The World Bank Failing Nigeria on Climate Goals and Energy Access

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Executive Summary

The world is faced with an accelerating climate crisis and is already experiencing unprecedented extreme weather events. In Nigeria, 24 percent of the population or about 41 million people live in areas of high climate risks from storm surges, coastal and inland flooding, wildfires and drought.[1] These climate risks further exacerbate the severe fragility and natural resource-based conflicts in Nigeria. Moreover, people living in poverty are the most vulnerable to climate change impacts. The World Bank warns:

> **"Climate Change is an acute threat to global development and efforts to end poverty. Without urgent action, climate change impacts could push an additional 100 million people into poverty by 2030."[2]**

The World Bank Group (WBG)[3] has pledged to assist countries to meet the goals of the United Nations (UN) Paris Climate Agreement (2015), which include limiting global average warming to well below 2°C; and making financial flows consistent with a pathway towards low greenhouse gas (GHG) development. The core of the climate crisis is the energy sector´s burning of fossil fuels, since it is the largest contributor to GHG emissions. A rapid transformation of the energy sector, from fossil fuels to renewable energy, is needed to combat climate change.

At the same time, the energy transformation must address the energy needs of the poor. Nigeria's rate of electrification is only 55 percent,[4] leaving more than 85 million people without electricity (the vast majority live in rural areas)[5]. In 2018, Nigeria had the most people in the world living without electricity.[6].

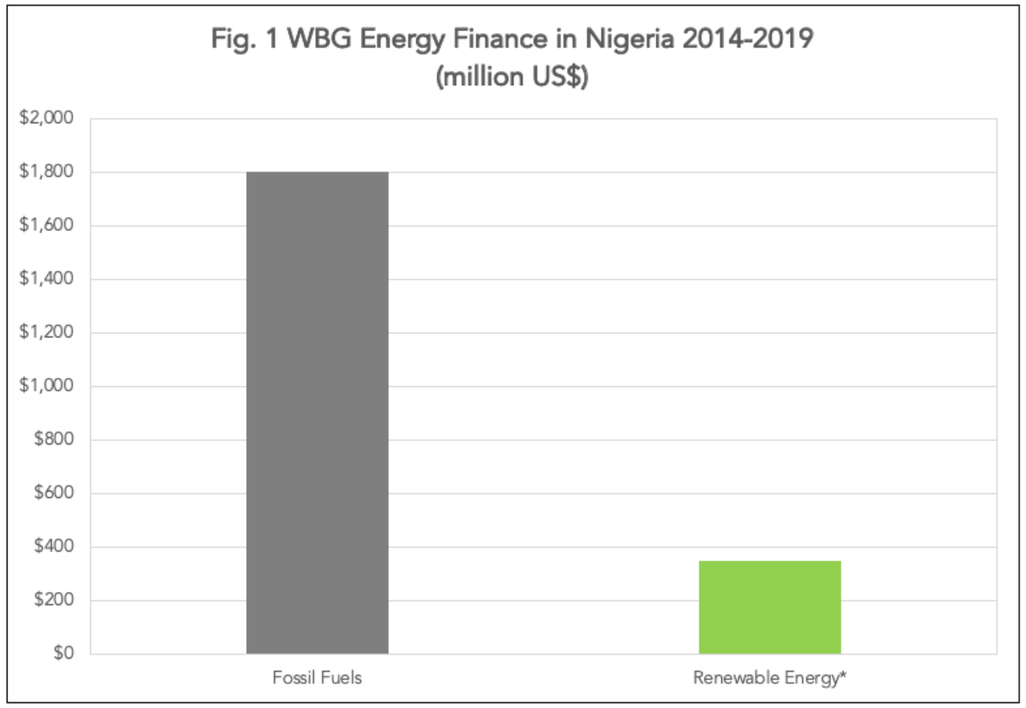
Both the UN and the WBG emphasize that access to energy is essential to reducing poverty. Correspondingly, the UN's Sustainable Development Goal 7 aims for universal access to affordable, reliable and sustainable energy by 2030. Likewise, in 2013 the WBG pledged that its energy practice would be centered on the achievement of the UN's universal energy access goals.[7]

Poverty reduction, energy access and climate goals are inextricably linked and require urgent and bold action. Given Nigeria's significant climate change risks and substantial electricity deficit, the following paper details an assessment of WBG assistance to Nigeria from 2014 to 2019 against achieving climate goals and universal energy access by 2030.[8]

Main Findings

Overall, the WBG's energy sector assistance in Nigeria undermines the Paris Climate Agreement goals and falls considerably short in what is necessary to meet Nigeria's energy access goals. Main findings include:

Oil and gas the overwhelming priority: As shown in Figure 1, the WBG's assistance is overwhelmingly in support of fossil fuels, providing over 5 times more funding to fossil fuels than to renewable energy in Nigeria. From 2014 to 2019, the WBG provided $1.8 billion or 69 percent of total energy sector finance to oil and gas projects, including for multiple oil and gas exploration operations and one of the world's largest oil refineries (another oil refinery is pending approval). Meanwhile, Nigeria's vast potential for renewable energy (e.g., 427 GW solar[9]) remains mostly untapped. Only 13 percent of WBG energy finance in Nigeria supported renewable energy.



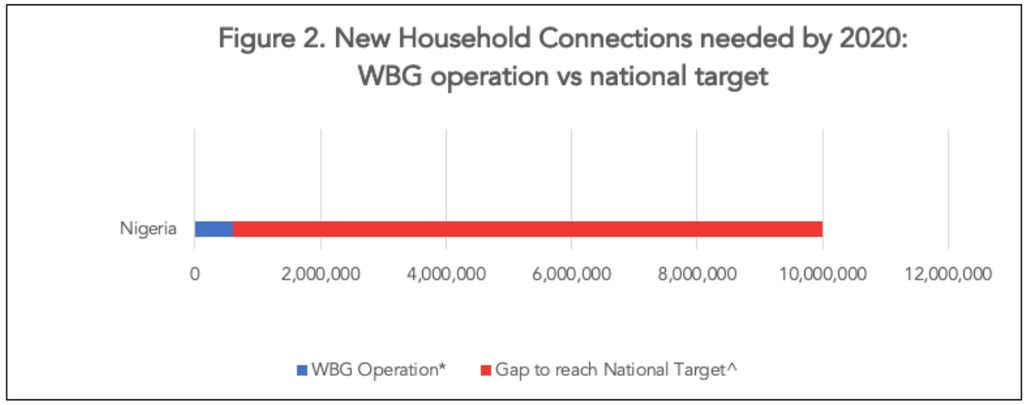
Note: Does not include WBG finance through financial intermediaries.
*Mini- & Off-grid solar solutions

WBG focus on gas expansion – misguided and GHG-intensive: The WBG's Energy Business Plan (EBP) for Nigeria focused on the development of the gas sector, from upstream gas production through downstream power generation. Correspondingly, from 2014-19, the WBG funded over $1.1 billion for gas processing, transport and power generation, including for inefficient open-cycle plants. The production, transport and burning of gas emits significant GHG emissions. In addition to carbon dioxide emissions, the global gas sector is one of the largest industrial sources of methane emissions[10] , a GHG with atmospheric warming 80 times greater than carbon dioxide.[11]

Non-alignment with Paris Climate Agreement, facilitating high-GHG development path: The WBG has clearly prioritized fossil fuel development over renewable energy in Nigeria, including operations involving oil and gas exploration, and the world's largest oil refinery and petrochemical complex. Nigeria is already a top producer and exporter of oil in the world. Using the WBG's public assistance to expand oil and gas reserves and production is clearly counter to "making financial flows consistent with a low-GHG development path" and therefore, the WBG's energy portfolio in Nigeria is not in alignment with the Paris Climate Agreement.

