

# Article 6 Virtual Pilot

## Promoting electrification in Nigeria

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# The “Virtual Pilots”

- Studies commissioned by the **Swedish Energy Agency** to a number of consultants
- Objective: assess how Article 6 could be operationalized, using real host country context
- Technical, financial and legal aspects of a **hypothetical Article 6 approach** in Nigeria
- **No commitment** by Sweden nor the host country to engage in an Article 6 transaction

# In this presentation

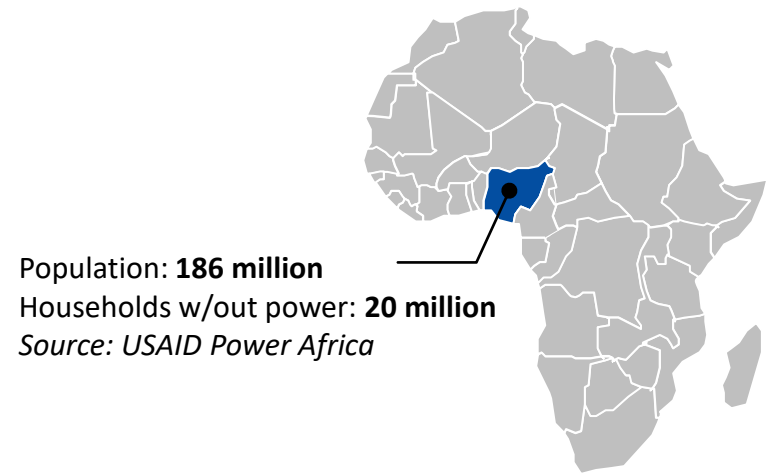
- Design and objective of the Virtual Pilot
- Country context
- Financial and technical design
- Legal considerations
- Lessons learned

# Article 6 Virtual Pilot | Promoting electrification in Nigeria

- Combine Article 6 and sovereign green bonds to promote renewable energy mini-grids at scale in Nigeria
- Design of the Virtual Pilot aims to:
  - Facilitate tapping into capital markets
  - Reduce cost of capital to (over-)achieve NDC
  - Find a balance between host-country interests and attracting interest from investors
- Build on existing domestic targets and capacities, using the international infrastructure

# Context | Mini-grids in Nigeria

Large potential for mini-grids:  
most cost-efficient form of  
electrification for over 26  
million Nigerians (GIZ, 2015)



- **NDC:** increasing capacity decentralized renewable energy priority measure in energy component
- **Sectoral Action Plan:** 8 GW off-grid generation by 2030
- **Nigeria Mini-grid Regulation (2017)**
- **World Bank Nigerian Electrification Project**

# Financial design | **Sovereign green bond**

## **Nigeria has issued two sovereign green bonds:**

- December 2017: USD 29.7m, proceeds to renewable energy (solar) and afforestation projects
- June 2019: USD 41 million, proceeds to mitigation and adaptation projects. 220% subscription

# Financial design | Sovereign green bond

## Type A bond

Embedded claim to mitigation outcomes

Lower coupon rate (e.g. 10%)

Sovereign buyers, impact investors, buyers speculating on increasing price of mitigation outcomes

## Type B bond

No claim to mitigation outcomes

Higher coupon rate (e.g. 15%)

Traditional investors, and investors looking for climate-friendly investments

10-year maturity

Two pay-out moments (after 5 and 10 years)

Funds set-aside in dedicated account, on-lent as concessional loans



# Financial design | **Balancing interests**

## **Generate appetite from buyers:**

- Enable buyers to lock-in a certain amount of emission reductions
- Ensure quality of emission reductions

## **While at the same time, protect interest of the host country:**

- Ensure ability of the host country to achieve it's NDC targets is not jeopardized



# Financial design | Volume of the bond

## Volume of financing:

- Host country overachieves unconditional mini-grid target by 15% (354 MW)
- CAPEX of USD 3.11 million per MW in 2020, dropping to USD 2.5 million per MW in 2030
- Total financing needs:  $\approx$  US\$ 1 billion over the 10-year period
- Bond issuance and proceeds to cover at most 45% of total CAPEX: US\$ 423 million

# Technical design | Ensuring quality

## **Additionality:**

- Mitigation results beyond unconditional pledge of host country
  - Assumes the NDC target is below BAU
  - No specific sectoral or sub-sectoral target: requires extrapolation
- CDM additionality test

