February 2022

Nigeria
Green Tagging Banking Review

CLIMATE TRANSITION LIMITED
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Inquiry: Design of a Sustainable Financial System

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FC4S FINANCIAL CENTRES FOR SUSTAINABILITY

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The Inquiry

The Inquiry into the Design of a Sustainable Financial System has been initiated by the United Nations Environment Programme to determine the level of exposure to "green/brown lending" based on already established taxonomy and provide strategic recommendations for the development of financial products and develop a reporting framework for green financing, piloted by commercial banks in Nigeria – in other words, enhance the ability of regulators, forms and stakeholders to develop a sustainable financial system, which meets the needs of a low-carbon, resilient, inclusive green economy.

More information on the Inquiry is at: www.unep.org/inquiry and www.unepinquiry.org or from marcos.mancini@undp.com or stephen.nolan@un.com

Acknowledgements

The UNEP Inquiry into the Design of a Sustainable Financial System's work has been made possible due to the commitment and involvement of a wide range of people. The level of research, analysis and engagement achieved are the result of the contribution of time and skills from the numerous partners who make up the broader global Inquiry community. The team would like to acknowledge their appreciation to the following:

Olumide Lala, Thatyanne Gasparotto, Julia Ambrosano, Justine Leigh-Bell, Emmanuel Etaderhi, Omolola Fashesin, Onyekwere Ikenna Austine, Sunday John Ogunmoye, Chukwudi Onyejekwe, Olajumoke Ayo-Famisa, Adetutu Akanni, Ellis Michael, Babatunde Asaolu, Israel Aduralere, Ayodeji Mayaki, Oladapo Osunkoya, Olusegun Sunmola, Tunde Mabawonku Sylvanus Eneche, Abimbola Agbejule, Uchenna Obazeh, Kennedy C. Uzoegwu, Olamide Oladele, Stephen Nolan, Marcos Mancini, Florencia Baldi, Delfina Monteverdi, Nana Ofori-Okyere, Mark Halle.

FOREWORD

The launch of the Green Tagging Project ("the Project") coincided with the outbreak of the 2019 COVID Pandemic in Nigeria in February 2020. Many feared the worst. It was virtually impossible to fly in the Project's technical consultants, Climate Bonds Initiative (CBI), to carry out the necessary field study, in-person workshops, consultations, and trainings. However, technology prevailed and online replaced in-person sessions whilst desk research substituted field surveys.

The CBI team led by Justine Leigh-Bell and Olumide Lala displayed unprecedented resilience that is reflective of the boundless enthusiasm of their CEO, Sean Kidney in driving the message of green and sustainable finance to the ends of the earth over the years. Nigeria was the beneficiary this time around. And though the Project exceeded its original timeline due to COVID-19 constraints, the report contains essential facts and figures, deep, incisive analysis and valuable recommendations that could potentially transform the Nigerian financial markets and align the banking sector with ongoing global efforts to build back cleaner, greener, and better from the worst pandemic in decades.

Olumide Lala and his CBI colleagues have done a great job in sieving through the avalanche of information/data provided by the participating banks to identify the extent to which finance is being extended to projects that facilitate the emergence of a climate-resilient economy in Nigeria. The reader will find that the report details the available green/sustainable economic opportunities which are extensive and vast; and the barriers/challenges which are surmountable and resolvable provided all involved (regulators, capital market players, the banking sector, etc.) collaborate to support the growth of the nascent green economy in Nigeria with a determination to making the country's development more sustainable and inclusive and less dependent on fading hydrocarbon resources.

At FC4S Lagos, our determination is to work with relevant stakeholders on how to utilise the findings and recommendations to support the harmonised reporting of banks' green financial footprints in a coordinated manner, whilst assisting new green/sustainable projects to access

finance from international development finance partners as well as sustainability-focused institutions in the Nigerian banking and capital markets.

Emmanuel Etaderhi,

Executive Secretary,

Financial Centre for Sustainability, Lagos

July 2021

CONTEXT

Climate Change is arguably the most defining issue of our time since it will prove to be a source of significant structural change. Its impacts will be more far-reaching than many other structural drivers, and frequently irreversible. Building social, economic and environmental resilience against climate change is therefore imperative for Africa countries, if they are to realise their developmental objectives going forward. The financial sector has an important role to play in this regard by directing financial flows to areas that can facilitate the transition to greater sustainability for the African continent. This makes business sense for the financial sector, given the various risks that climate change pose to the value investment and its sustainability.

The impact of Climate Change is reflected in Nigeria's economy and environment. This is evident in records of violent competition for the country's natural resources (access to arable land by herdsmen and farmers, flooding, and high temperatures, amongst other factors). The United Nations Development Programme (UNDP) in 2018 identified Nigeria as one of the countries, most vulnerable to Climate Change conditions due to key sectors of the economy such as agriculture and hydropower that are likely to be negatively impacted as rising temperatures and irregular rainfalls disrupt crop and livestock production, as well as reduce the predictability of water flow volumes for power generation. Increased flooding from excessive rainfall on the other hand, leads to displacement of households and outbreak of waterborne diseases. In the last 40 years, much of Nigeria's growth has occurred along the coast, which is now home to about 25% of its population resulting in mass urbanisation in coastal cities such as Lagos. The city itself is recognised as one of the eleven sinking cities globally that could soon be underwater[1] thus highlighting its vulnerability to rising sea levels, flooding and soil erosion.

Nigeria, Africa's largest economy with a GDP of just over $448 billion in 2019 (closer to $500 billion if the informal sector is included), is a mixed economy with expanding manufacturing, finance and banking, service, communications, technology and entertainment sectors. Unfortunately, these assets have not translated into inclusive growth for the country due to several factors, including a lack of infrastructure and inadequate power supply. Whilst small-scale manufacturing makes up 10% of the GDP and agriculture accounts for 25% employing nearly 60% of the labour force, Nigeria is still best described as a mono-product economy as crude oil remains the main source of foreign exchange receipts, though oil contributes only 9% to the GDP. With 75-80% of government revenue depending on oil and gas exports, the country is highly vulnerable to climate policies as the world transitions away from fossil fuels and should consider an orderly transition towards decarbonisation.

Increasing climate change concerns are pushing several governments to encourage improved energy efficiency and switching from internal combustion engines to electric vehicles (EVs) so as to reduce fossil fuel use. For instance, countries such as the UK and France have imposed a ban on fossil fuel car sales from 2040. As these policies are implemented in the coming years and governments and pensions funds shift investments away from fossil fuel-based assets, they will determine Nigeria's competitiveness in an increasingly decarbonised world as foreign exchange becomes scarce, leading to fall in capital infrastructure investment and

[1] https://www.insider.com/sinking-cities-climate-change-2019-5

reduced productivity as the country's ability to meet its hefty import bills (food and essential goods) is threatened.

As policymakers to prioritise short-term economic stability over the long-term well-being of the people and sustainable economic growth, widening infrastructure deficits dramatically expose Nigeria's high vulnerability to climatic and subsequent economic shocks. Furthermore, the COVID-19 pandemic has driven a sudden fall in oil prices of almost 70% ($62.00 in January 2020 to $19.14 per barrel for the Brent crude as of April 22, 2020), due to the global lockdown, once again highlighting the need to diversify Nigeria's economy as well as the country's dependence on crude exports as a source of foreign exchange revenue receipts.

Figure 1: Brent Oil PricesNigeria GDP Figures (April 2020 – Jan 2021)

Source: https://tradingeconomics.com/commodity/brent-crude-oil

A 2020 assessment of the country's infrastructure financing gap according to Mrs Zainab Ahmed (Honourable Minister of Finance) disclosed that the Federal Government will require about N36trn (USD 100 billion) annually for the next 30 years to effectively tackle Nigeria's infrastructure challenges.[2] However, these estimates are likely to have been understated, in view of the shortfall in oil revenue in recent times. Accordingly, in the face of the prevailing constraints (weak governance revenue, ballooning recurrent expenditure and elevated debt servicing costs) resulting from a second recession in 6 years, public sector funding will remain woefully insufficient, making it difficult for the government to address the infrastructure deficit on its own. It is therefore clear that mobilising private sector investment remains a critical financing option to bridging the huge infrastructure deficit.

The integral role played by financial institutions as the primary source of funding economic activities in the real sector can neither be overlooked nor over-emphasised. With lending ratios generally below the Central Bank's regulatory requirements, banks have the ability to efficiently and effectively mobilise financial resources to grant loans and finance investment opportunities in Retail, industries, agriculture, etc., and position the sector as a key catalyst for a sustainable, low-carbon and resilient economic growth and development.

The result of the 2018 report ("The Nigerian Sustainable Finance Roadmap"[3] or "The Report"), developed by the United Nations Environmental Programme (UNEP) Inquiry in partnership with FMDQ Securities Exchange, laid down ways in which Nigeria can unlock the investment

[2] https://nairametrics.com/2019/09/24/nigeria-needs-100-billion-annually-to-fix-infrastructural-deficit-finance-minister/
[3] http://unepinquiry.org/wp-content/uploads/2018/11/Nigerian_Sustainable_Finance_Roadmap.pdf

needed to move onto a more sustainable growth trajectory. The report highlighted potential sustainable investment opportunities - clean energy systems, agriculture and sustainable land use, health care and education, low-carbon transportation, ICT and digital infrastructure, etc., that can be privately financed through the banking system and the capital markets. Nevertheless, the Nigerian Sustainable Finance Report notes that availability of domestic private funds for sustainable projects have remained very low despite vast infrastructure investment opportunities. Findings from the Nigerian Sustainable Finance Roadmap identified market barriers to investment flows that include:

- **Lack of enabling conditions**: ineffective and inefficient policies, regulations and non-financial disclosure.
- **Inability to identify market opportunities**: due to sub-optimal internal capacity (knowledge of climate finance, processes & procedures, tools and technology, and new products).
- **Undeveloped domestic green bond market**: for non-sovereign and corporate issuance.
- **Limited use of digital innovation** to unlock sustainable finance and broad awareness raising.

