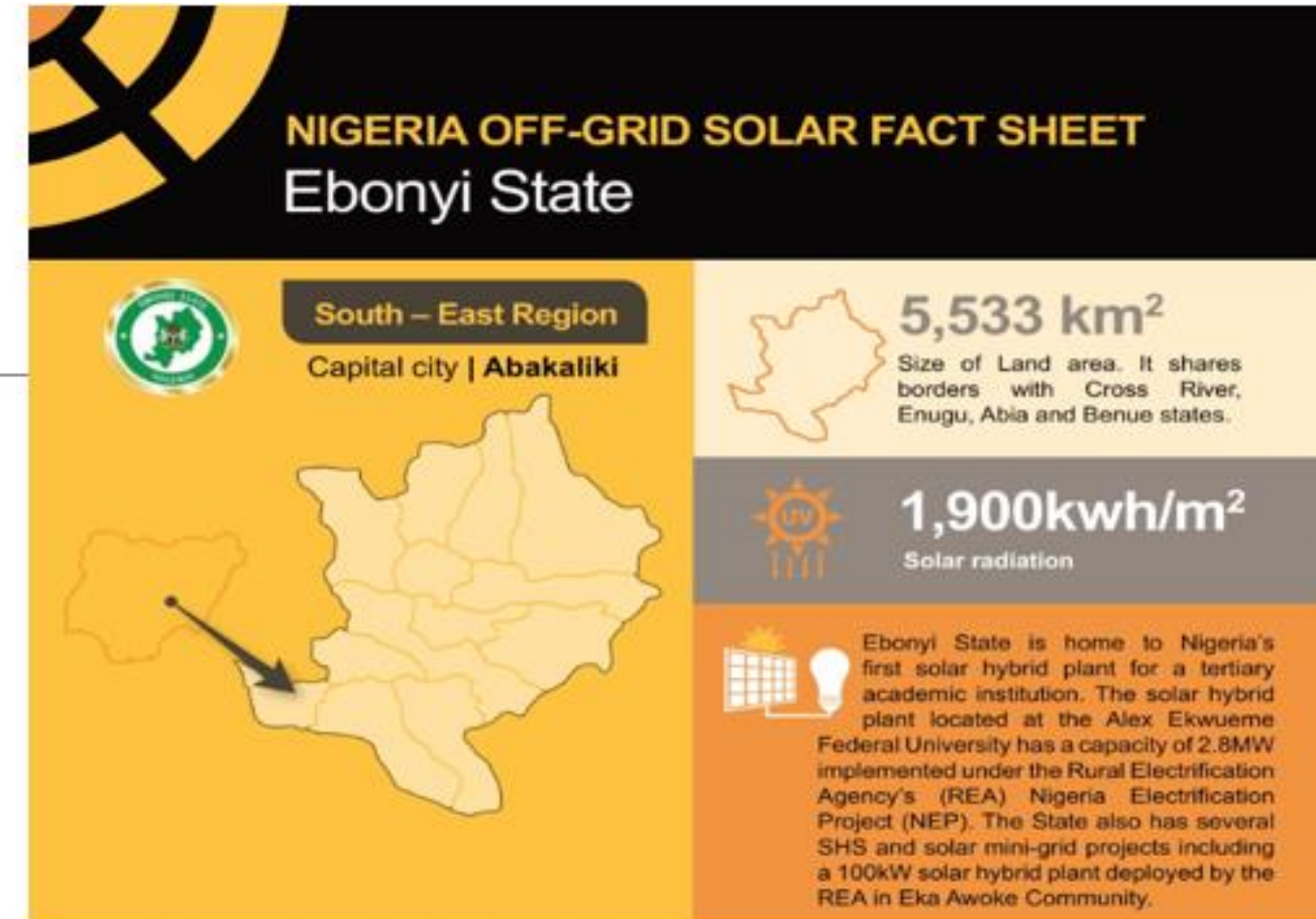