Increased WBG assistance for mini- and off-grid solar a positive step forward: According to the World Bank, the Bank has been "the main interlocutor for the Government [of Nigeria] on power development" since 2000.[12] Yet, in 2017 Nigeria's rural electrification rate remained as low as it was in 1981 (~ 24 percent). This suggests that the WBG had failed to adequately prioritize solutions for rural energy access. In 2018, the WBG took a significant step forward with the Nigeria Electrification Project for $350 million. This WBG Project rightly focuses on increasing rural electrification mainly with mini- and off-grid solar solutions (i.e., stand-alone-home systems and hybrid-mini grids).

Significantly inadequate electrification rate: In order for Nigeria to meet its target rate of 75 percent electrification by 2020, at least 10 million new rural household connections are needed. The expected WBG 2023 outcome is only 600,000 new rural household connections, which is a whopping 9.4 million households short of the goal (see Figure 2). There is no indication that this gap will be closed by a significant degree by the government or any other funder (the government and others are already financing fifty percent of the total project costs involved in the WBG-accounted 600,000 new connections). If the current pace of electrification continues, Nigeria will significantly fall short of universal access by 2030.



*New connections attributed to the WBG operation will be reached by 2023 and are jointly funded by the Nigerian government.
^The national target represents only the number of new rural household connections deemed necessary by 2020 to reach universal access by 2030 as provided in Nigeria's Rural Electrification Strategy (2016).

Inadequate and uncertain funding for energy access: Only 13% of WBG energy sector project finance in Nigeria ($350 million out of $2.7 billion) is targeting new energy connections. Despite the WBG's 2013 pledge, it does not appear the WBG's energy practice in Nigeria is centered on achieving universal access by 2030. Unfortunately, sustained funding for Nigeria's rural electrification program is uncertain, which makes it difficult for the country to plan and sustain progress. At this point, the WBG has not provided any plans to continue funding Nigeria's rural electrification program.

Recommendations

The WBG has committed to assist countries to meet the goals of the Paris Climate Agreement, and to center their energy practice on achieving universal access to energy by 2030. In order to help Nigeria reach these goals, the WBG should**:**

- **End all WBG public assistance for fossil fuels**: No WBG public assistance should be used to develop fossil fuels, which further exacerbate the climate crisis responsible for intensifying droughts, floods and wildfires in Nigeria. This includes assistance for associated facilities; financial intermediaries; policy-based finance (e.g., fossil fuels excluded from all forms of tax breaks and investment incentives); guarantees; general budget support (i.e., fossil fuels must be added to excluded expenditures); technical assistance and advisory services. **The IFC's proposed $35 million for the ND oil refinery should not be approved.**

- **Scale up funding for renewable energy, including mini- and off-grid solutions**: From 2014 to 2019, the WBG supported no utility scale renewable energy projects in Nigeria. This lack of assistance is unacceptable. The WBG needs to provide significant assistance to Nigeria to develop the country's renewable resources. Even the substantial WBG funding for mini- and off-

grid solutions in Nigeria needs to be significantly increased and sustained for Nigeria to reach universal access by 2030.

- **Provide more and sustained funding for new household connections**: Nigeria has the second highest energy access deficit in the world. Given the WBG's finance (2014-19) directed at new household connections represents only 13% of its overall energy sector finance in Nigeria, the WBG can and should direct more finance to connections. To reduce uncertainty in funding for Nigeria's electrification strategy, the WBG should commit to long-term (e.g., 10-year), sustained funding for new household electricity connections. The 10-year WBG funding commitment needs to be reflected in an updated Country Partnership Framework for Nigeria. Correspondingly, the WBG needs to transparently report direct WBG contributions to new household connections within the context of other sources of energy access funding.

- **Perform a gap analysis on universal access by 2030.** Given that the electrification rate is inadequate, the WBG should assist the government to identify where gaps exist and how the gaps will be addressed in order for them to achieve annual electrification targets necessary to reach universal access by 2030.

Introduction

The world is faced with an accelerating climate crisis and is already experiencing unprecedented extreme weather events. According to the US Agency for International Development (USAID), Nigeria has more than 41 million people or 24 percent of its population, living in high climate exposure areas.[13] Its population faces diverse and extensive climate risks from storm surges along the entire coast; inland flooding and wildfires in the Niger Delta region; decreased rainfall in the southeast and Middle Belt; droughts and floods in the north; and flooding across the country along the Niger, Benue, Soko and Komadugu rivers.

The USAID further states that "*the critical connection between extensive climate risks and severe fragility in the country contributes to instability the country now faces from food crises and land conflicts, risking a dangerous feedback loop between fragility and climate risks.*"

The Nigerian government's Nigeria Vision 20:2020 Economic Transformation Blueprint (2009) recognizes climate change as a critical challenge in Nigeria and specifically as a "*potential driver of damaging and irrecoverable effects on infrastructure, food production and water supplies, in addition to precipitating natural resource conflicts.*"

Adding to these concerns, the World Bank reports that the poor are the hardest hit by climate change impacts and that climate change threatens current and future poverty eradication.[14] Most recently, the WBG's website posts the critical warning:

> **"Without urgent action, climate change impacts could push an additional 100 million people into poverty by 2030."[15]**

The World Bank Group (WBG)[16] has pledged to assist countries to meet the goals of the United Nations (UN) Paris Climate Agreement (2015), which include limiting global average warming to well below 2°C; and making financial flows consistent with a pathway towards low greenhouse gas (GHG) development. In December 2015, 195 countries, including Nigeria, adopted the Paris Agreement.

The core of the climate crisis is the energy sector´s burning of fossil fuels, since it is the largest contributor to GHG emissions. Therefore, it is important that the development of Nigeria´s energy sector does not aggravate the climate crisis further.