For Nigeria to capitalise on these opportunities by 2030, flows of sustainable finance will need to increase 20 folds by removing the barriers inherent in the current system. The severity of the combined impact (physical and transition) risks of climate change needs to be mitigated through early and orderly transition and a significant amount of analytical work would still need to be done in order to identify, qualify and mitigate climate-related risks exposure.

Financial institutions will need to rapidly incorporate into their lending and investment policies, strategies to combat the adverse effects of climate change. For instance, by developing financial products that increases the percentage exposure of their portfolios to sustainable and low-carbon assets, following available taxonomies; leveraging best practices for incorporating environmental metrics into portfolio management; and designing and implementing effective guidelines and scenario-based risk analysis for portfolio reviews.

In advancing the research into climate-related risks faced by Nigeria's financial sector, the UNEP Inquiry with the support the Financial Centre for Sustainability (FC4S), Lagos to seeks develop a robust monitoring and disclosure framework for financial institutions to accurately and transparently report their financial footprint (loans exposure to green/brown) to the Central Bank and other financial regulators, with the view of aggregating the positions and exposing the opportunities to private and institutional investors through green bonds issuance in the capital market.

The UNEP Inquiry partnered with the Climate Bonds Initiative to:

i) conduct an assessment of loan portfolios from three banks,
ii) explore the levels of the individual banks' loan portfolio to "brown/green" exposure based on established taxonomy,
iii) develop tagging systems, and
iv) suggest product development based on the analysis.

This report is the output of a detailed research by CBI and provides the UNEP Inquiry, the Financial Centre for Sustainability (FC4S), Lagos and other key stakeholders in the Nigerian sustainable financial markets with robust strategic recommendations for developing financial products and inputs that will feed into the development of a reporting framework for financial institutions to communicate their green financing footprint in a harmonised manner, using a transparent monitoring and reporting mechanism/tool to inform regulators.

INTRODUCTION

Technological advances in low-carbon, climate resilient technologies, land use and transportation present Nigeria with a unique opportunity for leapfrogging to avoid future lock into carbon or energy intensive stages of economic development and support a just transition to a more sustainable economy. The banking sector being the primary source of finance for commercial activities, can stimulate sustainable growth and development through transforming the domestic markets. With a portfolio of decarbonised assets, private financing, partnerships and capabilities shall support the shift of billions of much needed local and foreign investments into sustainable infrastructure at scale.

Selection process

Out of the twenty-two (22) commercial banks in Nigeria, a "Request to Respond" was sent to ten (10) of the banks that had participated in previous green bond capacity building sessions organised by the Nigerian Green Bond Market Development Programme (NGBMDP). Three (3) of these banks responded and participated in the launch of the Green Tagging Project ("GTP") in a kick-off ceremony which took place at the end of February 2020.

Methodology

Climate Bonds Initiative designed a data gathering template based on the Climate Bonds Taxonomy and guided the respondents on how to use the template to gather, classify and present the loans data. The banks were then given six weeks to provide CBI with their loan portfolios. As a result of the limited knowledge of green taxonomies within the Nigerian banking sector, CBI had to work closely with the banks to clarify the information on green finance. The fact-finding phase of the project lasted for four months.

National lockdown constraints

The outbreak of the dreaded COVID-19 pandemic coincided with the operationalisation of the GTP and just as the project commenced, the Nigerian government announced a national lockdown, resulting in severe delays to the project. In retrospect, the dislocation to global logistics and distribution channels presented a fortuitous opportunity to test out the potential effects of the impacts of a climate change-related event or risk to financial assets which hitherto would have had to be simulated. The findings from the analysis of non-performing loans (NPLs) data and the effects of the lockdown over a six-month period on loan positions will be discussed later in the report.

Sector analysis

The analysis of the banks' loan portfolio considered opportunity areas that would inform strategic decision making about which sectors to migrate future debt financing and how to prioritise the funding. The prevailing view is that since bank financing is critical to economic activities, their loan books should mirror aspects of the economy with potential for growth as well as provide insight into which areas of the economy funding should be allocated, to finance the migration of infrastructure most vulnerable to climate change.

CHALLENGES & OPPORTUNITIES

Challenges

Nigeria has been plagued by infrastructure challenges for several decades. Poor infrastructure issues in the country ranging from perennial electricity shortages, housing gap, inadequate water supply and poor sanitation, inefficient inter and intra state logistics (road, ports, rail transport networks) infrastructure which should support critical supply chains, continue to hinder the economic development of the country.

Infrastructure development is a key driver for progress and a critical enabler for productivity and sustainable economic growth for the country and whilst the lack of traction for most part has been attributed to government's inability to implement policies that address these deficits, it is clear that with such huge infrastructure gaps that continue to put a wedge on economic growth, policy change in itself will not be enough to meet the challenges of poverty reduction and the attainment of the Sustainable Development Goals (SDGs).

Opportunities

Nigeria's rising population constitutes a massive strain on its failing infrastructure. With some estimating the cost of the housing gap to be at USD75bn; USD60bn required for the oil & gas sector; about USD20bn to revamp the power sector; USD14bn for roads and some USD15bn for the rail sector, it has become obvious that all hands need to be on deck to find a lasting solution if Nigeria is to achieve its economic potentials.

It is becoming evident to key market actors that liquidity from the banking sector is critical to the development of the economy. The COVID-19 pandemic, coupled with many climate-related disruptions, revealed the country's vulnerability to shocks and in turn renewed and intensified the urgent imperative for pools of private funds to reduce their exposure to climate change-related financial risks to more resilient and sustainable investment opportunities as market actors, policy makers, regulators, rethink how to rebuild the economy.

Green finance

Green and sustainable bonds are promising instruments for financing a more sustainable and resilient pathway to economic development and reduce exposure to climate-related financial risks. It is necessary to channel this type of funding into green infrastructure projects across sectors in order to stimulate and boost inclusive, sustainable growth and significantly reduce poverty. Whilst we have seen an explosion in the use of green financing across the world, this innovative concept is still nascent in Nigeria's financial markets.

A green bond as defined by the Green Bond Principle (GBP) is "any type of bond instrument where the proceeds is or will be exclusively used to finance or re-finance, in part or full, new or existing eligible Green Projects and which are aligned with the four core components of the GBP"[4]. Labelling fixed income financial instruments that finance projects with

[4] The Green Bond Principles, first draft in 201 and subsequently updated in 2015, are a voluntary framework for green bonds, issued by the International Capital Market Association (ICMA). The Principles have four components: 1. Use of Proceeds 2. Process for Project Evaluation and Selection 3. Management of Proceeds 4. Reporting

environmental and social benefits as "green" help investors distinguish them from conventional "vanilla" bonds. Green bonds are also a way for investors to signal their ESG intentions and scale-up their expectations with respect to the environmental performance of their fixed income investments.

Primarily, bonds (green and vanilla) are financial instruments used for financing both new and existing projects One would suggest that labelling loans, bonds, etc. that finances existing projects with environmental or sustainable benefits, such as the **Access Bank and North South Power Company** Green Bonds issued in 2018, have made positive impacts on Nigeria's financial markets. This coupled with the numerous capacity building activities of the Nigerian Green Bonds Market Development Programme has led to an increase in the market awareness of the benefits of investing in climate-related projects as private sector appetite for low-carbon investment opportunities has increased dramatically.

A vast amount of effort has gone into stimulating the market in recent years by developing and establishing a robust regulatory framework. However, the nascent market for green bonds in Nigeria is still underdeveloped. According to data from the **National Pension Commission** (PenCom), though pension fund assets increased to NGN10.8tn (USD31.6bn),[5] of which pension fund managers' investments in government fixed-income securities had increased to N8.14tn (USD23.1) as at the end of 2020, none of the new flow into federal government bonds resulted in new green bond issuance by the government. Regrettably, Nigeria had issued less than NGN50bn (USD71m) in green bonds by 2020. The lack of new issuance (sovereign or corporate) since 2018, is a clear indication that new and innovative climate finance strategies need to be explored in order to access the significant resources required to adapt and mitigate climate change risks and meet critical infrastructure development targets across sectors and states of the country.

Liquidity pools

Nigeria's economic growth depends heavily on infrastructure development. With the exception of airports, roads and rail, all other infrastructure development is financed by the private sector. There is an urgent need to change the foundation of the infrastructure platform of the economy and this can only be achieved through an accelerated, massive and sustained local currency denominated investment over the next fifteen (15) years. By and large, debt financing is mostly done by banks, which in turn finances and refinances portfolios of loan assets by raising bonds[6] privately or through the capital markets. Though these include projects that help protect the environment, identifying their eligibility for climate finance or assessing the levels of exposure of these assets to potential financial loss resulting from the effects of climate change continues to be a challenge due to limited knowledge and internal capacity (covering not only people, processes and technology).