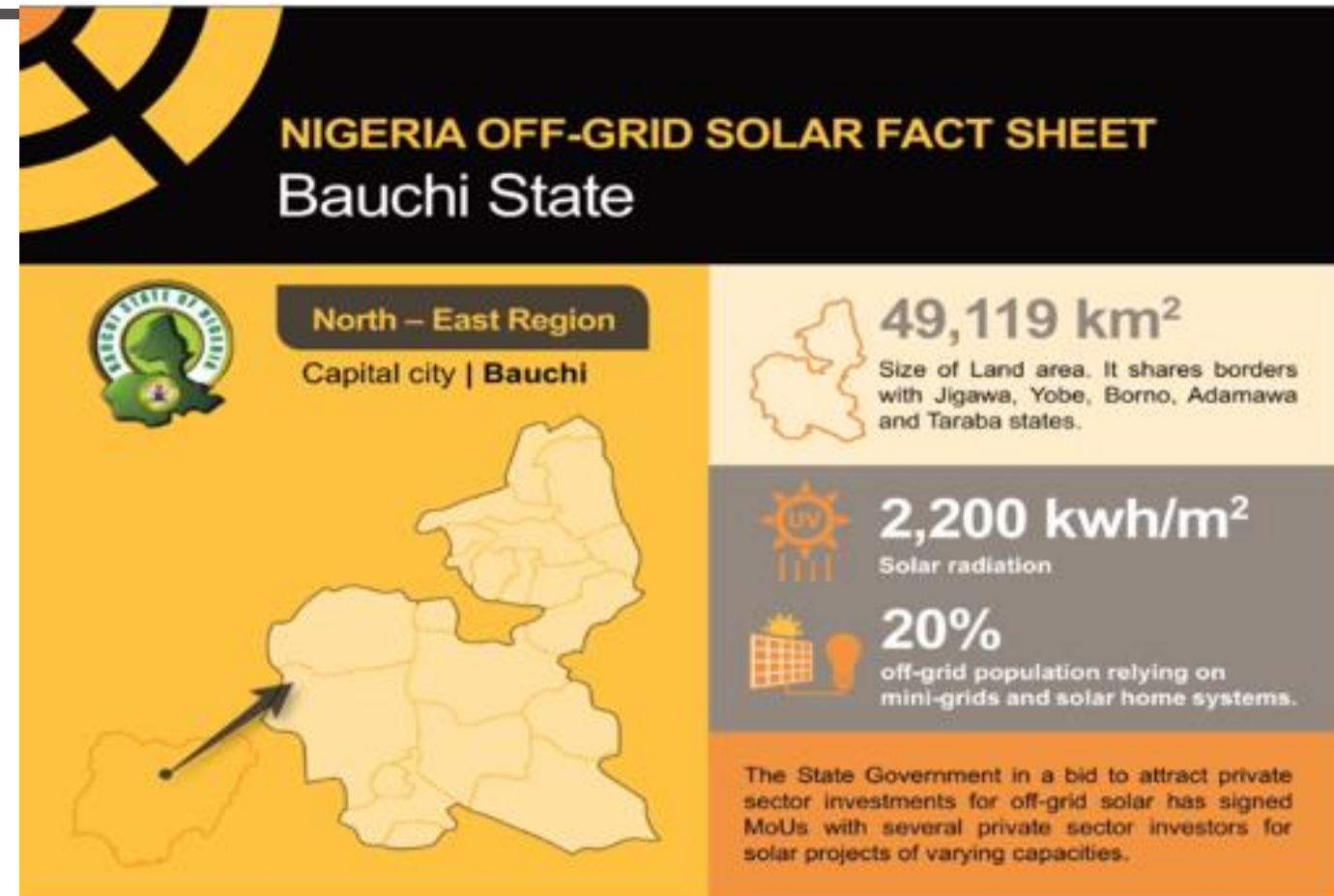
# ZENO SWAP: ZONAL OPPORTUNITIES



