

ISSUER IN-DEPTH

13 December 2017

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Nigeria, Government of

Green Bond Assessment - Series 1 Green Notes

Summary Analysis

Summary opinion

A GB1 (Excellent) green bond assessment is assigned to the senior unsecured fixed-rate notes that are scheduled for issuance by the [Government of Nigeria](#) (B2 stable) during the week of 18 December 2017. The GB1 grade is supported by a full allocation of proceeds to renewable energy and afforestation projects that qualify under domestic guidelines and international green bond taxonomies. Key considerations in our assessment include:

- » The government's comprehensive organization and governance structure, which includes a formal green bond framework, project evaluation and selection criteria, and oversight from internal bodies and external organizations.
- » Attainment of pre-issuance assurance that complies with the Climate Bonds Initiative's (CBI) Climate Bond Standards and expected CBI certification.
- » Robust disclosure practices providing detailed information on project descriptions, applied methodologies and intended environmental, economic and social benefits.
- » A transparent internal process to manage green bond proceeds at a project-level and formal guidelines for the liquidity management of unallocated funds, though the separation of duties between authorizing and accounting functions could be clearer.
- » Commitment to ongoing reporting over the life of the bonds, and possibly beyond.

Factor	Factor Weights	Score	Weighted Score
Organization	15%	1	0.15
Use of Proceeds	40%	1	0.40
Disclosure on the Use of Proceeds	10%	1	0.10
Management of Proceeds	15%	2	0.30
Ongoing Reporting and Disclosure	20%	1	0.20
Weighted Score			1.15

The transaction's weighted score, using the green bond scorecard, is 1.15. This, in turn, corresponds to a GB1 grade.

Transaction summary

The Government of Nigeria is planning to issue senior unsecured fixed-rate notes in the amount of NGN10.69 billion (roughly \$29.7 million), with maturities of five years or longer, during the week commencing 18 December 2017. The precise coupons and maturities will be determined at the time of closing. The Series 1 issuance will represent the government's debut offering under its NGN150 billion (\$417 million) green bond program and is expected to be listed on the Nigerian Stock Exchange (NSE).

Proceeds from the issuance will provide new financing for renewable energy and afforestation projects that qualify under the green bond framework developed by the Federal Ministry of Environment (FMEnv) in conjunction with the Federal Ministry of Finance (FMF).

The transaction will represent Africa's maiden sovereign green bond, and only the fourth sovereign green bond on record following offerings by the government of [Poland](#) (A2 stable) in December 2016, and the governments of [France](#) (Aa2 stable) and [Fiji](#) (Ba3 stable) in January and November 2017, respectively.¹

Strengths and Weaknesses

Strengths	Weaknesses
Comprehensive governance structure, bolstered by a formal green bond framework, pre-issuance assurance and external oversight	Lack of a complete separation of duties between the institutions responsible for authorizing and accounting of the green bond proceeds
Full allocation of proceeds to renewable energy and afforestation projects that qualify under domestic and international taxonomies	
Robust disclosure practices providing comprehensive information on project descriptions, applied methodologies and intended benefits	
Transparent internal process to manage the segregation and tracking of proceeds at a project level	
Ongoing reporting expected over the life of the notes, and possibly beyond	