The Nigerian Green Bonds Market Development Programme, through its capacity building sessions and many intervention programs helped address some of these challenges by providing education and technical assistance to financial institutions and non-financial issuers on improving the processes for raising green bonds as well as the technology and

[5] https://nairametrics.com/2020/07/22/pencom-says-nigerias-total-pension-assets-now-stand-at-n10-8-trillion/

[6] A bond is a debt instrument that companies issue in capital markets to attract financing from institutional investors. It is a way of obtaining funds that they later use to grant loans to their clients.

systems used for tracking and reporting decision-useful information on environmental and social impact achieved by the loans.

REVIEW "GREEN/BROWN" ASSET EXPOSURE

Terms of access

Banks treat confidential information about their business with great sensitivity as this can be of strategic advantage over the competition. Access to this information is restricted and was provided on the basis that the integrity of source and shape of the data will be protected at all times. Though the data received from each of the banks was assessed, analysed and presented to each bank separately, the results presented in this report is of the combined data from all the banks and referred to, simply as the "*sample portfolio*".

Taxonomy

The portfolio reviews and analysis were conducted using the globally established Climate Bonds Taxonomy[7], a tool used to help issuers, investors, and governments understand which key investments will deliver a low carbon economy. The banks' portfolios made up of about 650 loan assets worth some N1.2 trillion (USD3.53) reflected the broad spread and shape of the economy. However, due to defects and inadequacies in the nation's power infrastructure, a large percentage of these projects and assets are powered by fossil fuel energy-based resources which exposes the investments to high levels of climate-related vulnerabilities, high emissions and cyclical swings in global oil prices.

The pilot

As mentioned in the previous section, identifying these highly exposed assets has been a challenge for all three banks due to limited knowledge and internal capacity. Which then leads to three critical questions - if banks had access to the levels of technical support needed to identify and assess their loan portfolios:

- What would be the level of exposure of the investments to potential stranded assets and climate-related financial risk in those banks?
- What percentage of their loan book would be eligible for green financing?
- How much of their loan book could be migrated to assets eligible for green financing in the future?

The objective of the Green Tagging Pilot project is to:

1. explore the potential for **increasing the levels of green lending** within the Nigerian banking sector,

[7] The Taxonomy is grounded in the latest climate science and has been developed through an extensive multi-stakeholder approach, leveraging the work of our Technical and Industry Working Groups.

The Taxonomy aims to encourage and be an important resource for common green definitions across global markets, in a way that supports the growth of a cohesive thematic bond market that delivers a low carbon economy.

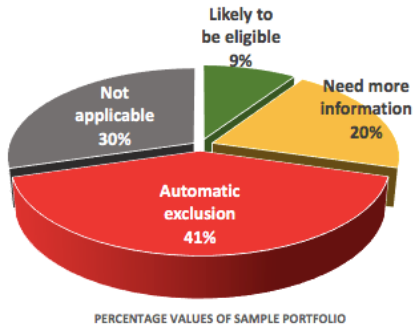
2. to **understand the state of play** through case study analysis of sample loan portfolios - provided by the three participating banks selected in line with the size and market reach (Regional, National and International), and
3. **draw findings and conclusions** that will be used to develop a roadmap to scale-up sustainable infrastructure through green bond issuance.

In order to gain a better understanding of the level of exposure, we employed a screening methodology to review the portfolios using key search criteria from the Climate Bonds Taxonomy (see the table below).

Results of the analysis broken into four categories

- **Likely to be eligible** ⟶ Assets/project are likely to be eligible for green financing and should be easily aggregated for a green bond issuance
- **Need more information** ⟶ Analysis is inconclusive - loan data does not have enough information
- **Not applicable** ⟶ The use of proceeds criteria for these assets do not fit into the Climate Bonds Initiative Standard Taxonomy or the criteria has not been developed
- **Automatic exclusion** ⟶ Assets/project are automatically excluded due to high exposure to carbon emissions

Figure 3: Sample Data – Loan Portfolio



Likely to be eligible	9%
Projects/asset	33
Need more informat	20%
Projects/assets	120
Not applicable	30%
Projects/assets	287
Automatic Exclusion	41%
Projects/asset	208

The result of the above analysis is presented from two viewpoints – (a) by percentage monetary value of the total sample portfolio and (b) the number of loans per each category. From the analysis of the sample based on numbers, we identified only 33 of the 648 assets (5%) to be likely eligible for inclusion in a certified green bond issuance based on the Taxonomy with 208 assets (32%) automatically excluded. A total of 287 assets (44%) did not easily fit in with the Taxonomy or the criteria is yet to be developed, while the analysis on the remaining 120 assets (19%) remains inconclusive due to limited information.

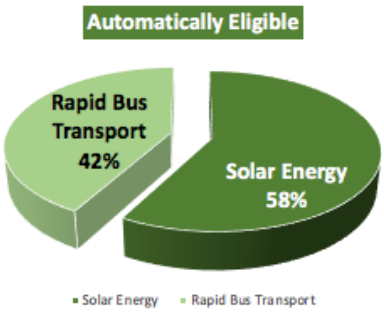
Of the thirty-three (33) assets likely to be eligible for a green issuance, eleven (11) (22% of the segment's value) was identified as being automatically eligible for a green bond issuance. These include six (6) assets in the Transport sector (Rapid Bus Transport), valued at N13.46bn and five (5) assets in the Power sector (Solar Energy), valued at N17.25bn.

However, the picture is somewhat different if the data is assessed based on the monetary value of the sample portfolio. The percentage value of the assets "likely to be eligible' for

inclusion in a certified green bond issuance increased to 9% of the total value. Unfortunately, the value of the assets "automatically excluded" also increased to 41% as indicated by the table above. The sets of assets to which the Taxonomy did not apply and the ones for which more information is required were 30% and 20%, respectively.

Figure 4: Loan Portfolio – Automatically Eligible Assets

"Automatically" eligible	22%
Projects /assets	11



Opportunities

Power & Energy Sector

Hydropower[8] has been the cornerstone of grid-powered generation in Nigeria for decades, with 15% of current power generation sources in the country hydro-based. However, the funding of solar energy projects through the issuance of Sovereign Green Bonds of 2017 and 2019 was a clear signal of the Federal Government's intentions to support the sector. In response to the COVID-19 pandemic, the Federal Government, through the Rural Electrification Agency (REA) [9], launched the ***Solar Connection Intervention Fund*** as part of the Economic Stability Plan (ESP) to roll out 5 million new solar-based connections in off grid communities. The main objectives of the government's solar connection scheme are – expand energy access to 25 million individuals through the provision of Solar Home Systems (SHS) or mini-grid connections; increase local content in the off grid solar value chain and facilitate the growth of the local manufacturing and assembly industry; and incentivize the creation of 250,000 new jobs in the energy sector.[10]

In a bid to drive market penetration, mini grid and rooftop project developers seeking to tap into these long-term, low-interest credit facilities now deploy innovative service offerings – "Power as a Service" backed by creative financial payment solutions to retail and commercial clients to drive market penetration. However, though a growing sector offers banks many green funding opportunities to dilute loan portfolios with low-carbon assets and reduce exposure to climate-related financial risks, rapid scale-up of the offering has been hampered by lending to the sector being perceived as too expensive to make projects bankable. Furthermore, lack of additional collateral on the part of the obligor or financial guarantees to de-risk the projects have added to the banks' reluctance to accept renewable assets (solar PV, batteries, etc) as the main collateral for loans disbursed for renewable energy projects.

[8] Hydropower would be considered green (subject to certain criteria). However, there were no related assets in the banks' portfolios.

[9] The Nigerian Rural Electrification Agency (REA) is the Implementing Agency of the Federal Government of Nigeria tasked with electrification of rural and unserved communities.

[10] https://rea.gov.ng/fg-launches-solar-power-naija-5-million-solar-connection-programme-off-grid-communities/

Transportation

Transportation infrastructure continues to be a challenge especially in metropolitan cities like Lagos. However, the state government has begun to approve more concessions of dedicated bus routes for private transport companies that will require financing in the future. The listing of the **Primero BRT Securitisation SPV Plc's**[11] ₦16.5 billion Series 1, 17% 7-YR Fixed Rate Bond in 2019, which was oversubscribed, is indicative of domestic institutional investors' appetite for such products. This should encourage banks with portfolios of public transport assets to raise future funds from the markets through green bonds issuance.

The relatively high percentage automatic exclusion for assets in agriculture, retail, manufacturing, mining and logistics sectors were due to these projects failing to meet the required efficient thresholds as stated in the Climate Bonds Standards and Certification criteria. Of further concern is the volume of investments (assets worth more than 35% of the portfolio value) directly invested in the oil & gas sector, due to the risk incurred by exposure to these assets. There is a clear risk to the demand for oil as an increasing number of countries adopt more stringent commitments to reduce GHG emissions and replace the use of fossil fuels. Large scale infrastructure investments in the oil & gas sector, such as oil fields, refineries, distribution pipelines, etc., risk becoming stranded assets due to an emerging transition[12] demand in the market which will lead to downgrading in value of fossil fuel assets over the next decade.