- Focal Government Institution(s) for OGS – Ekiti State Electricity Board
- Policy & Regulatory Provisions for OGS<sup>2</sup> – Ekiti State Electricity Board Law 2012
- Ease of Doing Business Ranking<sup>3</sup> - 56.81%

- Focal Government Institution(s) for OGS<sup>2</sup> – State Ministry of Environment and Alternative Energy Fund Limited.
- Policy & Regulatory Provisions for OGS – N/A
- Ease of Doing Business Ranking<sup>3</sup> - 64.36%

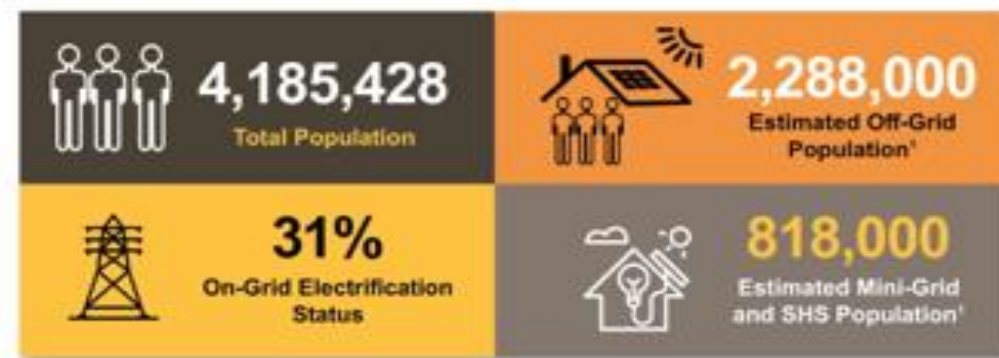