At the same time, Nigeria is in critical need of increasing access to energy. Nigeria is the highest energy access-deficit country in the world – second only to India for having the most people without access. In 2017, Nigeria's electrification rate stood at only 54.4 percent,[17] which leaves more than 85 million people without access to electricity. Nigeria's urban-rural divide in electricity access is extensive. Nigeria's urban electrification rate is 87 percent, while rural electrification is only 23 percent.[18] From 2010 to 2018, electrification efforts in Nigeria lost ground to population growth, leading to a net increase of 3 million people lacking access to electricity by 2018.[19]

Both the UN and the WBG emphasize that access to energy is essential to reducing poverty. Correspondingly, the UN's Sustainable Development Goal 7 (SDG7) aims for universal access to affordable, reliable and sustainable energy by 2030. Likewise, in 2013 the WBG pledged that its energy practice would be centered on the achievement of the UN's universal energy access goals.[20]

Methodology of Assessment – The assessment reviewed the WBG's energy portfolio for Nigeria from 2014 to 2019, including project finance (excluding financial intermediaries[21]), development policy finance, technical assistance, advisory services, and the country partnership framework. In assessing the WBG Nigeria portfolio, the case study focused on reviewing:

- WBG contributions to sources of power generation (e.g., fossil fuels, renewable energy, grid, and off-grid);
- WBG direct contributions to new electricity connections and the pace of electrification needed to meet universal access by 2030; and
- WBG actions addressing the availability of finance for energy access.

It is important to note that the assessment only covers access to electricity and does not cover access to clean cooking solutions, which is also of great importance regarding energy access for the poor.

The Nigeria case study includes the following sections: Nigeria's Electrification Strategy; Plans for Power Generation; WBG Assistance for Nigeria's Electrification Strategy; WBG's Country Partnership Framework; Proposed WBG Operations; and Conclusions and Recommendations.

Nigeria's Electrification Strategy

As repeated in several policies including: the 2001 National Electric Power Policy, the 2003 National Energy Policy, and the 2005 Rural Electrification Policy, the goal of the Government of Nigeria is to increase access to electricity to 75 percent by 2020 (urban and rural in aggregate) and 90 percent by 2030.[22] More recently in July 2016, these goals were re-affirmed in Nigeria's Rural Electrification Strategy[23] and Nigeria's Sustainable Energy for All Action Agenda.[24]

According to the Rural Electrification Strategy, more than 70 million rural Nigerians lack access to reliable electricity supply. The Strategy stipulates in order to achieve the national target of 75 percent electrification by 2020, urban electrification must reach 95 percent and rural electrification must reach 60 percent. The Strategy estimates this will take more than 10 million new rural household connections (assuming 7 persons per household) at a total capital cost of US$9 billion.[25]

Renewable Energy Targets: In addition, Nigeria's Sustainable Energy for All or SE4All Action Agenda incorporates the country's Vision 30:30:30 Energy Mix Target of 30,000 MWs by 2030 with renewable energy contributing 30 percent.[26] By 2020, the Vision targets the on-grid electricity generation mix to be 20 percent solar. In mega-watt terms, this amounts to 2,700 MW by 2020 and 9,100 MW by 2030 of on-grid renewable energy (solar, small hydro power, wind, or biomass).[27]

Table 1. Nigeria's Energy Sector Targets

	2020	2030
Electrification Rate	75%	90%
New Household Connections	>10 – 14 million	
On-grid Renewable Energy* (as percent of electricity generation mix)	20% solar; ~2,700 MW	30%; ~9,100 MW
Off-grid Renewable Energy		13 GW

Sources: Nigeria's Rural Electrification Strategy (July 2016) and Sustainable Energy for All Action Agenda (July 2016).

*Excludes large hydro power; >50 MW.

Furthermore, by 2030, Nigeria aims to have 13 GW of mini- or off-grid solar solutions to address both its energy access and climate goals. In 2015, it was estimated that Nigeria has between 8 and 14 GW of decentralized diesel generator capacity.[28] The 13 GW solar target is partially related to switching many of the existing diesel generators to solar-based systems (also see this link in the WB's Nigeria Electrification Project below).

Nigeria's Power Generation Plans

As of October 2017, Nigeria's installed power generation capacity was 12,500 MW with 74 percent gas power and 26 percent large hydro power.[29] Nigeria's actual power generation is only about a third of its installed capacity. From 2016 to 2018, less than 4,000 MW were dispatched on average largely due to challenges/gaps in gas supply (including lack of funds to obtain gas and pipeline vandalism), and in electricity transmission and distribution capacities.[30]

Nigeria's vast potential for renewable energy in the country is mostly untapped. The assumed solar power generation potential is around 427 GW.[31] Studies of wind data from 30 stations in Nigeria indicate immense cost-effective wind-generated power opportunities as well.[32]

In June 2019, the Government of Nigeria reported a total of 3,400 MW of commissioned and planned generation capacity that will come on line in the next few years [assumed to have happened or will happen between 2018 to 2023] (see Table 2).[33] These plants are in various stages of development from commissioned to under negotiation. Gas and Gas-Diesel generation equals 1,615 MW, which makes up 47 percent of the planned generation. Solar-powered generation equals 1,125 MW or 33 percent of planned generation and small hydro power makes up 115.5 MW or 3 percent.

Table 2. Nigeria's Near-term Planned Power Generation

Power Station	Energy Type	Installed (MW)
Afam Fast Power	Gas	240
Gurara	Small Hydro	30
Kashimbilla	Small Hydro	40
Dadin Kowa	Small Hydro	29
Kudenda	Gas/Diesel	215
Zungeru	Large Hydro	700
Okpai Phase 2	Gas/Diesel	480
6 small hydro concessions	Small Hydro	16.5
14 Solar IPPs	Solar	1,125
Qua Iboe Power	Gas	540
Aba Power	Gas	140
Total		**3,415.5**

Source: Nigeria Power Sector Policy Directives Timeline, June 2019

Note: Small hydro power equals less than 50 MW.

Based on the reported planned generation, the end result is a total on-grid generation capacity of approximately 15,915 MW by around 2023 comprising of 68 percent gas and gas-diesel[34]; 29 percent large hydro power[35]; 7 percent solar power; and less than 1 percent small hydro power.

Although not mentioned in the planned generation provided in the Power Sector Policy Directives, Nigeria also has plans for coal power development. In March 2018, it was reported that PowerChina had recently signed a Memorandum of Understanding (MoU) with the Kogi State Government for a 2,400 MW coal plant in Kogi.[36]

Locking in a High-GHG Development Path – non-alignment with Paris Agreement: The significant increase in gas power generation and plans for large-scale coal plants is locking Nigeria into a high-GHG path and is not in alignment with the government's 30:30:30 Vision target or the Paris Agreement.

Given current and future climate impacts threatening Nigeria, it is important that the development of Nigeria's energy sector does not further aggravate the climate crisis. The production and burning of more gas and the associated increase in GHG emissions is a significant threat to the climate. The global gas sector is one of the largest industrial sources of methane emissions,[37] a potent greenhouse gas that in the first two decades has an atmospheric warming effect approximately 80 times greater than carbon di-

oxide.[38] Methane leakage is a problem across the entire value chain of gas production and distribution and thus, largely offsets the perceived climate benefits of gas relative to coal.[39] Global methane emissions have substantially spiked in recent years posing catastrophic climate impacts.