Transition opportunities

The findings from the research uncovered numerous opportunities to transition investments to more sustainable low-carbon pathways. Transition bonds[13][14] are used to finance projects that are making substantial contributions to global emission but do not have long-term role to play in a low carbon economy. Transition bonds should also provide finance to entities that, despite their "brown" business models/revenue sources, can clearly demonstrate and communicate that they are following a transition pathway in line with the Paris Agreement. Such investments could include transition 'within' a sector – i.e., decarbonisation of activities and assets (e.g., implementation investments to eliminate gas flaring or investments towards the early decommissioning of fossil fuel plants) or transition 'away' from stranded assets (e.g., switching from coal electricity to renewable energy generation).

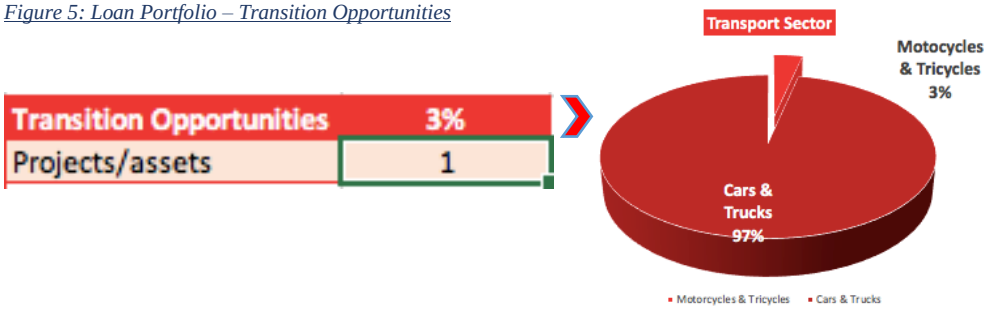
Transport: A closer look at the assets set aside for automatic exclusion indicate opportunities for the banks to migrate future financing to cleaner and more environmentally friendly solutions, especially in the transport sector.

[11] Primero Transport Services Limited is a bus operator that provides transportation services to the citizens of Lagos under the Bus Rapid Transport scheme (BRT). The company set up a Special Purpose Vehicle "SPV", which raised a bond on its behalf.

[13] https://www.icmagroup.org/sustainable-finance/the-principles-guidelines-and-handbooks/climate-transition-finance-handbook/

[14] https://www.credit-suisse.com/microsites/decarbonizingyourportfolio/en/a-growth-story.html

Figure 5: Loan Portfolio – Transition Opportunities



Motorcycles and tricycles are integrated parts of the fabric of the Lagos public transport system. These typically petrol-powered vehicles are increasingly being assembled locally rather than imported. Banks that finance this operation are in a strategic position to accelerate the change to cleaner transportation in the city. By providing financial incentives to companies that assemble tricycles that use or are retrofitted with solar-powered battery engines, they will lead a clean energy revolution in this segment of the public transport system. Also, this change in strategy will help dilute and de-risk the loan portfolios. The use of a cheaper and more stable source of energy could potentially lead to cheaper transport fares as the economic benefits are passed to the customers.

The Lagos State government is looking to introduce the use of small sedans dedicated to mass public transportation. However, as the price of electric vehicles declines, EVs could be procured rather than regular sedans, while providing infrastructure to charge EVs with solar energy. As an extension of the above, this could be an integrated clean transport solution that can be financed through the issuance of a green bond. Alternatively, the receipts can be aggregated and securitised as a green issuance.

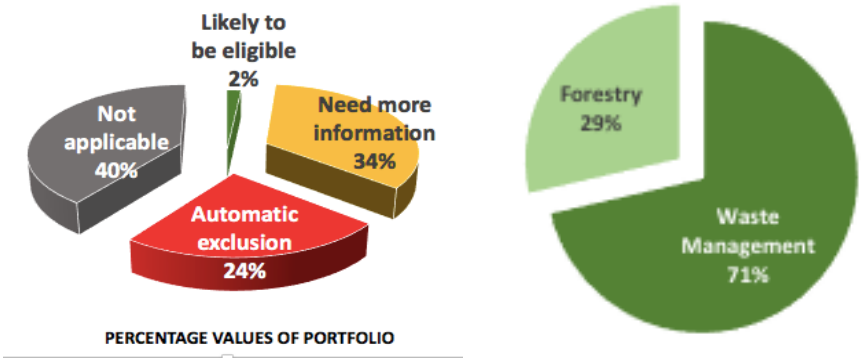
Power & Energy: The power sector is another area with great opportunities for bank financing. The transition to a low carbon economy will require sustained levels of investments in alternative sources like solar in order to meet the energy demands of the rising population. The assessment indicates that the portfolio's current levels of exposure to diesel generated power – residential homes and commercial building, could be offset through fuel (diesel-to-solar) energy transition funding programme. It would be very easy for the banks to raise green bonds to finance such a program.

Institutional Analysis

A review of each of bank's individual loan portfolio revealed some difference in the levels of "brown/green" exposure compared to the results of a combined portfolio. What is not evident from the research is whether the lending pattern is indicative of the bank's category (regional, national or international) or of the individual bank's lending preferences as we only have one bank from each of the categories in the pilot. However common to all three banks is the high exposure to the oil and gas sector, which mirrors the results from the combined portfolio.

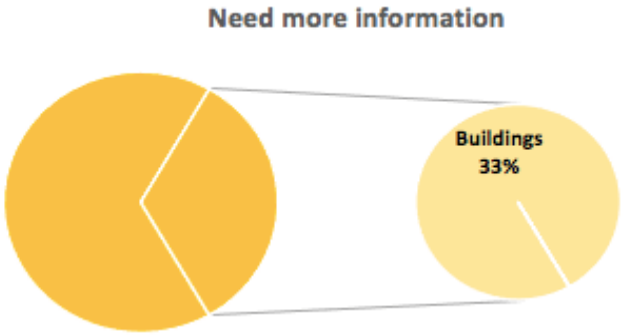
Bank 1, submitted a loan portfolio of 182 assets for the assessment. The result of the review is presented in the figure below

Figure 6: Bank 1 Loan Portfolio



We identified seven (7) assets with use of proceeds (UoP) that are likely to be eligible for a green bond issuance based on the Climate Bonds Standard Taxonomy. These were two (2) in the Forestry sector and five (5) in the Waste Management sector, which makes up two percent (2%) of the total value of the portfolio. Sixty-two assets valued at twenty four percent (24%) of the portfolio were automatically excluded from being eligible for green bond issuance due to the exposure to high emissions. A further eighty assets value at forty percent (40%) of the portfolio did not easily fit in with the Climate Bonds Standard Taxonomy or the criteria is yet to be developed, while the analysis on the remaining thirty-three (33) assets, valued at (19%) of the portfolio remain inconclusive due to limited information.

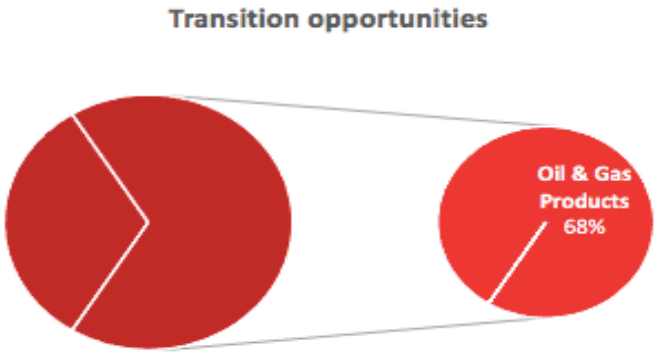
Figure 7: Bank 3 Loan Portfolio – More information needed



The research indicated that of the assets of which more information was required, eleven loans used to finance Real Estate assets could have been eligible. However, the bank could not provide any carbon emission or energy efficiency metrics due to the fact that this information is not requested during the loan origination process.

The review indicates that twenty-four percent of Bank 1's portfolio is invested in sixty-two assets exposed to high emission. The use of proceeds (UoP) includes assets in the Transportation – fleet vehicles, logistics and road construction; and the Oil & Gas sector, which most financial institutions in Nigeria have considerable exposure to.

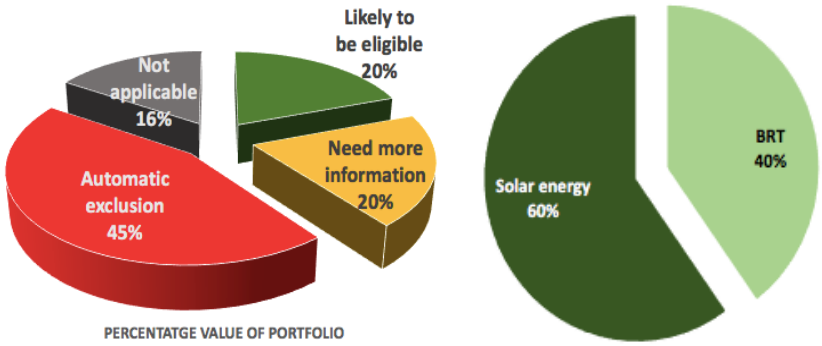
Figure 8: Bank 1 Loan Portfolio – Transition Opportunities



The financial implications to the bank of a downgrade in the value of the assets due to the potential changes in regulation, consumer demand and investor restrictions towards climate-risk exposed assets, have not been considered and as such. They have not been factored into the monthly valuation reports to the Central Bank. Sixty-eight percent (68%) of the investment automatically excluded is directly in the Oil & Gas sector.