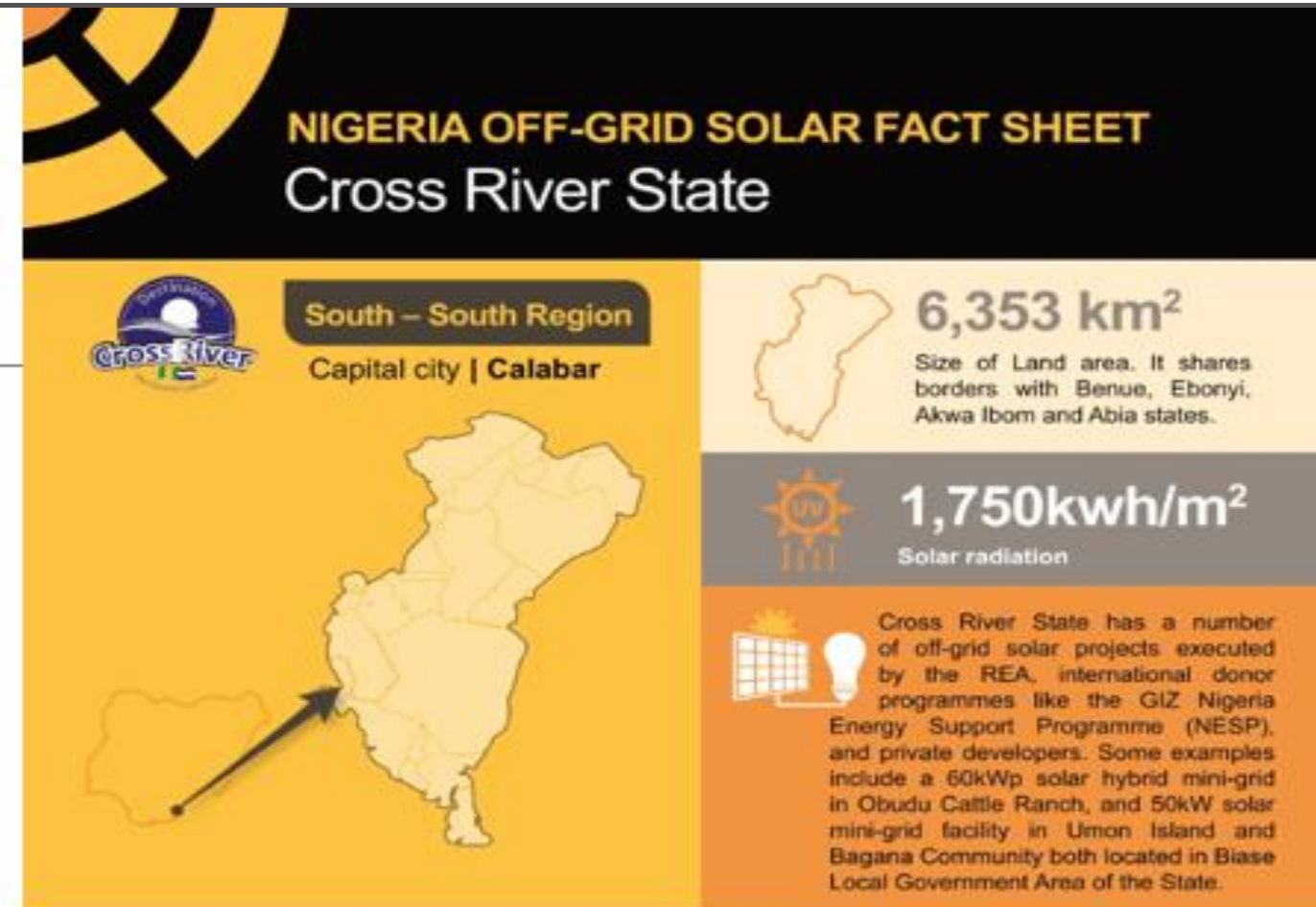
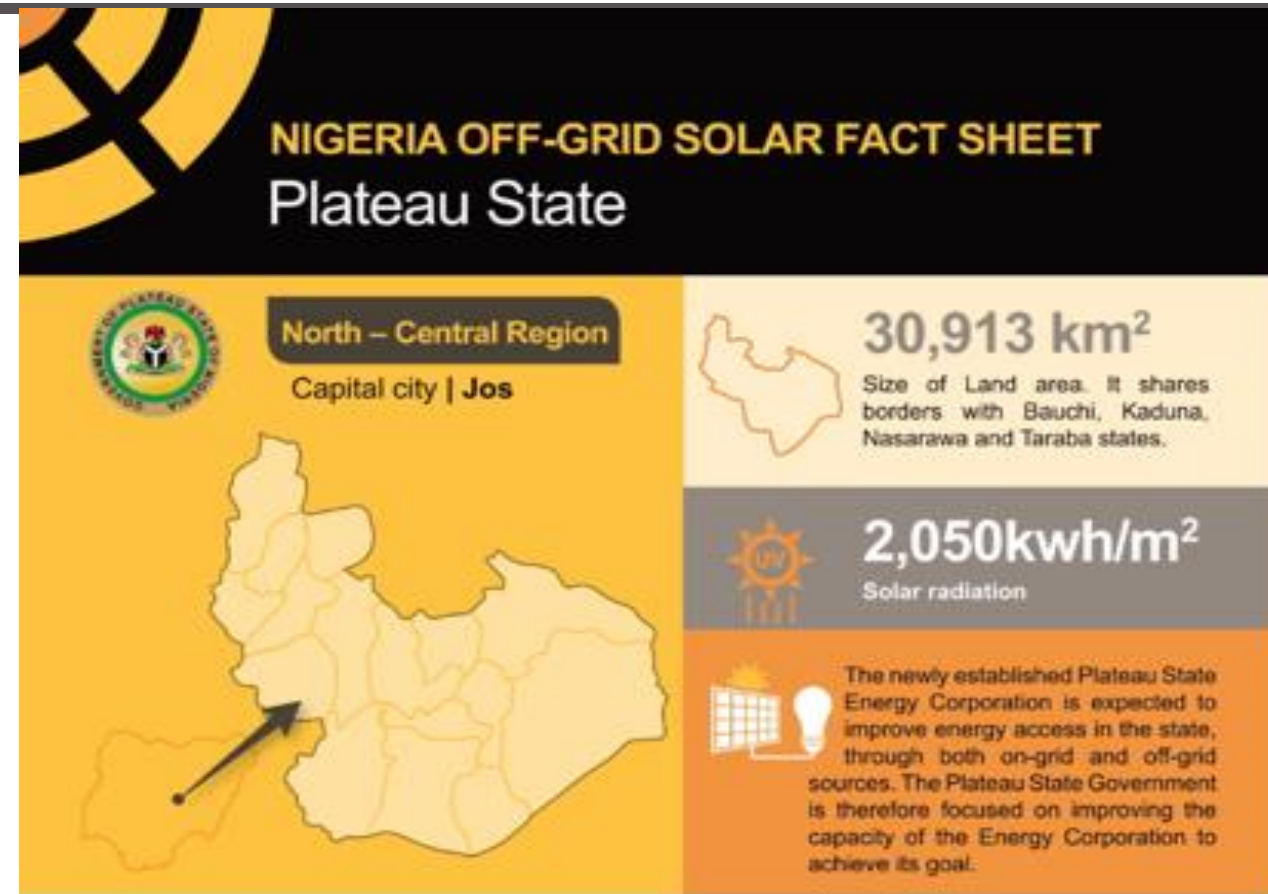
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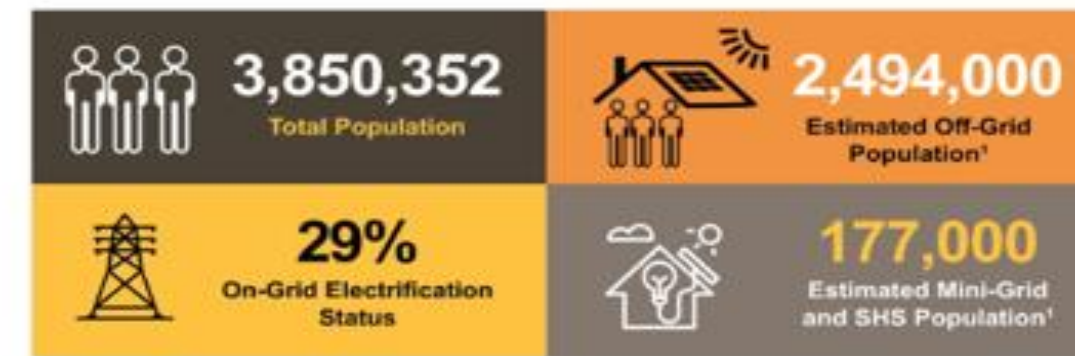
- Focal Government Institution(s) for OGS – State Ministry of Power, Science and Technology; State Rural Electrification Board
- Policy & Regulatory Provisions for OGS – Bauchi State Rural Electricity Board Law<sup>2</sup>
- Ease of Doing Business Ranking<sup>3</sup> - 60.60%