World Bank Group Assistance for Nigeria's Electrification Strategy

The following section reviews how WBG assistance is contributing to Nigeria's overall electrification strategy and targets as well as addressing alignment with climate goals. As previously noted, in 2013, the WBG pledged to prioritize its energy portfolio to assist countries to reach universal access by 2030.[40] This study reviews what the WBG has done since 2013.

To begin, Table 3 lists WBG project finance operations in the energy sector in Nigeria from 2014 to 2019. The WBG project documents for each operation were reviewed to determine if the operation had targets specifically designed to increase energy access. The last column in the table specifies if the assistance contributes to new energy connections, which is an indication of direct support for Nigeria's energy access goals.

Table 3. Nigeria: World Bank Group Energy Sector Project Finance (2014 – 2019)

Project	Amount (million US$)	WBG Instrument	Approval Date	End Date	New Energy Connections
Seven Energy oil and gas exploration	$75	IFC equity	13-Mar-14	active	No
Nigeria Power Sector Guarantees gas power plants	$125	IFC guarantee	1-May-14	30-Jan-19	No
Nigeria Power Sector Guarantees gas power plants	$150	MIGA guarantee	1-May-14	30-Jan-19	No
Nigeria Power Sector Guarantees Azura-Edo & Qua Iboe gas power plants	$395[41]	IBRD guarantee	1-May-14	30-Jan-19	No
Azura-Edo Independent Power Plant (IPP) 461 MW open-cycle gas power plant	$155	IFC loan	1-May-14	active	No
Seven Energy Bond oil and gas exploration	$50	IFC loan	26-Sep-14	active	No
Accugas Ltd. (Seven Energy) gas processing facility and pipeline	$200	MIGA guarantee	10-Jun-15	active until 2030	No
Azura Power West Africa Ltd. 461 MW open-cycle gas power plant	$492	MIGA guarantee	22-Dec-15	active until 2030	No
Dangote Industries Limited oil refinery and petrochemical complex	$150	IFC loan	26-May-16	active	No
Indorama Port off-shore oil & petrochemicals	$52.5	IFC loan	22-Jun-16	active	No
NG-Electricity Transmission Project upgrades to existing grid	$486	Investment Project Finance	15-Feb-18	31-Dec-23	No
Nigeria Electrification Project off-grid renewables; solar-diesel mini grids	$350	IDA: Investment Project Finance	27-Jun-18	31-Oct-23	Yes
Total	**$2,681**				

Note: World Bank Group divisions – IFC=International Finance Corporation; IDA=International Development Association; MIGA=Multi-lateral Investment Guarantee Agency

Table 3 shows that out of thirteen WBG energy sector projects in Nigeria since 2014, only one project directly targets increasing energy connections – the Nigeria Electrification Project. In addition, one project, NG-Electricity Transmission Project, does not directly add new electricity connections, but targets upgrades to the existing grid. Given only the Nigeria Electrification Project directly increases energy connections, it is the only project that can be measured directly against Nigeria's electrification targets.

Nigeria Electrification Project – This World Bank project is a $350 million loan covering five years, approved on June 27, 2018 and ending on October 31, 2023. The Bank lists a total project cost of $765 million, thus over half, $415 million, of the electrification costs are being covered either by the government of Nigeria, commercial debt providers or other financial institutions/ donor governments (see African Development Bank funding below). The main objective of the project is "to increase access to electricity services for households, public educational institutions, and underserved small, and medium enterprises (SMEs) mainly through Stand-alone Solar Systems for Homes (SSH) and mini-grids."

Component 1 involves solar-diesel hybrid mini grids aimed at providing electricity to 300,000 households and 30,000 SMEs through an estimated 15 mini-grid operators.[42] Total component 1 costs equal $330 million with World Bank contribution of $150 million. In addition, there are two investment sub-components that are implemented in parallel, a minimum subsidy tender, and a performance-based grant program that target different sets of private developers. According to the Bank, "it is expected that most mini grids will use solar generation with battery storage, and diesel back-up generation…"[43]

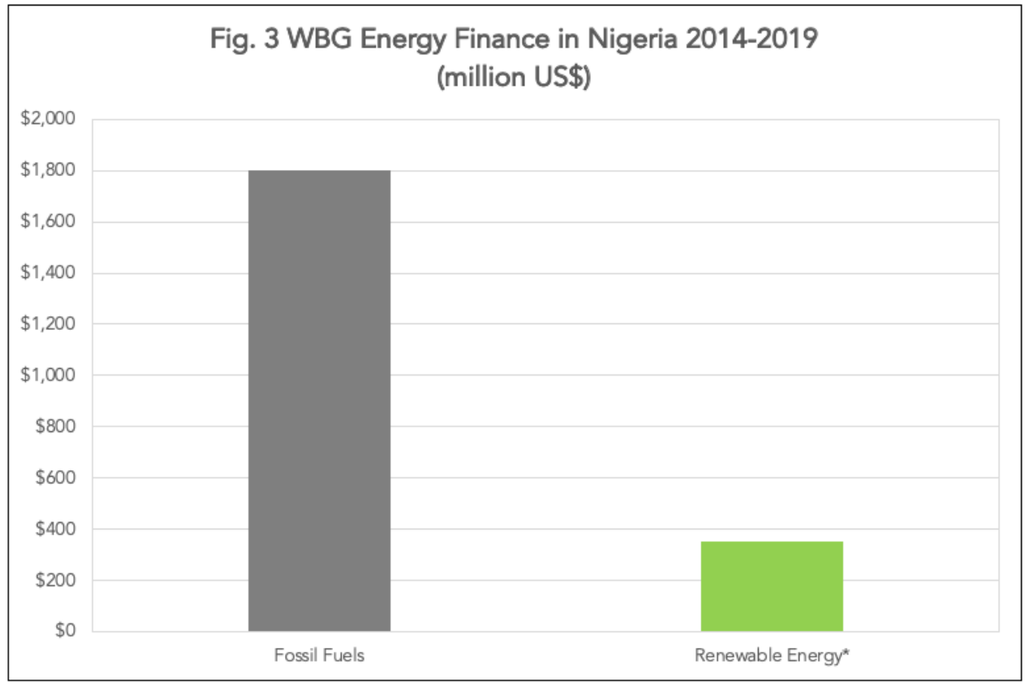
Component 2 involves stand-alone solar systems and targets 300,000 new households and 40,000 SMEs. Component 3 involves energizing education with a target of providing seven federal universities with new or improved energy services through new solar capacity (~19 MW) at a total cost of $105 million with the Bank covering $100 million.[44] Component 4 is technical assistance with the Bank contributing the total cost of $25 million.

Overall, the project expects to provide a total of 600,000 new households with access to energy over five years. However, given the Nigerian government reported the use of between 8 and 14 GW of decentralized diesel generators, it is unclear how many households are switching or augmenting their energy access with the solar options. Thus, it is unclear or difficult to measure an accurate contribution to increasing the overall rural electrification rate. Although this is unclear, the assessment will assume the rural households receiving solar services from the Electrification Project represent new connections.