Organization



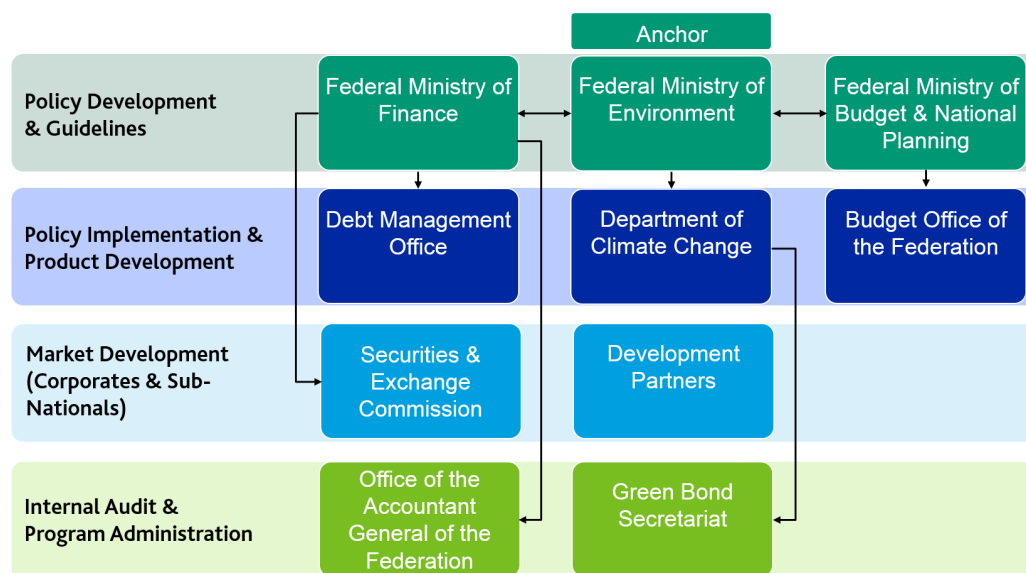
The Nigerian government has implemented a complex, but comprehensive, organizational structure to execute its green bond program, reflecting the multiple internal and external stakeholders involved. Exhibit 1 provides a snapshot of the institutional arrangements, which will require effective coordination across multiple ministries, departments and agencies (MDAs). The FMEnv is ultimately responsible for evaluating and selecting green projects for consideration, while the FMF will develop the annual borrowing plan for the government with a portion allocated to green bonds. Working with the Debt Management Office (DMO), these functions will largely coordinate the implementation and execution of Nigeria's green bond program.

The Department of Climate Change, which resides within the FMEnv, has established a green bond technical advisory team to support programme implementation, which we view as positive. The advisory team is responsible for providing guidance on the financial performance, rates of return, and environmental benefits (e.g. emissions savings) of selected projects, with technical and sector specialists charged with producing feasibility studies and financial and environmental modeling.

This publication does not announce a credit rating action. For any credit ratings referenced in this publication, please see the ratings tab on the issuer/entity page on www.moody's.com for the most updated credit rating action information and rating history.

Exhibit 1

The Government of Nigeria's green bond institutional framework



Source: Nigerian Federal Ministry of Environment

The adoption of a green bond framework that enshrines the required processes for green bond issuance reinforces the government's robust organization and governance structure. The framework provides details on eligible project categories, the project evaluation and selection process, how proceeds will be managed, and how the issuer intends to report on projects on an ongoing basis. It also confirms the use of a second-party opinion (provided by DNV GL), which it states will be made publically available on the government websites of the FMEEnv, FMF, and DMO. The framework is aligned with the country's green bond guidelines, which are adapted from the Green Bond Principles (GBPs) and documented in the bond prospectus and investor presentation.

The authorities have documented the project evaluation and selection procedures, which include scored criteria for green credentials (consistency with the GBPs), readiness and robustness (for example, project inclusion within the 2017 budget) and financial viability. An interministerial committee for climate change – made up of seven distinct ministries – are responsible for project identification. From an initial evaluation of 30 potential projects, 18 projects were deemed eligible for the green bond program. Additional details on why certain projects failed to make the short list have been presented.

To support its green bond initiative, the government has also set up a Green Bond Private Public Sector Advisory comprised of external development partners, independent regulators, capital market operators and relevant MDAs. The development partners include the World Bank, International Finance Corporation, African Development Bank, the UN Environment Program (UNEP) and the CBI. The scope of the advisory group is broad based – including monitoring, compliance, technical and capacity-building responsibilities – and provides a significant measure of support for the governance and oversight of the green bond program. For example, the authorities enlisted the support of the World Bank and UNEP in the monitoring, reporting and verification framework installed for the afforestation program.