- Focal Government Institution(s) for OGS – State Ministry of Power and Energy
- Policy & Regulatory Provisions for OGS – N/A
- Ease of Doing Business Ranking<sup>3</sup> - 51.16%

# ZENO SWAP: ZONAL OPPORTUNITIES



- Focal Government Institution(s) for OGS – State Energy Corporation; State Ministry of Water Resources and Energy
- Policy & Regulatory Provisions for OGS<sup>2</sup> – Plateau State Energy Corporation Law 2019; Electrification Plan, Policy and Strategy on Renewable Energy
- Ease of Doing Business Ranking<sup>3</sup> - 55.07%



- Focal Government Institution(s) for OGS – State Ministry of Power; State Electrification Agency
- Policy & Regulatory Provisions for OGS – N/A
- Ease of Doing Business Ranking<sup>3</sup> - 49.02%

# ZENO SWAP: REVENUE PROJECTIONS

## SCENARIO CASE OF 7HRS CHARGE

Revenue Projection on Charging station for 20 battery slot for a Day N 3,000	DESCRIPTION	TOTAL
SALES	24 DAYS X 20 BATTERIES/DAY X 3000	₱ 1,440,000
LESS EXPENSES FOR THE MONTH		₱ 100,000
INCOME PER MONTH		₱ 1,340,000
ANNUAL INCOME	4,220,000 X 12	₱ 16,080,000
MONTH TO BREAKEVEN		

Revenue Projection on Charging station for full capacity at 30 battery slot for a Day	DESCRIPTION	TOTAL
SALES	24DAYS X 20 BATTERY X 3000	₱ 1,440,000
EXPENSES	EXPENSES	₱ 100,000
INCOME PER MONTH		₱ 1,340,000
ANNUAL INCOME	1,340, 000 x 12	₱ 16,080,000
Month Break Even	2,000,000/1,340,000	1month

# ZENO SWAP: REVENUE PROJECTIONS

## SCENARIO CASE OF 7HRS CHARGE

Revenue Projection on Charging station for 10 battery slot for a Day	DESCRIPTION	Total
Sales	24days X 10 battery X N2,000	₦ 480,000
LESS EXPENSES FOR THE MONTH		₦ 100,000
INCOME PER MONTH		₦ 380,000
ANNUAL INCOME	380,000 x 12	₦ 4,560,000
MONTH TO BREAKEVEN	2,000,000 / 380,000	5months