Bank 2, submitted a loan portfolio of 142 assets for the assessment. The result of the review is presented in the figure below.

Figure 9: Bank 2 Loan Portfolio



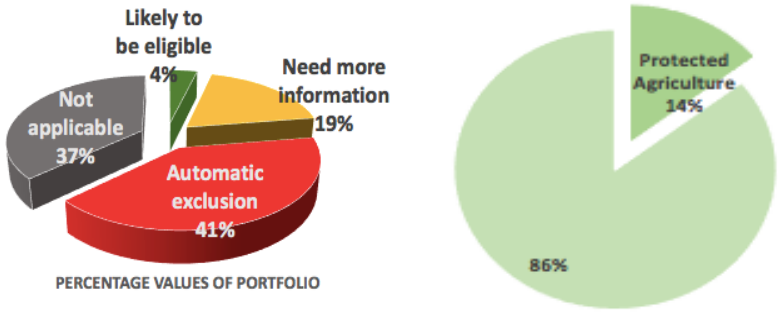
We identified nineteen (19) assets with use of proceeds (UoP) that are automatically eligible for a green bond issuance based on the Climate Bonds Standard Taxonomy. Nine (9) of these were Solar Energy assets whilst six (6) were BRT assets in the transport sector. These projects are sizable enough for a green bond issuance; however, it can be argued that with the integration of a more defined selection system or criteria, this could increase. Though thirty-five assets valued at forty-five percent (45%) of the portfolio were automatically excluded from being eligible for green bond issuance due to their carbon intensity profile, the Climate Bonds Standard was deemed not applicable to fifty-five (55) of these assets. The assessment was found to be non-conclusive for thirty-three (33) of the assets, about twenty percent (20%) of the total value of the portfolio.

There are other areas which represent opportunities for investments. A major aspect of the Lagos State's transport strategy is the use of the waterways for mass transportation. Whist CBI is yet to develop a Taxonomy on water mass transportation, the review indicates that Bank 2 currently finances ferry for public use. This presents massive opportunities for green

financing where the fuel used is transitioned to hydrogen. Other sectors that Bank 2 finances as indicated by the portfolio review that could benefit from green finance include Agriculture and Internet Broadband Connectivity.
Key to this research is how to help Bank 2 reduce its exposure to the possible financial impacts of stranded assets or the risks associated with climate change by seeking opportunities to "green" its loan book. Of the three banks under review, Bank 2 has a publicly stated lending program geared towards financing solar energy projects. However, as a percentage size of its portfolio, the research showed a very high vulnerability to the financial impacts of standard assets. The review indicated that forty-five percent (45%) of the portfolio is automatically excluded from the prospects of being financed by green bonds. However, sixty percent (60%) of the excluded assets relate to loans provided to customers in the oil and gas sector, another indicator that the bank's portfolio is further exposed to climate-related risks. Bank 2's financial position is directly exposed to potential loss of revenue incurred by the customer due to regulatory changes or penalties suffered in the course of its operations. Having identified the risks associated with its current exposure, though desirable for the bank to reduce its exposure due to potential write-downs in the face of changing regulations or market sentiments, a strategy to move the position to low-carbon assets needs to be managed in a way that it does not have adverse effects on the bank such that it suffers further loss in value due to a rapid transition.

Bank 3's loan portfolio was the largest of the three banks, with an asset size of three hundred and twenty-four (324) projects. Though from the review, seven (7) assets valued at four percent (4%) of the portfolio appeared to have been applied to sustainable finance, only one of the assets in the Agriculture sector seemed to meet the use of proceeds (UoP) criteria of the Climate Bonds Taxonomy.

Figure 10: Bank 3 Loan Portfolio



Whilst we needed more information on the use of proceeds (UoP) for fifty-four (54) assets, the Climate Bonds Taxonomy could not be applied to a hundred and fifty-two assets, either due to lack of criteria or the activities were for commercial transactions. However, of great interest are the one hundred and eleven assets which were automatically excluded from green financing.

At forty-one percent of the portfolio's value, Bank 1's potential exposure to stranded assets is quite high relative to the number of assets involved. However, the research also points to opportunities for transitioning its investments towards low carbon assets. These

opportunities include assets in Transportation where, for example, private fleet cars, vehicles used for logistics, leased vehicles, etc. are replaced by EVs. Perhaps the lowest hanging fruit for a quick transition is the investments currently in petrol-powered tricycles which can easily be converted to solar-powered battery engines. The Lagos State government is currently exploring the use of EVs for public transportation. These could form the basis for green financing where dedicated lanes are used. However, a more medium to long term transition strategy may be required to shift investments in oil & gas assets as means of de-risking the current loan portfolio and reducing the bank's exposure to climate-related financial risks.

Impact of COVID-19

In the face of heightened uncertainty in the global macroeconomic environment arising from major disruptions associated with the outbreak of the Coronavirus Disease (COVID-19), the oil price war between Saudi Arabia and Russia which reflected in declining primary commodity prices, and disruptions to the global supply chain associated with large scale global lockdowns, the Nigerian economy slid into recession in the third quarter of 2020, following a second quarter of consecutive contraction in output. A persistent weak aggregate demand and slow recovery in supply chain largely associated with the rebound in COVID-19 infection rate and weak crude oil prices resulted in a series of negative performance rates largely within the oil & gas sector. The assessment indicated that the Non-performing loan (NPL)[15] ratios submitted by the banks to the central bank was higher in December 2020 compared to March 2020 for the oil & gas sector.

The explanation provided by the CBN that the NPL ratios for bank in general rose to 6.01% at the end of 2020, higher than the regulatory ceiling of 5% allowed by the apex bank supports this assessment. As of the third quarter of 2020, the non-performing loans in Nigeria was about N1.1 trillion, with oil and gas loans representing N238 billion or 11.3% of the total figure.

Climate risk assessment

Recognising the urgency to invest in green projects requires a baseline level of awareness and knowledge about the level of climate risk and exposure for businesses. Financial institutions, regulators and policy makers need to understand how climate change may interfere with their plans and compromise their objectives, so they can adapt existing lending policies and adopt new strategies to enable them stay on track – ensure continued performance and protect profits, in sustaining the business.

Local financial institutions often lack the resources and capacity in this area resulting in a failure to take action on climate risk assessments. Therein lies the opportunity for international organisations – NGOs, DFIs, etc., to provide technical assistance with specific targets to identify and reduce the climate risk exposure and make more low-cost capital available for green investments. Another major point to be noted is the importance of regulatory surveillance and enhancement of reporting mechanisms to enable the tracking, measurement and the capacity of banks/financial institutions to respond to climate risk.

[15] A non-performing loan (NPL) is a loan in which the borrower is default and hasn't made any scheduled payments of principal or interest for some time. In banking, commercial loans are considered nonperforming if the borrower is 90 days past due

Technical assistance

The findings from the analysis indicate limited knowledge, tools and capacity to carry out climate risk assessments, identify eligible assets, structure, and qualify the key benefits for investing in sustainable projects, across the case study groups. Whilst stakeholders were sometimes knowledgeable about sustainability guidelines, they faced constraints in translating the high-level concepts into practical screening of the portfolio to identify assets in a credible, consistent way that enables them to make the link between their loans and green bond issuance. Portfolio reviews, asset tagging and the development of frameworks for identifying assets that can be financed through the issuance of green bonds would not only help de-risk the bank's portfolio but may attract much needed international capital flows.

BARRIERS & CHALLENGES

The country has enormous solar energy potential, with fairly distributed solar radiation averaging 19.8 MJm2[16]/day and average sunshine hours of 6h/day. According to some estimates, the designation of 5% of suitable land in central and northern Nigeria for solar thermal would theoretically generate a capacity of 42,700 MW of clean electricity. However, despite the country's huge potential for solar energy, the resource remains mostly untapped.

Below are some of the barriers which continue to hamper development in the sector:

Lack of enabling conditions

Effective and efficient regulatory policies and non-financial disclosure are critical enabling factors to catalysing large-scale finance for sustainable low-carbon infrastructure. Research indicates that the Nigerian climate policy landscape is well-developed – National Determined Contributions (NDCs), Sustainable Banking Principles (SBP) and SEC Rules on green bonds issuance are well established. However, the existence of such policies does not necessarily reflect in advancing their implementation in the market. For instance, the mandatory bi-annual non-financial renditions which banks make to the Central Bank of Nigeria ("CBN") in compliance with the Nigeria Sustainable Banking Principles ("NSBP"), does not incorporate clear indicators for bank lending policies such as those foreseen under the Green Bond Principles or the sector criteria as defined under the Climate Bonds Standard & Certification Scheme. As a result, the information provided on some of the assets in the loan portfolio was not granular enough, making it difficult to be conclusive on their eligibility for a green label.

Inability to identify market opportunities

The inability to identify and screen eligible projects is mainly due to sub-optimal internal capacity at the banks. Other problems include limited understanding of climate finance and its application to specific sectors, lack of defined processes and procedures, personnel and training capacity. Collectively, all these issues lead to lost business opportunities and impedes the flow of much needed green finance. The research indicates that credit risk and other key stakeholders along the loan approval process do not have the knowledge required to identify, assess and price climate-related risks effectively.