Factor 1: Organization (15%)

	Yes	No
Environmental governance and organization structure appear to be effective	●	
Policies and procedures enable rigorous review and decision making process	●	
Qualified and experienced personnel and/or reliance on qualified third parties	●	
Explicit and comprehensive criteria for investment selection, including measurable impact results	●	
External evaluations for decision making in line with project characteristics	●	
Factor Score	1	

Nigeria's Nationally Determined Contribution (NDC)

Nigeria submitted its Intended Nationally Determined Contribution to the Conference of Parties to the United Nations Convention on Climate Change (UNFCCC) in October 2015. Subsequently, the country became a signatory to the Paris Agreement on climate change in September 2016 and ratified the pact in May 2017.² Exhibit 2 summarises the key targets and assumptions of Nigeria's NDC.

Exhibit 2

Selected highlights of Nigeria's NDC

Aspect	Detail
Type of objective	Reduction from Business as Usual (BAU)
Target year	2030
Implementation period	2015-2030
Base data period	2010-2014
Summary of objective	Economic and social development: grow economy 5% per year, improve standard of living, electricity access for all
Unconditional and conditional mitigation objectives	20% unconditional; 45% conditional
Key measures	<ul style="list-style-type: none"> • Work towards ending gas flaring by 2030 • Work towards Off-grid solar PV of 13GW (13,000MW) <ul style="list-style-type: none"> • Efficient gas generators • 2% per year energy efficiency (30% by 2030) <ul style="list-style-type: none"> • Transport shift car to mass transit • Improve electricity grid • Climate smart agriculture and reforestation
Emissions per US\$ (real) GDP	0.873 kg CO ₂ e (2015) [0.491 kg CO ₂ e (2030)]
GDP per capita (US\$)	2,950 (2014) 3,964 (2030; real 2015 US\$)
Estimated emissions per capita	Current: around 2 tonnes CO ₂ e 2030 Conditional: around 2 tonnes CO ₂ e 2030 BAU: around 3.4 tonnes CO ₂ e
Global warming potentials used	IPCC Fourth Assessment Report
Cost estimate data	National Cost = \$142b; National Benefits = \$304b (World Bank report "Low Carbon Development Opportunities for Nigeria" (2013))

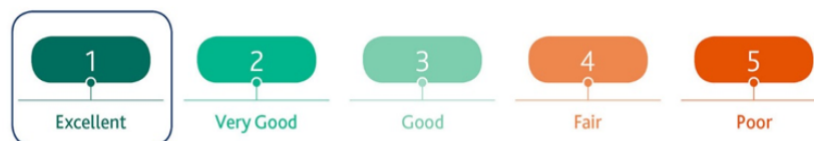
Source: United Nations Convention on Climate Change

Under a business-as-usual growth scenario, consistent with strong economic growth of 5% per year, Nigeria's emissions are expected to grow to around 900 million tonnes per year in 2030, which translates to around 3.4 tonnes per person. The country has made an unconditional commitment to reduce emissions by around 20% from business-as-usual levels by 2030, which is consistent with current development trends and government policy priorities.

On the condition that international support — in the form of finance and investment, technology and capacity building — is forthcoming, the combined measures could potentially deliver a 45% emission reduction against the business-as-usual pathway.

The government's green bond program will play an important role in helping the country achieve its NDC objectives. The Green Bond Framework directly links eligible project categories for Use of Proceeds (energy efficiency, resource efficiency, renewable energy, clean technology, and sustainable forest management) to the equivalent NDC targets.

Use of Proceeds



The full allocation of proceeds will be used to finance new projects with “clear environmental benefits” that qualify under the government's established Green Bond Framework and that are linked to targets outlined in the country's NDC. The projects are also aligned with the taxonomies established by the GBPs and the CBI's Climate Bond Standard Version 2.1.