In addition, the African Development Bank (AfDB) is providing $200 million from the African Grow Together Fund to the Nigerian Electrification Project through the Rural Electrification Agency.[45] It includes solar hybrid mini-grids targeting 105,000 new households, 8 universities, and about 20,000 SMEs. It appears this is part of the same World Bank project, but it is unclear.

WBG Priority given to Fossil Fuels not Renewable Energy: From 2014 to 2019, out of the WBG's $2.7 billion in energy sector project finance in Nigeria, **$1.8 billion or 69 percent went to oil and gas projects** (see Figure 3). The only renewable energy project finance was the $325 million coming from the Nigeria Electrifica-

tion Project (Note: $25 million went to technical assistance not to project finance). **The WBG's assistance is overwhelmingly in support of fossil fuels, providing over 5 times more funding to fossil fuels than to renewable energy in Nigeria.**



Note: Does not include WBG finance through financial intermediaries.
*Mini- & Off-grid solar solutions

The WBG's fossil fuel finance included $125 million (IFC $75 million equity[46] and $50 million loan) to Seven Energy's oil and gas exploration operations and another $200 million MIGA guarantee for Seven Energy's Accugas gas processing and pipeline facilities. In other words, the same amount of project finance, i.e., $325 million, provided for all solar rural electrification in Nigeria, went to one company's upstream oil and gas operations (i.e., exploration, extraction, or production). The upstream nature of this investment makes it an exceptional climate risk as it is widely understood that the world cannot remain under 2 degrees warming if the already existing oil and gas reserves are burned. Recognizing this fact, in 2017 the WBG announced it would no longer finance upstream oil and gas after 2019.[47]

Furthermore, a $150 million IFC loan went to Dangote Industries to build the world's largest oil refinery and petrochemical complex**.** In addition to the direct IFC loan, research conducted by Urgewald shows that IFC provided additional finance through financial intermediaries.[48] The Dangote oil refinery received its first $3.3 billion consignment of loans in September 2013 from a group of 12 lenders.[49] Of these 12 lenders, 9 are recipients of IFC finance as financial intermediaries and the IFC is a shareholder (equity) in at least 5 of them (see Appendix Table 1A).

The fossil fuel project that received the most public assistance from the WBG is the Azura-Edo 461 MW open-cycle gas power plant. The 461 MW plant is phase 1 of a planned 1,500 MW facility. This project received over $895 million in WBG public finance, including an IFC loan of $155 million; MIGA guarantees worth $495 million; and $245 million in IBRD guarantees[50]. Figure 4 below is a WBG-produced diagram of all the ways the WBG is supporting the Azura-Edu gas power plant and it shows at least six different WBG interventions. The WBG helped with the equity financing, the debt financing (with IFC playing the transaction advisor), and the government's Letter of Credit for the power purchasing agreement (see Figure 4 below).

It is very difficult to make sense out of why the World Bank, IFC, and MIGA would all put in so much funding – more than double the finance given for the whole solar rural electrification project – to support one gas power plant when Nigeria already has several gas power plants that are running significantly below installed capacity due to gas supply issues and transmission inadequacies. On top of everything, the WBG's public assistance to Azura-Edo was used to support an in-efficient gas plant, i.e., an open-cycle gas plant instead of a combined-cycle.

WBG assistance not aligned with Paris Climate Agreement: Overall, the WBG's public assistance to develop the oil and gas sector in Nigeria is counter to making financial flows consistent with a low-GHG development path. With regards to the idea that gas is considered by the Bank to be low-GHG. This is not true. In addition to carbon dioxide emissions, the global gas sector is one of the largest industrial sources of methane emissions, , a GHG with atmospheric warming 80 times greater than carbon dioxide.[51] This fact alone largely offsets the perceived climate benefits of gas relative to coal. In addition, Nigeria's energy sector is already dominated by fossil fuels and the WBG's public assistance should not be used to develop Nigeria's energy sector in a way that further aggravates the climate crisis.

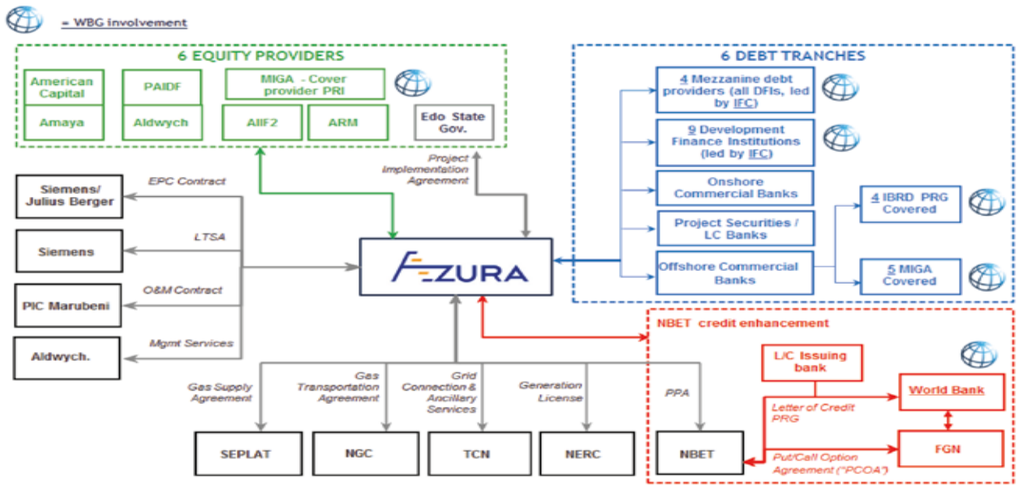


Figure 4. WBG Involvement in the Azura-Edo Gas Power Plant in Nigeria

Source: World Bank, 2015 Africa Energy Yearbook: Nigeria's Electric Power Sector.
Note: NBET = Nigerian Bulk Electricity Trading (a government entity)

How does WBG project finance measure up to Nigeria's energy access targets?

The WBG's 2013 Energy Directions Paper specifically pledges that the WBG will focus its energy sector operations on achieving the UN's goal of universal energy access by 2030. Correspondingly, Table 4 provides a summary of the expected new household connections partially funded by the WBG's Nigeria Electrification Project compared to Nigeria's 2020 electrification target.

Table 4. Reaching Nigeria's Access Targets – World Bank's Nigeria Electrification Project (2018-23)

Component	New Rural Household Connections	Total Cost (million US$)	WB Contribution (million US$)
Solar Hybrid Mini Grids	300,000	$330	$150
Stand-alone Solar Home Systems	300,000	$305	$75
Total	**~600,000**	**$635**	**$225**
Nigeria 2020 Target 75% Electrification	10 million*		
New Household Connections Gap	**9.4 million***		

*To reach universal electrification in Nigeria additional urban electricity connections would also need to be made. The assessment only focuses on the rural target because that is where the greatest need exists and the WBG's project focused on rural electrification.