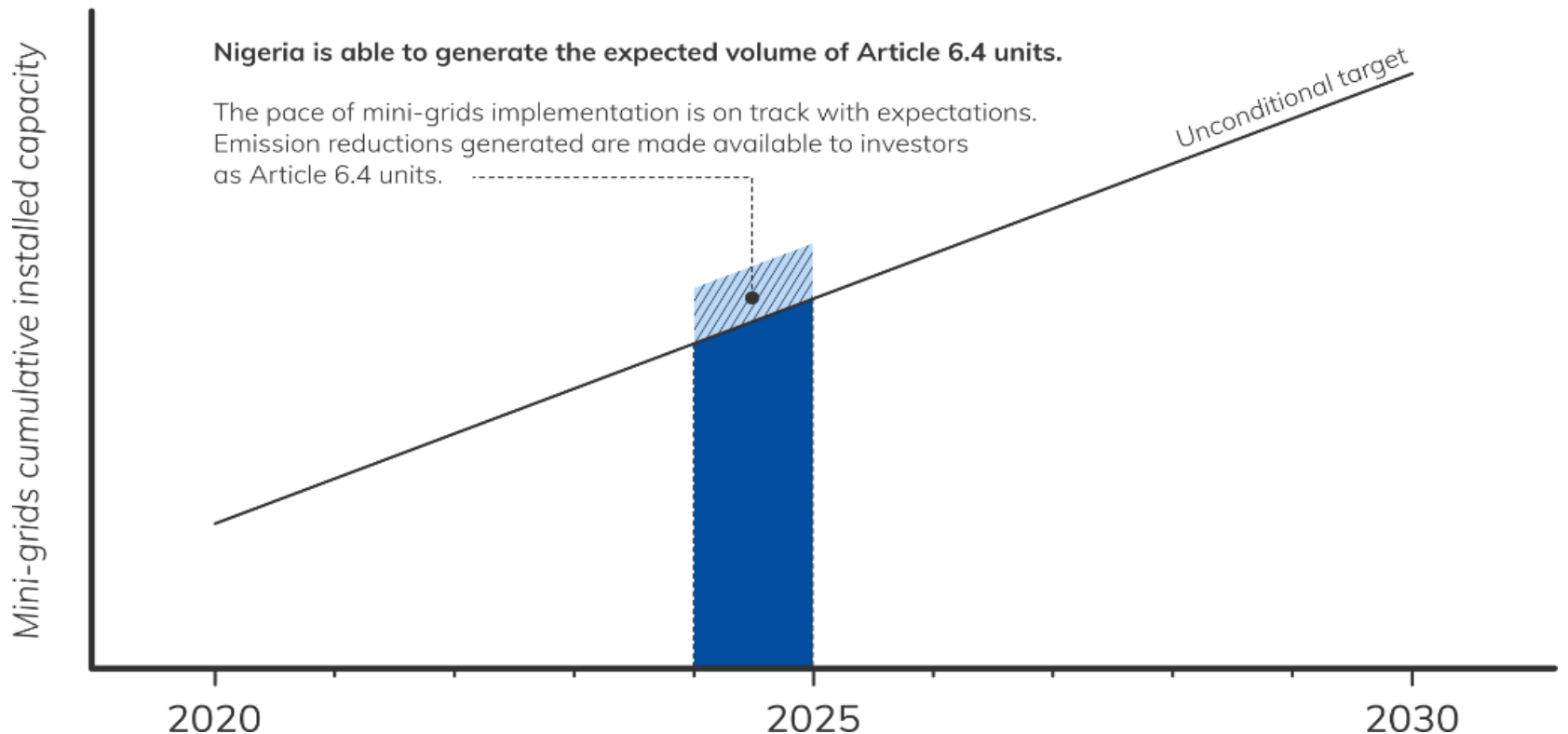
## **MRV:**

- Start with use Article 6.4: internationally recognized standard
- Build capacities to enable moving to Article 6.2