Specifically, this consists of allocations to three programs involving the development of renewable energy (solar) generation and a national afforestation initiative. Exhibits 3 and 4 provide additional details on each program as well as the expected apportionment of proceeds.

Exhibit 3

Alignment of projects with domestic guidelines and international taxonomies

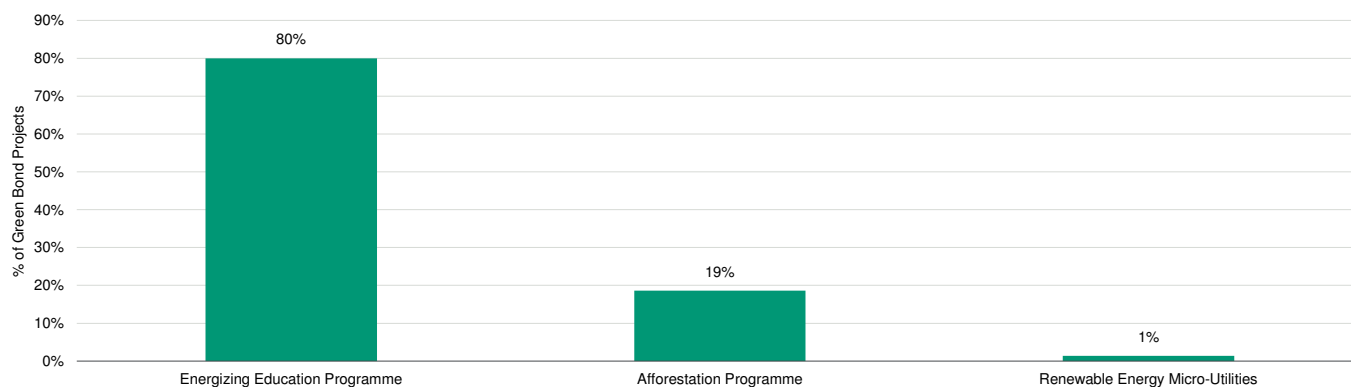
Program Name	Program Description	Projects financed by Series 1 Issuance	Total Allocation, NGN billion	% of Total Proceeds	Green Bond Framework Category	GBP Taxonomy	CBI Taxonomy
Energizing Education Program (EEP)	An electrification program that seeks to develop off grid Independent Power Plant-type projects for the generation and provision of adequate power supply to 37 federal universities and 7 teaching hospitals across the country.	The pilot green bond will finance solar energy projects for 7 universities.	8.55	80%	Renewable Energy	Renewable Energy	Renewable Energy – Solar
Afforestation Program (FOR)	The program will focus on planting, maintenance, and protection of forest land in 25 states across the country.	The pilot green bond will finance the first year of this multi-year program.	1.99	19%	Sustainable Forest Management	Environmentally-sustainable forestry	Land Use Change – Afforestation
Renewable Energy Micro-Utilities (REMU)	This program aims to provide electricity to 300,000 individuals in 45 unserved rural communities by providing mini-grids with distributed loads of between 33-50kw per community.	The pilot green bond will finance one of the 45 unserved communities.	0.15	1%	Renewable Energy	Renewable Energy	Renewable Energy – Solar

Sources: Federal Ministry of Environment, Federal Ministry of Budget and National Planning, Climate Bonds Initiative, International Capital Market Association's Green Bond Principles 2017

Exhibit 4

Proceeds will finance environmental projects from three programs

% expected allocation of proceeds



Source: Federal Ministry of Budget and National Planning

It is expected that the micro-utilities and afforestation programs will be multi-year projects financed by the green bond program. In addition, the full EEP program is much larger than the projects tied to green bond issuance and will also include additional projects (such as gas assets) that do not meet the CBI's Climate Bond Standards. Such ineligible projects will not be financed via the green bond program.