Pipeline development & digital innovation

Accessing global "green" investment flows to finance infrastructure remains a challenge due to their size. Average project ticket size often fails to meet the minimum bond issuance required by institutional investors making it difficult for project proponents to tap into this source of funding without suitable aggregation mechanisms. This is especially true for sectors like agriculture and solar energy where ticket sizes are typically small. Where banking finance is made available for these projects, the information which the banks' systems capture about the transactions by the loan origination process does not include the relevant data that allows for easy identification of green assets, which then makes it difficult to aggregate small projects with potentially similar attributes into sizes that can be issued in the market.

16 megajoules per square metre

The deployment of technical tools to build robust frameworks and database structures that support effective use of management information systems (MIS) for identifying, tracking, monitoring and reporting on the impact of climate risk, is needed to catalyse the process for developing pipelines of low carbon assets for green bond issuance. Unfortunately, the absence of prerequisite in-house knowledge of climate-related financial risk and taxonomies, makes developing effective platforms for tagging and aggregating assets for green issuance a major challenge.

Unfavourable conditions & government policy

Despite the abundant renewable energy potential in Nigeria, power sector stakeholders to date have not paid much attention to renewables due to unfavourable government policies and heightened dependency on the Oil & Gas industry. Barriers to the development of renewable energy relate to the huge inertia of the large oil and gas production in the South connected to significant subsidies policies, the lack of clarity or market information on private sector opportunities for low carbon development and a general knowledge gap concerning the financial support available within the country for green investments. The tunnel vision and over-reliance on fossil fuels means there is limited understanding of the changing global landscape with regard to fossil fuels which in turn has led to continued dependence on large-scale fossil fuel investments.

Underdeveloped domestic corporate green bond markets

The corporate bond market is underdeveloped and the green bonds market even more so. The market structures required to enable patient capital flow effectively and efficiently in support of particular sectors remain inadequate. Most operators in the solar energy space are small and are not market-ready to seek funding from the capital markets. Whilst banks are able to meet listing requirements, ticket size of underlying green assets is also a challenge. Regulators and Exchanges need to work with climate finance experts to develop market-based platforms to incubate grants and concessional finance, backed by partial guarantees to fund smaller projects. The relatively protracted regulatory approval processes for issuance of a bond is also a key issue here. A fast-tracked approach to regulatory approvals for certified green issuances is a key recommendation that could assist in obviating this problem. A model for this is the Malaysian Lodge and Launch (LOLA) approach to issuance where the turnaround time for approval of issuances has been reduced to a 24-hour cycle provided all the required documentation are in place and the responsible parties have duly signed off.

Currency risk challenges

The risks (real or perceived) associated with local currency issuance – incoherent Foreign Exchange (FX) policies, multiple FX rates, etc., continue to hinder the flow of much needed international capital for infrastructure financing. Only a handful of Tier One banks have the capacity to raise funds in hard currencies[17]. Correspondingly, very few foreign institutional investors have the mandates that allow them to take on local currency risk as they are not included in the mainstream indices. Since all green bond issuance in Nigeria to-date has been local currency denominated, foreign portfolio investors have not been able to invest. Clearly, this makes this instrument less liquid and less attractive to foreign investors.

[17] USD, EUR, JPY, GBP, CHF, AUD and CAD

Lending structure & credit risk

The use of concessional finance has helped ease the mismatch between expensive short-term bank lending and cheaper long-term solar energy financing requirements. Whilst the facilities and products from the Central Bank of Nigeria (CBN), Development Bank of Nigeria (DBN) and Bank of Industry (BoI) are a considerable starting point, the assessment from our meeting with the credit risk departments at the bank indicate a muted enthusiasm for the structure, pricing or the ability of the products in their current form, to adequately meet client's requirements.

- The Central Bank's (CBN) solar intervention fund that offers obligors access to credit facilities at single digit interest (9%), is limited to a maximum of NGN500m (which is often less than the average amount required for a typical project pipeline) and is aimed at project proponents seeking to provide affordable electricity to rural dwellers. Whist the low rate on offer to them from the CBN is generous at 2%, allowing them to make a reasonable return, the deal rarely fits in with the typical banking lending profile as rural communities do not have enough commercial activities to justify the risk and safeguard the lending without some form of *blended finance*[18] being applied
- The Bank of Industry's (BoI) product offering is also at single digits 9% and does not have an upper lending limit but borrowers are required to secure a bank that is willing to post 100% guarantee for the facility. Unfortunately, though the bank takes on the risk in full, it is only allowed to charge the obligor a one-off fee of 1% on the loan per year. Furthermore, obligors are required to pay a one-off fee of 1% on the amount once the facility is approved. On the other hand, banks are not prone to facilitating these transactions because BoI imposes restrictions on them without sharing in the risk
- The Development Bank of Nigeria (DBN) has a more flexible product offering. However, not only does its facility have an upper limit of N500m per obligor, but it is also priced more expensive than other intervention funds on offer, thus impacting the bankability of some the projects and they must still pass the credit risk lending criteria as the bank carries the risks for such projects.

Limited FX availability

The lack of a large local manufacturing base for equipment (solar panels, batteries, converters, etc.), places a high demand for foreign exchange on the central bank's limited resources, coupled with the import tariff policy are major challenges that have impeded the scale-up of the industry.

Grant funding structure

Grant funding is valuable in helping to scale-up and catalyse the industry. Where successful, grant funding can crowd in local and international investors and contribute to greening the whole economy including local manufacturing but if not implemented/structured appropriately, it can distort market prices and project costs. For example, some of the earlier market successes benefited from up to 70% grant support which has impacted the market in two major ways; firstly, the generous size of the grant makes implementing future projects using debt much more difficult to finance. Secondly, grants are often provided in the form of equipment rather than cash. This means that projects get implemented without contributing

[18] Blended finance is defined as the strategic use of public or philanthropic development capital for the mobilisation of additional external private commercial finance for SDG-related investments

to domestic development or deploying locally manufactured equipment – in the long-term, Africa needs to be a major player in the green revolution, not merely a consumer in the global green industrialisation process.

Third party risk

The assessment indicated that the high capex requirements of implementing solar energy projects, coupled with high cost of short-term banking finance leads credit decisions to be influenced by energy affordability assessments. Bankers are more likely to lend to projects that deploy energy for productive use rather than for consumption as these projects have the capacity to generate future revenues and are less likely to default on their loan commitments. Furthermore, banks are less inclined to lend to energy projects where the efficiency rate of the deployment (service uptime) is projected to be less that 85%. The assumptions are that the customer is likely to revert to diesel as the primary source of fuel for generating power. This not only extends the lender's exposure to brown assets further into the future, but it also exposes the lender to the risk of "**greenwashing**" if the project had benefited from some form of green finance.

Limited knowledge at senior management level

The lack of capacity and limited knowledge at senior management levels (credit committees, business development and risk management, etc.) of both the benefits of financing low-carbon energy and the climate-related financial risks associated with investments in carbon-intensive assets e.g. fossil fuel generated power reduces the prospects of approval for solar energy projects, making the shift of capital to these types of assets more difficult.

SCALING UP GREEN BONDS ISSUANCE

With its rich deposits in mineral resources, vast arable land, a growing and talented youthful population and huge infrastructure gaps Nigeria is arguably the most attractive destination for foreign direct investments. Though the African Development Bank (AfDB) projected real GDP growth at 3.3% for 2021, premised on the implementation of the 2nd Economic Recovery Growth Plan (2017-20), which placed emphasis on economic diversification, the real GDP growth projection has been revised to a more realistic 1.7% - 2% in the face of headwinds and economic slowdowns resulting from the impact of the COVID-19 pandemic and persistent low oil prices.

Whilst a "Year-on-Year" double digit growth rate might be considered ambitious, it is realistic to expect Nigeria's real GDP to consistently grow annually at a minimum rate of 6% - 8% under much improved macroeconomic conditions. However, in order to achieve this level of sustained economic development, a massive, accelerated and sustained private sector-led local currency investment program in the nation's infrastructure for at least, the next 10-15 years is required. Changing the foundation of the infrastructure platform of the economy has the potential to attract much needed investment flows into various sectors of the economy that currently needs to be developed. That said, it is imperative that the investment program is prioritised, focused and targeted at infrastructure that is green with the potential for the most long-term development returns.

Funding priorities

A major objective of the revised National Determined Contributions (NDCs) process is to work towards ending gas flaring, develop an off-grid solar PV solution generating 13GW of electricity and achieve 30% energy efficiency by 2030. For instance, Lagos state home to one of the world's fastest growing urban population, has identified seven sectors – Health, Transport & Storage, Education, Water & Sanitation, Agriculture, Governance and Social infrastructure, and prioritised them for social, sustainable or green funding opportunities. However, sustained investment into these sectors presupposes that the enabling environment to develop a robust and sustainable power infrastructure is being considered.

This report, produced from an assessment of 648 loan assets (80% of which financed infrastructure projects), input from an expert group drawn from three banks, and stakeholders from various domestic and international institutions hopes to develop a roadmap that will enable banks finance infrastructure assets in the domestic market as well as tap into the international capital markets in local currency in order to scale up the green economy in Nigeria.

Below are proposed actions and interventions that should be considered by the central bank and other financial regulators in accelerating the growth of Green Bond issuance by financial institutions.