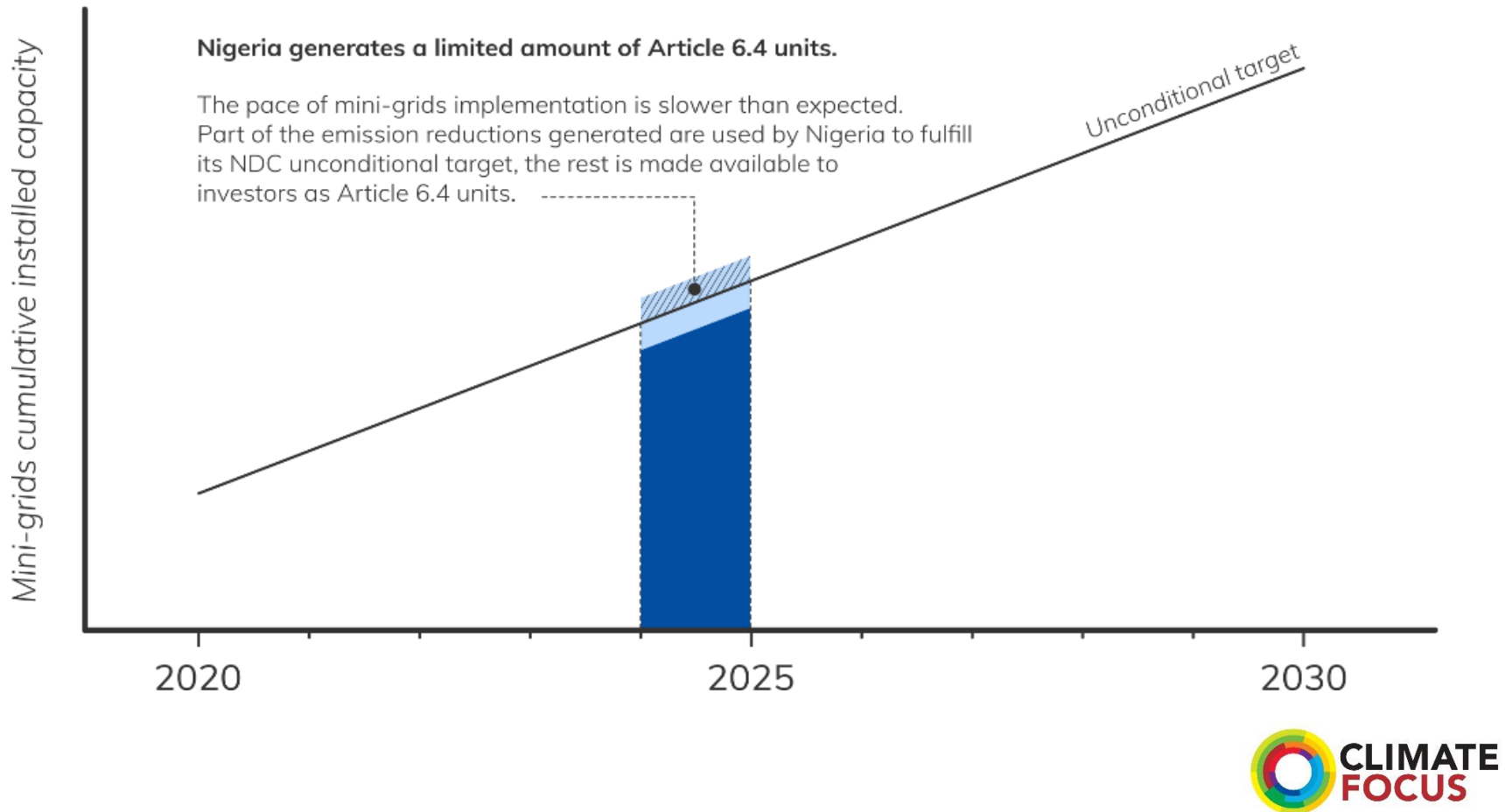
# Technical design | Host country flexibility

## Nigeria meets its mini-grids implementation target



# Technical design | Host country flexibility

## Nigeria partially meets its mini-grids implementation target



# Legal design | Contracting

## Contracting

- Transfer conditions in the terms and conditions of the bond agreement
  - Price
  - Delivery modalities
  - Corresponding adjustment

# Lessons learned

## **ITMO transactions as long-term cooperation**

- Capacities for host countries to understand targets, package of mitigation intervention and costs
- The preliminary step in any transaction entails strengthening the NDC document

**Transactions need to be designed to mitigate the risk of over-selling for the seller, and under-delivery for the buyer**

**The MOPA should cater for all relevant scenarios**



# Thank you!

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