Even though the World Bank Group has been actively involved in Nigeria's energy sector for decades, Nigeria's rural electrification rate has not improved in 40 years. In 1981, the rural electrification rate stood at 26 percent[52] and in 2017 it was 23 percent. Even though it was long overdue, the World Bank's Nigeria Electrification Project's exclusive focus on rural electrification through off-grid solar is a very welcome development. Unfortunately, the WBG's lone project is wholly inadequate to reach SDG7 and Nigeria's energy access goals.

Significantly inadequate electrification rate: As previously stated, in order for Nigeria to meet its 75 percent electrification rate by 2020, at least 10 million new rural household connections are needed. The expected 2023 outcome of WBG's partial funding of the Nigeria Electrification Project is only a total of 600,000 rural households or over 9.4 million households short of the goal. If the current pace of electrification continues, Nigeria will significantly fall short of universal access by 2030.

During the project preparation stage, the WBG was clearly aware that its project was not enough to address Nigeria's electrification needs. As such, the Bank noted: "*Given the scale of the energy access deficit in Nigeria, this project alone, even including leveraged investments, is too small to fully address the national and sub – national electricity access challenge. Hence, the project aims to build a sustainable framework for continued investments for expanding energy access after the project ends.*"

Instead of relying on an unproven "sustainable framework for continued investments", the WBG should have committed to provide sustained WBG finance to ensure Nigeria continues to make adequate progress on energy access. Unfortunately, sustained funding for Nigeria's rural electrification program is completely uncertain, which makes it difficult for the country to plan and sustain the progress even if there are private sector investors involved.

Inadequate WBG funding for energy access – not aligned with WBG's Energy Directions pledge: Given the WBG pledged to prioritize its energy sector assistance to meet the SDG7 goal of universal energy access by 2030, the amount of funding provided to Nigeria for energy access does not make energy access a priority. As shown above, between 2014 to 2019 the WBG gave $350 million for increasing electricity connections, which is only 13% of the $2.8 billion the Bank gave to Nigeria's energy sector.

While the WBG's Nigeria Electrification Project rightly focuses on increasing rural electrification with off-grid solar, the WBG's overall energy approach in Nigeria makes it very difficult to understand just how serious the WBG is about reaching universal energy access and addressing the climate crisis, including alignment with the Paris Climate Agreement.

World Bank Group Policy Reform and Capacity Building Assistance

In addition to direct project finance covered above, the WBG provides development policy finance (DPF), technical assistance (TA) and advisory services (AS), which involve the drafting and adoption of new laws and regulations, and capacity building of government institutions. Table 5 below lists recent and/or active DPF, TA and AS operations addressing the energy sector in Nigeria. WBG documents for each operation were reviewed to determine if the operation had targets specifically designed to address the challenges to increasing energy access. The last column specifies if the assistance directly addresses Nigeria's electrification strategy, such as support for new energy connections and/or off-grid renewable energy solutions.

Table 5. Nigeria: World Bank Group Policy Reform and Capacity Building Operations

Project	Amount (million US$)	WBG Instrument	Approval Date	End Date	Energy Access Targets
Nigeria Lighting Africa	2.8	IFC Advisory Services	1-Jul-14	30-Jun-17	Yes
Nigeria Kaduna State Economic Transformation Program-for-Results Project (Priority PPP projects)	350	IBRD - DPF	20-Jun-17	31-Mar-21	No
Gas Sector Development, joint IDA-IFC-MIGA Energy Business Plan (EBP)	not available	Technical Assistance	not available	not available	not available

Note: World Bank Group divisions – IFC=International Finance Corporation; IDA=International Development Association. TA = technical assistance; DPF = development policy finance

In 2014, IFC provided $2.8 million for advisory services in support of the **Nigeria Lighting Africa** program aimed at accelerating the development of the market for off-grid lighting products (mainly solar) in order to avoid the current predominant use of kerosene for lighting. The advisory services include such activities as promoting the adoption of Lighting Global quality standards across the sector; working with the private sector to build supply chains to extend distribution to rural areas; and developing financing facilities to meet the off-grid lighting market demand. According to the IFC, outcomes include 2 reports and approximately 770,000 people receiving access to improved lighting.[53]

Nigeria Kaduna State Economic Transformation Program-for-Results Project: This DPF involves assistance for the development of investment policies in support of Public Private Partnerships (PPP) and support for Nigeria's priority PPP projects. The AKK gas pipeline is one of Nigeria's priority PPP projects and is by far the largest PPP project in terms of cost at $2.8 billion. None of the new PPP-related policies require contribution to new energy connections.

WBG-joint Energy Business Plan for Nigeria: The WBG's Energy Business Plan (EBP) for Nigeria is not disclosed on the WBG's website. However, the EBP for Nigeria is referred to in several WBG documents linked to their work in Nigeria.[54] According to the WBG's Nigeria Country Partnership Strategy (FY2014-17), the EBP was developed jointly by IDA/IBRD, IFC and MIGA to help mobilize private investment in new generation capacity totaling 1,500 MW, for the benefit of independent power producers (IPPs) with the main focus on development of the natural gas sector, from upstream gas development through generation and transmission. The Bank considers these activities as contributing to addressing energy access (i.e., grid-connected gas) – though not rural access.

Overall, WBG policy-based assistance and advisory services are largely centered on gas development with no direct measures aimed at increasing energy access. Only a very modest amount of advisory assistance is provided for solar lighting solutions.

WBG Country Partnership Framework

The Country Partnership Framework (CPF) lays out the WBG's current and planned program of engagement in a member country. The CPF places individual WBG activities into an overall strategic context for a country and lays out the country-specific development goals. As such, the CPF is intended to be linked to a country's national development strategies, such as poverty reduction strategies; national electrification strategies; and climate change goals.

Bank staff, in consultation with country authorities, develops a CPF for each country normally every four years. The WBG's website currently posts a CPF for Nigeria that was published in March 2014 and covers the period FY2014 to FY2017 (note: Nigeria's 2014-17 CPF goes by older WBG terminology, i.e., Country Partnership Strategy). There is no information regarding either an extension of the current CPF or the preparation of a new CPF. The following section focuses on determining if the WBG's 2014-17 CPF specifically targeted universal energy access by 2030 and climate goals (note: the CPF was published before the Paris Climate Agreement, but the WBG had already pledged to assist countries to address climate change and limiting global average warming to 2°C).

For the Nigeria Country Partnership Strategy (FY2014 to FY2017), the WBG's support was structured around three strategic priorities:

1. Promoting diversified growth and job creation by **reforming the power sector**, enhancing agricultural productivity and increasing access to finance;
2. Improving the quality and efficiency of social service delivery at the state level to promote social inclusion;
3. Strengthening governance and public sector management with gender equity and conflict sensitivity as essential elements of governance.

The rest of this section focuses on the Results Framework, i.e., the country-specific targets and indicators to monitor WBG performance towards achieving the specified development goals/ objectives. Table 6 below provides the power sector development goal and the indicators of progress towards that goal for Nigeria.