Technical assistance & capacity building

1. **Initiate a sector-wide capacity building program to help banks develop frameworks for integrating green definitions into their lending policies.** Capacity building should be aimed at both strategic and operations levels. The strategic level will focus on

understanding the relationship between the impacts of climate-related (physical and transition) financial risks on bank lending and investment portfolio and the banks' credit rating, whilst the operational level will focus on training senior level officials who are responsible for credit risk management on how changes to bank lending policy can be leveraged in influencing customer borrowing decisions

2. **Provide technical service across the sector** to increase the opportunity to identify and tag green assets. This assessment indicates that banks would benefit from having the internal capacity and technical knowledge to perform reviews of loan portfolios in order to improve the prospects of issuing green bonds. It was acknowledged that without the benefits of external technical assistance, this cannot be achieved.

Role of the Regulator – Central Bank

3. **CBN to relax regulatory policy on capital adequacy requirements by adjusting high-quality liquidity asset haircuts.** The central bank can change the criteria for its eligible universe of assets by increasing the quality requirements for brown assets and loosening the liquidity or credit quality requirements for green assets. For instance, this could be applied to non-performing loans (NPLs), relating to renewable energy assets as a way of providing incentives to stimulate activities in the industry. This may require an intensive and comprehensive training at the central bank for key staff that perform the Financial Systems Stability and Risk & Audit functions.

4. **CBN to review policy on banks' monthly Sustainability Reports** to include a more granular report on the banks' green financing footprint by requiring banks to disclose their exposures to climate risk as recommended by the TCFD (Taskforce on Climate-related Financial Disclosure). This will require a wholescale review of banks' current loan origination and reporting templates. The reporting framework to be developed from this study will seek to support the monthly sustainability report and enhance the effectiveness of the Nigeria Sustainable Banking Principles to which all Nigerian banks are committed

5. **CBN to adjust the penalty factor in the collateral framework by applying a higher haircut to brown assets** (loans and debt instruments) offered by banks as collateral. This means banks using loans or bonds with underlying assets that are vulnerable to physical and transition climate risks will be subjected to higher haircuts – this would include loans to fossil fuels.

6. Mandatory requirements for effective environmental and social risk management - **the CBN shall mandate banks to report on their brown financing footprint** and provide a strategy on how it intends to transition their investments by implementing processes for managing environmental and social risks of projects for which loans are to be granted credit.

7. **Greening the CBN's pension fund by indicating a preference for low-carbon assets.** The Central Bank will actively purchase green assets such as green asset-backed securities as against assets vulnerable to climate risk and bonds exposed to transition risks from commercial banks and the capital markets.

Finance innovation

8. **The use of blended finance vehicles and instruments** like guarantees, technical assistance, grants, risk insurance and partial guarantees are gaining traction with private investors, who can use a small amount of development capital to mitigate against a range of risks. Public finance sources can be used in a number of ways to support green bond issuances focused on solar energy projects including: (i) funding technical assistance for the structuring of projects; (ii) de-risking investments through guarantees or FX-hedging; or (iii) financing of energy substitution initiatives and project types.

9. The use of aggregation tools in pooling together assets/projects of similar attributes (term, rates, sectors, etc.) into larger ABS bonds that can be issued on to institutional investors.

10. **Training project proponents on how to create bankable projects and prepare them to access financing from banks**. Many of the earlier projects had been grant rather debt funded, therefore project proponents though technically sound, do not have the requisite financial awareness of lending bank requirements nor do they have the knowledge to create bankable projects, consequently a high percentage of lending requests are declined by the credit committees.

Internal capacity

11. **Improve internal capacity (process and technology)** to ensure that loans are more easily qualified, identified, tracked and monitored from loan origination to loan approval. The low hanging fruit lies in the identification and packaging of assets for green bond issuance as well in identifying the environmental impact of all approved loans from the outset.

Reporting Framework for Financial Institutions to Report on Green Financing

Report description: A framework for financial institutions to identify, tag and report on their green financial position.

The report will cover the following aspects:

- *Description of Climate-related Risks*
- *Definition of green/sustainable assets*
- *Rules and guidelines governing the management of proceeds*
- *Metrics and indicators for tagging and tracking assets*
- *Framework for reporting on green*

BACKGROUND

It is no longer disputable that climate change presents significant financial risks to the global economy which is best mitigated through an early and orderly transition. Whilst the outcomes, severity of impact or timelines are not known, what is certain is that some combination of physical and transition risks impacting the stability of global financial systems will crystallise sometime in the future. The sad injustice of climate change is that the most vulnerable and hardest hit will be those who contributed the least to this impending catastrophe. Africa can easily be said to contribute the least of any continent to global warming. Each year Africa produces an average of just over 1 metric ton of the greenhouse gas carbon dioxide per person according to the US Department of Energy's International Energy Annual 2002[19] but the continent stands to lose the most from the negative impacts of increased intensity and frequency of droughts, floods, cyclones and desertification on the agriculture sector and the general safety of human habitation and livelihoods in coastal cities due to rising sea levels.

Banks, insurance companies, and other financial institutions are indirectly responsible for contributing to greenhouse gas emissions by funding organisations with carbon-intensive business activities. Financial institutions are inadvertently exposed to climate-related financial risks through their lending operations. The Prudential Regulatory Authority (PRA) within the Bank of England identified two sets of financial risks associated with climate change:

- **Physical risk of climate change, which include global rising temperatures and extreme weather conditions** can be either event driven or long-term shift in climate change. Financial implications of extreme resource shortages or the diversion of capital from productive revenue generating activities to reconstruction and replacement of infrastructure vital to manufacturing on an organisation can be severe and affect its ability to meet financial obligations. A change in the debt capacity of borrowers or major fall in value of collateral posted by organisations can increase the credit risks to lenders. Subsequently, these changes to the lender's projected earnings will be reflected in the financial statements and if viewed unfavourably by investors, may impact the lender's reserves and payment capacity negatively.

- **The transition to a low-carbon economy presents risks for the financial sector.** The financial impact of regulatory actions (such as an alignment of government policies with the Paris Agreement) to help contain greenhouse gas emissions or contribute to climate change adaptation or capital investments towards lower emission energy sources or energy efficiency solutions, will depend on the nature, timing and speed of the interventions. If too rapid, can see a fall in asset values of energy organisations which may subsequently impact the values of investments held by financial institutions, especially those highly exposed to sectors such as coal, oil and gas.

Nigeria's economy is extremely vulnerable to the impacts of climate change due to a high exposure to sectors such as agriculture, transportation, and oil and gas. Results from the green tagging project portfolio review indicate a majority of bank lending is to assets in

[19] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1280367/

carbon-intensive sectors. Using Moody's Risk Weighted Sector Categorisation tool to appraise the levels of bank lending to oil and gas related companies, we find that close to 26% of the total gross loans from the banks at the point of review was considered to be at risk. As this has implications for the financial sector as a whole, financial regulators need to be more aware about the financial risks and potential system-wide impacts of climate change on financial stability. The financial institutions should review their lending criteria and enhance reporting and disclosure requirements to include climate-related and environmental considerations in their governance and enterprise risks management framework. However, without an effective mechanism for identifying these risks and measuring levels of exposure to either green or carbon-intensive assets, this will continue to pose challenges to banks.

The report is primarily focused on developing a high-level reporting framework that enables financial institutions to determine the exposure of their loan book to green projects; promote transparency and integrity of regulatory disclosures; and increase capital allocations to green and sustainable projects by aligning internal decision-making on project evaluation and selection with green taxonomies and asset classifications whilst preserving the flexibility and integrity of the lending process.

FRAMEWORK FOR GREEN LOANS REPORTING

Green Loan Definition

Loans classified as green are any type of loan instrument dedicated to financing or re-financing in whole or in part, new or existing eligible projects with climate or environmental benefits. The Green Loan Principles (GLP) comprise of voluntary guidelines that seek to promote the integrity of green loans by classifying the instance in which a loan may be categorised as "green".

Governance

The Green Loan Principles sets out clear guidelines on the attributes of a green loan based around the four core components below

- Use of Proceeds
- Process for Project Evaluation and Selection
- Management of Proceeds
- Reporting

Use of Proceeds

The cornerstone of a green loan is that the proceeds from the loan finances in whole or in part green projects including related or supporting expenditure such as R&D. All dedicated green projects should provide clear climate and environmental benefits, which will be assessed and quantified by the borrower. Customer loan facilities often take the form of one or many tranches. The green tranche must be clearly tagged, with the proceeds ring-fenced in a separate account or tracked by the bank. The GLP recognises several categories of

eligibility for green projects based on key thematic areas of environmental and climatic concerns.

Process for Project Evaluation and Selection

Green loan customers are required to communicate to the bank in a clear and transparent way:

- the environment, sustainable and climate-related objectives of the loan
- the process by which the customer determined that the project fit within the eligible categories of the GLP
- the related eligibility criteria including other processes for identifying and managing any material environmental risks associated with the project

Management of Proceeds

Proceeds from a green loan should be tagged and ring-fenced in a separate account. Multiple tranches of green loans should be tracked in a transparent manner with the use of proceeds clearly designated. Banks should encourage borrowers to establish internal governance processes through which allocation of funds can be tracked.