Factor 2: Use of Proceeds	Yes	No
>95% - 100% of proceeds allocated to eligible project categories that are determined based on the issuer's adopted policies and the categories established under the Green Bond Principles that will be further informed by one or more robust and widely recognized green bond frameworks or taxonomies that qualify eligible projects, including any applicable regulatory guidelines.	•	
Factor Score	1	

Disclosure on the Use of Proceeds



The disclosure practices are robust overall, providing a strong level of detail on project descriptions, applied methodologies and intended benefits.

The government has provided portfolio-level technical reports for each of the three programs that will be financed with the green bond proceeds. Each report contains comprehensive program descriptions, assessments of the environmental, financial and economic impacts and an evaluation of safeguards and social implications (see Exhibit 5).

For the renewable energy projects, key quantitative metrics include total generation capacity, expected reduction or avoidance of emissions, estimated costs, expected avoided/reduced emissions and projected financial returns, while qualitative environmental considerations will incorporate pollution reduction, reduced noise pollution and increased health and safety. For the afforestation program, state-level descriptions are provided including areas covered, emissions sequestered, and populations impacted. For all three programs, the intended economic impact is also quantified — for example, through jobs created and tax revenues generated.

Exhibit 5

Illustration of project level disclosure for the Energizing Education Program

University Name	No. of Generators	Capacity of Generators, (kW)	Annual Revenue, NGN mn	Tariff, NGN per Kwh	Direct Jobs Created	Annual GHG Emissions Reduced/ Avoided (tCO ₂ /year)
Usman Danfodyo University, Sokoto State	42	7897	346.7	60	595	4,764
Bayaro University, Kano State	33	16480	520.0	60	944	7,146
Abubakar Tafawa Belewa University, Bauchi State	6	853	86.7	60	140	1,191
Federal University of Agric, Makurdi	27	2698	606.7	60	536	8,337
Federal University of Petroleum Resources, Effurun Delta State	7	1516	86.7	60	120	1,191
Federal University Nduffu- Ikwo Ebonyi State	10	804	173.4	60	108	2,382
Nnamdi Azikiwe University, Awka Anambra State	30	6284	346.7	60	992	4,764
Total	155	36532	2166.8	-	3435	29,774

Source: Federal Ministry of Environment, EEP technical report

The funding in place to complete the projects appears adequate. We note that the government's weak fiscal position, exacerbated by the oil price shock, has led to significant capital expenditure cuts and public financial management remains opaque and slow at federal, state and municipal levels. However, green bond-financed projects are likely to be more resilient to any budget cuts, given that they have been selected for strategic purposes and command strong support from the executive. The relatively small size of the pilot green

projects also suggests that funding will be forthcoming. Indeed, the National Assembly has already reduced the scope of projects to NGN10.69 billion from approximately NGN31.4 billion initially.

The methodologies used to calculate the targeted environmental results of the projects are well documented in the technical reports, and are generally based on independent approaches with demonstrable calculations.

- » For the university electrification program, emission reduction projections were calculated based on the "IFC Greenhouse Gas Reduction Accounting Guidance For Climate-Related Projects".³ For the micro-utilities program, emissions reductions were calculated using the "Gold Standard Suppressed Demand Methodology: Micro-scale Electrification and Energization".⁴ The technical report points out that the Gold Standard methodology is more appropriate for electrification activities for communities that do not have access to the national grid or with less than 50% grid availability.
- » The methodology for the afforestation program calculates net additional CO₂ sequestered per year, using more generalized assumptions for sequestration rates and baseline carbon stocks in the northern and southern regions of the country.

The federal government has received pre-issuance assurance from DNV GL that the green notes are compliant with the CBI's Climate Bond Standard Version 2.1. It expects to receive a post-issuance review within 12 months. The issuer is also seeking to obtain a formal certification letter from the CBI. In order to meet the CBI certification criteria, the government has already removed two university gas projects from the eligible green projects, and has applied a minimum threshold of 85% of electricity to be generated from solar energy resources.