Table 6. Nigeria Country Partnership Strategy: Results Framework FY2014-FY2017

Engagement Area: Power Sector Reform		
Country Development Goal: Increase the power generation and transmission capacity; and improve the efficiency of electricity delivery and access to modern lighting for the base-of-the-pyramid.		
Development Challenges addressed by CPS	CPS Outcomes and Indicators	WBG Program
Nigeria's electricity consumers, including the poor, are provided with unreliable service due to poor quality of supply, high losses and a lack of generation capacity to service demand.	1.**Increased power generation and transmission capacity**. **Outcome Indicators**: 16 percent increase in generation capacity supported by the WBG interventions by 2017 (Baseline: 6000MW in 2012) 8 percent increase in transmission capacity (Baseline: 8588 MVA on 330kV level in 2013)	**Ongoing Finance**: Nigeria Electricity and Gas Improvement Project (NEGIP) IDA, and NEGIP Guarantees **New Finance**: Power Sector Guarantees, Transmission and Access Project; Gas Sector Development Project, joint IDA-IFC-MIGA Energy Business Plan (EBP)
The transmission system remains a key bottleneck to a successful sector reform. The existing wheeling capacity is estimated at 4,800 MW while demand is over 10,000 MW. The Government's investments in new power plants are therefore in risk of becoming stranded. The Nigerian distribution network is heavily dilapidated with high losses, poor voltage profile and inaccurate metering and billing functions. The poorest rely on kerosene lamps for light at high cost and poor quality while exposing themselves to safety hazards such as fires and explosions.	2. Improved the efficiency of electricity delivery Outcome Indicator: Aggregate Technical and Commercial losses (AT&C) of privatized distribution companies (DISCOs) supported by the WBG-EBP reduced by 8 percentage points from 25% in 2013 to 17% in 2017. 3. Improved access to modern lighting for the base-of-the – pyramid through supporting the value chain of procuring and distributing solar products such as lanterns and cook-stoves Outcome Indicators: 1 million solar lanterns distributed; 5 million people with improved energy services (assumes industry estimate of 5 people per household) 100,000 tCO2 GHG avoided	IFC investments (project development funding, equity, mezzanine and debt) in IPPs, gas infrastructure, and select privatized generation and distribution companies IDA-IFC Advisory Services program: Lighting Africa AS Program

Source: World Bank Group Country Partnership Strategy for the Federal Republic of Nigeria for the period FY2014 to FY2017. March 13, 2014.

According to the Nigeria CPF, the Bank has been "the main interlocutor for the Government [of Nigeria] on power development for the past 15 years;" i.e., since 2000. The CPF also provides that Nigeria's Electric Power Reform Act passed back in 2005 included a mandate that within one year of passage a Rural Electrification Strategy and Agency were to be set up to drive rural electrification with the bias to use solar and mini-grids.

Even though rural electrification based on off-grid solar was clearly a priority for the government of Nigeria since 2005 and the WBG had pledged in 2013 to center its energy sector assistance around reaching universal energy access by 2030, the WBG's CPF for FY14-FY17only planned to provide very minor assistance to rural lighting, i.e., just the $2.8 million advisory services for Lighting Africa. A great majority of the Bank's assistance was directed to gas development from upstream to downstream. **As it turns out, Nigeria did not begin to institute its rural Strategy until 2017, and hence, the country is far behind on progress necessary to meet universal access by 2030.**

In conclusion:

- The CPF prioritized gas development along the entire supply-chain and grid-connected power generation over off-grid renewable solutions for rural energy access.
- The CPF did not consider the climate change impacts of continuing public assistance for significant expansion of Nigeria's gas development. Future CPFs should prove all planned assistance is in alignment with the goals of the Paris Climate Agreement.
- The CPF did not prioritize rural energy access and was not in alignment with the priorities of the Nigerian government or the SDG7 goal to reach universal access by 2030.

WBG Proposed Operations

According to the International Finance Corporation´s (IFC) website (as of March 24, 2020), t**he IFC has a pending oil refinery project, ND Refineries Ltd. (NDRE)** (project number 40755). This project involves expanding the oil refinery's capacity from existing 1,000 barrels of oil per day (bopd) to 11,000 bopd at NDRE's existing facilities in Port Harcourt, Nigeria. The project

sponsor is Niger Delta Exploration & Production PLC (NDEP), which has integrated assets in both the upstream and downstream oil and gas sector. The total project cost is listed at US$ 140 million, with the IFC planning to provide US$35 million and mobilizing an additional US$15 million.

It is unclear when the project will go up for approval by the WBG's Board of Executive Directors. The original planned Board date for this project was February 28, 2020. However, the project was not listed on the Board's schedule for February or March 2020. If the IFC approves this project, it will facilitate the ND Refinery to process 10 times more barrels of oil a day.

- **The IFC's proposed finance of the ND oil refinery represents public assistance for the expansion of oil production and thereby is not in alignment with the Paris Agreement or the WBG's pledge to stop financing upstream oil development; and should not go forward.**

Update: IFC Board approves finance for ND oil refinery in Nigeria

After this report was finalized, on May 15, 2020, the IFC's Board approved a $35 million loan for the capacity expansion of ND Refineries Ltd. It is not disclosed how much additional finance was mobilized under the IFC syndicated loan, but $15 million was listed in the original project summary.

See: https://disclosures.ifc.org/#/projectDetail/SII/40755

In addition, MIGA's website lists two pending solar projects, Pan Africa Solar Limited; and Nigeria Solar Capital Partners. However, these projects were supposed to go to the Board in 2017, so it is unclear whether or not these projects are still being considered.

Conclusions and Recommendations

Overall, the WBG's energy sector assistance in Nigeria undermines the Paris Climate Agreement goals and falls considerably short in what is necessary to meet Nigeria's energy access goals. Main findings include:

Oil and gas the overwhelming priority: The WBG's assistance is overwhelmingly in support of fossil fuels, providing over 5 times more funding to fossil fuels than to renewable energy in Nigeria. From 2014 to 2019, the WBG provided $1.8 billion or 69 percent of total energy sector finance to oil and gas projects, including for multiple oil and gas exploration operations and one of the world's largest oil refineries (another oil refinery is pending approval). Meanwhile, Nigeria's vast potential for renewable energy (e.g., 427 GW solar[55]) remains mostly untapped. Only 13 percent of WBG energy finance in Nigeria supported renewable energy.

WBG focus on gas expansion – misguided and GHG-intensive: The WBG's Energy Business Plan (EBP) for Nigeria focused on the development of the gas sector, from upstream gas production through downstream power generation. Correspondingly, from 2014-19, the WBG funded over $1.1 billion for gas processing, transport and power generation, including for inefficient open-cycle plants. The production, transport and burning of gas emits significant GHG emissions. In addition to carbon dioxide emissions, natural gas is one of the largest sources of global methane emissions, a GHG with atmospheric warming 80 times greater than carbon dioxide.[56]

Non-alignment with Paris Climate Agreement, facilitating high-GHG development path: The WBG has clearly prioritized fossil fuel development over renewable energy in Nigeria, including operations involving oil and gas exploration, and the world's largest oil refinery and petrochemical complex. Nigeria is already a top producer and exporter of oil in the world. Using the WBG's public assistance to expand oil and gas reserves and production is clearly counter to "making financial flows consistent with a low-GHG development path" and therefore, the WBG's energy portfolio in Nigeria is not in alignment with the Paris Climate Agreement.