Reporting

Banks should encourage borrowers to track and provide up-to-date information on the projects financed with the green loans. This should include the details about the amount allocated and the expected environmental and climate-related impact of the projects. The GLP recommend the use of qualitative performance indicators and quantitative performance measurements – energy capacity, greenhouse emissions, fossil fuel backup, etc.

The Nigeria Sustainability Banking Principles were adopted in 2012 by banks, discount houses and development financial institutions (DFI) to foster positive development by committing to economic growth focused on environmentally responsible and socially relevant criteria. However, there is no evidence of the regulator assessing bank' business activities and operations for any green-related metrics or criteria to the financial stability of the banking sector. Integrating green-related disclosure into regulatory reporting will force financial institutions to adopt international reporting standards for assessing, identifying, tagging, measuring and disclosing levels of lending to carbon-intensive projects in a harmonised and transparent way.

A major challenge for banks, relates to the costs and effort associated with gathering the data required to report on the loans disbursed to borrowers especially to small and medium customers. Banks should make their green strategy public and work with borrowers to integrate the bank's ESG criteria into their own information management system. Borrowers with the ability to track the use of proceed and monitor the resulting impact, should be encouraged to provide this information to the banks in a decision-useful format in their reports.

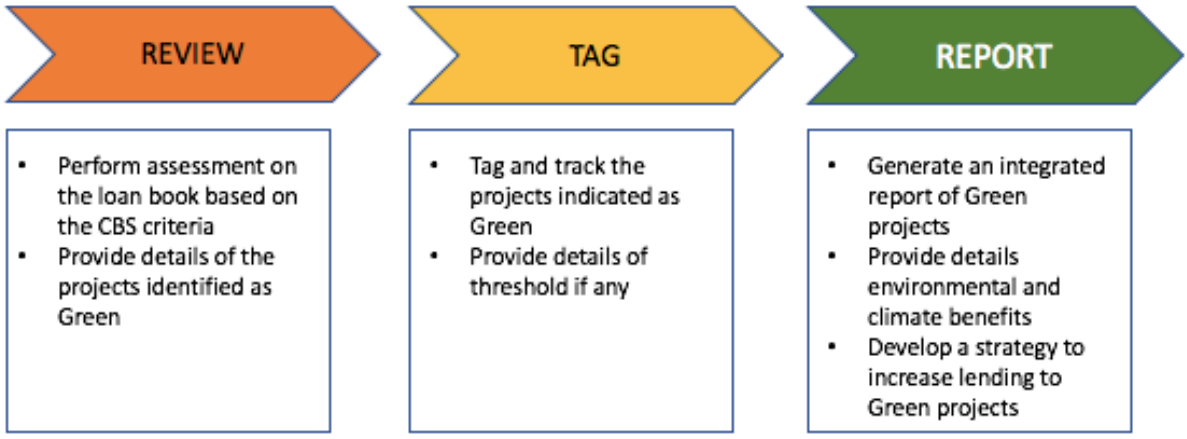
The Central Bank can encourage banking institutions to create green loans and strengthen environmental & social risks management processes by adopting some of the regulatory policies and guidelines issued by the China Banking Regulatory Commission (CBRC) on green credit. These include conducting due diligence, examining client compliance to relevant

environmental and social requirements, assessing environmental and social risks, examining the environmental records of clients, and conducting post-loan management. It also obligates banks to suspend or terminate financing where "major risks or hazards are identified"[20]

Portfolio Review Process

In developing a transparent disclosure framework for regulators, banks should review, monitor, validate and report the sustainability information provided by borrowers in line with the eligibility criteria and thresholds of global standards and guidelines in order to preserve the integrity of loan products. Banks seeking to increase the allocation of lending facilities for sustainable projects should conduct portfolio reviews on the loan book to determine the exposure to green projects, tag each green project as part of the risk management process and disclose the findings as an integrated ESG report to the Central Bank or financial regulator, having developed a strategy to realign the portfolio with the Paris Agreement. The

Figure 1: Portfolio Review Process



Eligibility Criteria

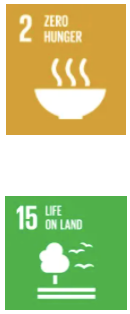
Though eligible green projects may be funded in whole or in part by proceeds from green loans, payment of the principal and interest of the loan can be made from the borrower's general funds as payment is not depended on the performance of the eligible green projects.

The "Eligibility Criteria" for reporting green loans or revolving credit facilities should be based on whether the funds are allocated towards financing and/or refinancing the development, construction and operations of new and existing projects that meet the "use of proceeds" eligibility requirements of the Green Loan Principles and/or the Climate Bonds Standard. This process should be conducted periodically to ensure continuous compliance and improvements to the banking institution's economic and social risk management processes

[20] https://www.greenfinanceplatform.org/policies-and-regulations/chinas-green-credit-guidelines

ELIGIBLE PROJECT CATEGORY AND BENEFITS

Green Project Category	Use of Proceeds	Eligibility criteria	Objectives	Benefits	SDG Alignment
Renewable Energy	Solar Energy	Solar facilities shall not have more than 15% of electricity generated from non-renewable sources	Enhance the energy transition to a low-carbon economy	Climate change mitigation and adaptation --- GHG emissions reduction --- Pollution reduction	 
	Wind Energy	Wind facilities shall not have more than 15% of electricity generated from non-renewable sources			
	Biofuels	Limited to projects with direct emissions of less than 100gCO2/kWh using sustainable feedstock that does not deplete existing terrestrial carbon stocks or high-biodiversity areas or compete with food production. Feedstock will be certified under approved best practices standards.			
	Small run-of-river hydro plants	Small run-of-river hydro plants under 25MW and/or facilities operating at life cycle emissions lower than 100g CO_2e/kWh			

Energy Efficiency	New and refurbished buildings, energy storage, district heating, co-generation, smart grids, appliances and products	Renovation projects meeting 30% efficiency gains or 30% CO2 emission reduction	Increasing efficiency and reducing GHG emissions	Climate change mitigation and adaptation --- GHG emissions reduction	
Sustainable Water and Wastewater Management	Infrastructure for clean and/or drinking water, wastewater treatment, sustainable urban drainage systems and river training and other forms of flooding mitigation		Increasing the efficiency of water services	Climate change mitigation and adaptation --- GHG emissions reduction --- Pollution reduction	
Land use	Agriculture production systems including capital and operating expenditure	Perennial and non-perennial crops production Production unit: Include inputs, capital goods, outputs, waste management and primary processing or storage before point of sale Non-production unit: Products and services for mitigation or adaptation and resilience for crop production	Reduce GHG emissions, Increase food security	Climate change mitigation and adaptation --- GHG emissions reduction	
Land Use	Forestry	Plantation forest Sustainable managed natural forests Conservation forests Land under reforestation Protected lands Equipment for the management & maintenance of forest	Carbon sequestration Reduce GHG emission Increase GHG emission efficiency	Climate change mitigation and adaptation --- GHG emissions reduction	

		Equipment for harvesting timber Timber storage facilities Supply chain facilities Monitoring facilities			
Clean Transportation	Electric, hybrid, public, rail, non-motorised, multi-modal transportation, Infrastructure for clean energy vehicles	Rail: construction and operation of low-carbon passenger and freight transportation [emitting less than 25 grams of CO_2 per ton-kilometre (gCO_2/t-km)]	Enhance the energy transition to a low-carbon economy	Climate change mitigation and adaptation --- GHG emissions reduction --- Pollution reduction	 
Green Buildings	Efficient commercial and residential buildings meeting regional, national or internationally recognized standards or certifications	Buildings that have received certification to the following programs and levels: LEED Gold & Platinum and EDGE certification	Enhance the energy transition to a low-carbon economy	Climate change mitigation and adaptation --- GHG emissions reduction --- Pollution reduction	 

Exclusion Criteria

Banks' Environmental and Social Risk Analysis should exclude projects that support the following activities as they are not eligible under a Green or Sustainable reporting. Framework:

- fossil fuel exploration and production
- fossil fuel-based power generation or hybrid plant with more than 15% fossil fuel back up
- construction of rail infrastructure dedicated to the transportation of fossil fuels
- generation of nuclear power
- production or trade in any activity deemed illegal under national laws or regulations or international conventions and agreements

The Central Bank should discourage banking institutions from knowingly finance projects involved in the production, trade or use of products, substance or activities that include activities that are illegal under Nigeria country laws, regulations or ratified by international

conventions and agreement or subject to international bans or agreements relating to the protection of biodiversity resources or cultural heritage[21].

The banks' credit and finance teams will track the allocation of proceeds deemed to be "Eligible Green Projects" under the framework using appropriate and transparent internal automated management systems and simple spreadsheet, including a brief description of the relevant eligible green projects, the location of the projects and the amount allocated the projects. On an annual basis, the bank will undertake a review of the loan portfolio, identify eligible green loans, verify the loans against the criteria of the Climate Bonds Standards or other international Taxonomies, tag and measure the levels of exposure to green and reported the findings to the Central Bank or appropriate financial regulator. This process will apply to both term loans and revolving credit facilities that the banks make available to customers and borrowers.

The report subject to confidentiality considerations, in relation to the projects and borrowers to which banks are subject, additional descriptions of select projects funded with the net proceeds from the loans and, to the extent possible, the expected environmental impact of the projects should be provided to financial regulators.

[21] https://www.idbinvest.org/en/download/12368