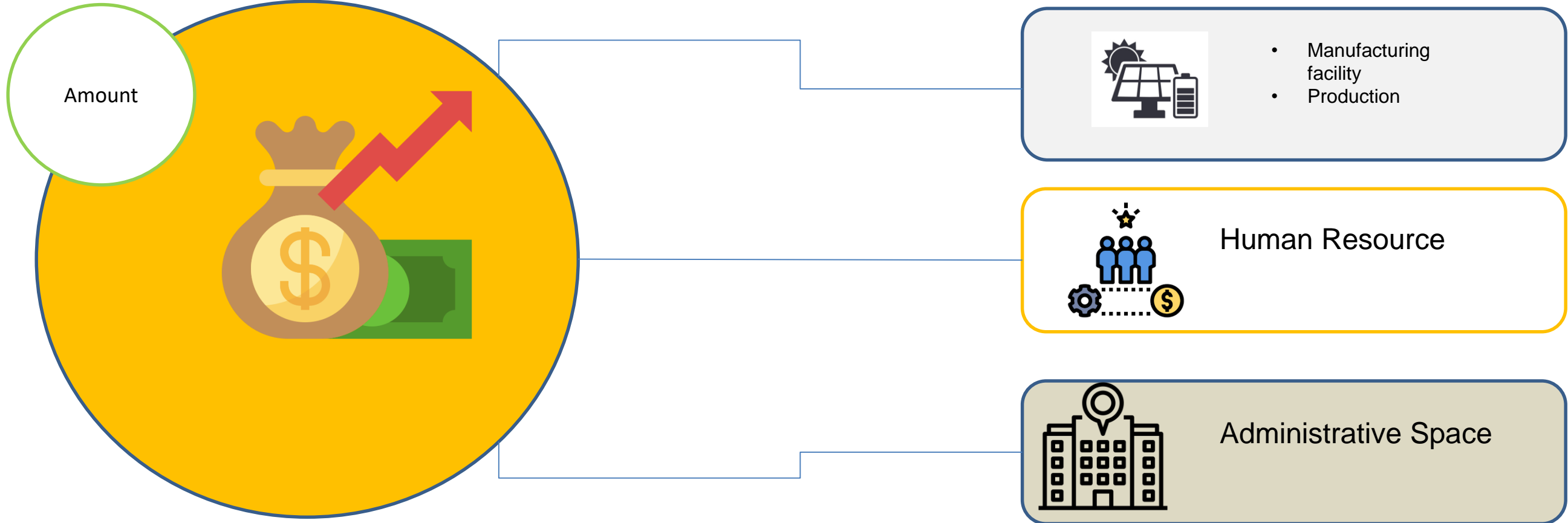
Revenue Projection on Charging station for 20 battery slot for a Day	DESCRIPTION	TOTAL
Sales	24days x 20 x N2,000	₦ 2,880,000
EXPENSES		₦ 100,000
INCOME PER MONTH		₦ 2,780,000
ANNUAL INCOME	2,780,000 x 12	₦ 33,360,000
Breakeven month		1 month

Revenue Projection on Charging station for full capacity at 10 battery slot for a Day	DESCRIPTION	TOTAL
Sales	24 DAYS X 10 BATTERIES/DAY X 2,000	₦ 480,000
LESS EXPENSES FOR THE MONTH		₦ 100,000
INCOME PER MONTH		₦ 380,000
ANNUAL INCOME	380,000 X 12	₦ 4,560,000
MONTH TO BREAKEVEN	2,000,000 x 1,340,000	2month

Revenue Projection on Charging station for 10 battery slot for a Day N 3,000	DESCRIPTION	TOTAL
SALES	24 DAYS X 10 BATTERIES XN 3,000	₦ 720,000
LESS EXPENSES FOR THE MONTH		₦ 100,000
INCOME PER MONTH		₦ 620,000
ANNUAL INCOME	620,000 X 12	₦ 7,440,000
MONTH TO BREAKEVEN	2,000,000 / 620,000	3MONTH

# ZENO SWAP: OUR ASK

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# ZENO SWAP:

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