Increased WBG assistance for mini- and off-grid solar a positive step forward: According to the World Bank, the Bank has been "the main interlocutor for the Government [of Nigeria] on power development" since 2000.[57] Yet, in 2017 Nigeria's rural electrification rate remained as low as it was in 1981 (~ 24 percent). This suggests that the WBG had failed to adequately prioritize solutions for rural energy access. In 2018, the WBG took a significant step forward with the Nigeria Electrification Project for $350 million. This WBG Project rightly focuses on increasing rural electrification mainly with mini- and off-grid solar solutions (i.e., stand-alone-home systems and hybrid-mini grids).

Significantly inadequate electrification rate: In order for Nigeria to meet its target rate of 75 percent electrification by 2020, at least 10 million new rural household connections are needed. The expected WBG 2023 outcome is only 600,000 new rural household connections, which is a whopping 9.4 million households short of the goal. There is no indication that this gap will be closed by a significant degree by the government or any other funder (the government and others are already financing fifty percent of the total project costs involved in the WBG-accounted 600,000 new connections). If the current pace of electrification continues, Nigeria will significantly fall short of universal access by 2030.

Inadequate and uncertain funding for energy access: Only 13% of WBG energy sector project finance in Nigeria ($350 million out of $2.7 billion) is targeting new energy connections. Despite the WBG's 2013 pledge, it does not appear the WBG's energy practice in Nigeria is centered on achieving universal access by 2030. Unfortunately, sustained funding for Nigeria's rural electrification program is uncertain, which makes it difficult for the country to plan and sustain progress. At this point, the WBG has not provided any plans to continue funding Nigeria's rural electrification program.

Recommendations

The WBG has committed to assist countries to meet the goals of the Paris Climate Agreement, and to center their energy practice on achieving universal access to energy by 2030. In order to help Nigeria reach these goals, the WBG should**:**

- **Scale up funding for renewable energy, including mini- and off-grid solutions**: From 2014 to 2019, the WBG supported no utility scale renewable energy projects in Nigeria. This lack of assistance is unacceptable. The WBG needs to provide significant assistance to Nigeria to develop the country's renewable resources. Even the substantial WBG funding for mini- and off-grid solutions in Nigeria needs to be significantly increased and sustained for Nigeria to reach universal access by 2030.

- **Provide more and sustained funding for new household connections**: Nigeria has the second highest energy access deficit in the world. Given the WBG's finance (2014-19) directed at new household connections represents only 13% of its overall energy sector finance in Nigeria, the WBG can and should direct more finance to connections. To reduce uncertainty in funding for Nigeria's electrification strategy, the WBG should commit to long-term (e.g., 10-year), sustained funding for new household electricity connections. The 10-year WBG funding commitment needs to be reflected in an updated Country Partnership Framework for Nigeria. Correspondingly, the WBG needs to transparently report direct WBG contributions to new household connections within the context of other sources of energy access funding.

- **Perform a gap analysis on universal access by 2030.** Given that the electrification rate is inadequate, the WBG should assist the government to identify where gaps exist and how the gaps will be addressed in order for them to achieve annual electrification targets necessary to reach universal access by 2030.

Appendix

Table 1A. IFC Financial Intermediaries involved in Syndicated Loan for Dangote Oil Refinery in Nigeria

Financial Intermediary	IFC Amount (million US$)	Approval	IFC Description
Guaranty Trust Bank V & VI – GTB (Lead bank for Dangote syndication loan)	$30 equity $170 loan $175 loan	July 2011 July 2011 Dec 2014	IFC has provided GTB finance to support GTB's medium to long term funding requirements. In 2014: US$100 million IFC's own account, US$75 million from IFC's Managed Co-Lending Portfolio Program ("MCPP") and syndicated B/ parallel loan of US$75 million total: $250 million
Zenith Bank	$100 loan	Apr. 2015	IFC has provided finance to Zenith Bank since 2006 to support long-term lending including to infrastructure projects. Zenith Bank also has an IFC pending loan of $45 million.
CAPE I to IV - Capital Alliance Private Equity - African Capital Alliance (ACA)	$40 equity	Jan. 2015	ACA plans to invest the fund in the business services, energy, fast-moving consumer goods, financial services, telecommunications, media and technology sectors. IFC invested in CAPE I in 1999; CAPE II ; CAPE III; & CAPE IV (2015).
FCMB II & III – First City Monument Bank	$75 $87.5 loans	Oct. 2011 May 2014	To fund a pipeline of infrastructure and industrial projects, to introduce energy efficiency lending and to grow SME business. In 2014: $37.5 is from IFC's Managed Co-Lending Portfolio Program (MCPP)
Diamond Bank Plc.	$70 $70 loans	June 2012 May 2014	2012: US$70 million to support its expansion strategy; 2014: US$50 million for Bank's SME portfolio; US$20 million for agribusiness .
ABN MF Bank Loan - Access Bank	$11.3 guarantee $5 $5 loans	Oct. 2012 Nov. 2013 Feb. 2014	This is described as a micro finance bank for small and medium enterprises (SME). Shareholders: AccessHolding (60.1%); IFC (15%); AfDB (12.35%) and KfW (12.5%).
Ecobank RSF (Risk Sharing Facility) - Ecobank Transnational Incorporated (ETI)	$55 guarantee	May 2015	Support to SME banking ETI serves corporate, SME and retail clients and operates through its subsidiaries across the Sub Saharan Africa region, with 41% of group assets in Nigeria. IFC Asset Management Co. 14.1% shareholder.
Firstrand SL; Firstrand Bank Ltd. (South Africa)	$200 loan	Dec 2017	An existing IFC client, up to US$50 million will be allocated for on-lending to women-owned SMEs
Firstrand SL; Firstrand Bank Ltd. (South Africa)	$200 loan	Jun 2017	Aimed at SMEs
Accion Nigeria (ACCION MICROFINANCE BANK LTD)	$2.1 $3.3 loans	Mar. 2015 Oct 2017	The shareholders of Accion Microfinance Bank include Accion Investment Fund (35.77%) , **Ecobank Nigeria** (21.73%); Citibank Nigeria (19.91%); **IFC (12.60%); Zenith Bank Nigeria (7.33%)**

Source: Urgewald, 2018. $10 billion dollars of World Bank financing pushing Africa's fossil fueled development. https://urgewald.org/shop/10-billion-dollar-world-bank-finance-pushing-africas-fossil-fueled-development

Note: Gray shading indicates IFC is a shareholder.

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