Factor 3: Disclosure on the Use of Proceeds	Yes	No
Description of green projects, including portfolio level descriptions, actual and/or intended	●	
Adequacy of funding and/or strategies to complete projects	●	
Quantitative and/or qualitative descriptions for targeted environmental results	●	
Methods and criteria, both qualitative and quantitative, for calculating performance against targeted environmental results	●	
Issuer relies on external assurances: Second Party reviews, audits and/or third party certifications	●	
Factor Score	1	

Management of Proceeds

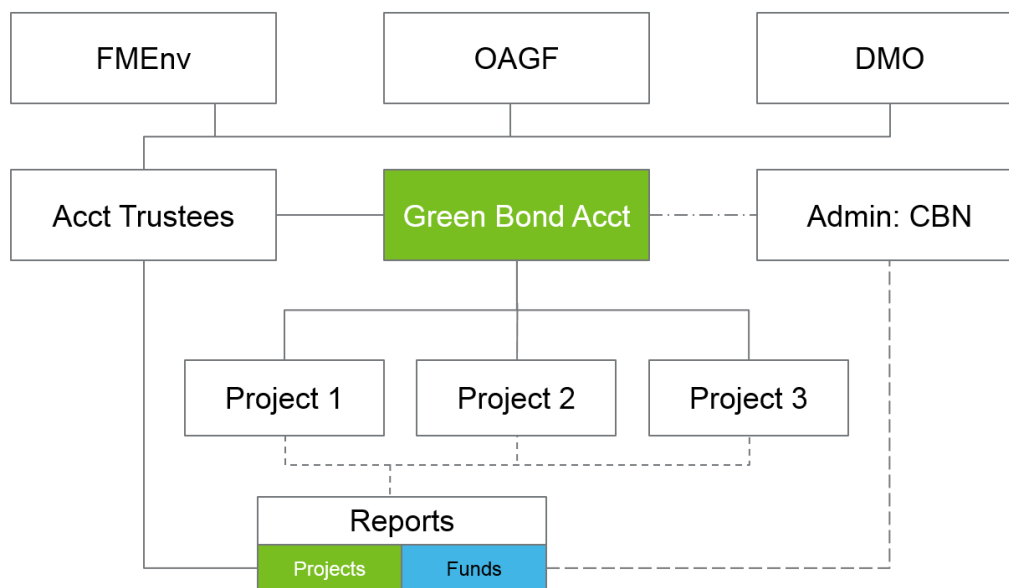


The Nigerian authorities have adopted a clear internal process and formal set of administrative policies designed to manage the segregation and tracking of proceeds (Exhibit 6). This administrative process will be overseen by the FMEnv, DMO and the Office of the Accountant-General of the Federation (OAGF).

Under these compliance requirements, proceeds will be initially credited into a centralized green bonds proceeds account held at the Central Bank of Nigeria (CBN). Upon confirmation of the approved amounts, which will include details of the implementing MDAs and project codes, the funds will be transferred to individual sub-accounts for payment purposes. As green bond proceeds are disbursed, corresponding amounts will be adjusted from the sub-accounts on a regular basis.

Exhibit 6

Internal process adopted for management of proceeds



Source: Nigerian Federal Ministry of Environment

Any unallocated proceeds will be held in accordance with the government's normal liquidity management policy, which comprises investments in cash, short-term deposits and other short-term liquidity instruments.

In order to reconcile planned investments with actual allocations, the implementing MDAs will be responsible for preparing quarterly implementation reports for review. A consolidated report, including statements from both the centralized account and sub-accounts, will be submitted to the DMO and OAGF thereafter.

In the event of a misapplication or diversion of proceeds, any additional utilization of funds will be prohibited until the issue is resolved. And at the end of the fiscal year, any unutilized funds will be rolled over to the next year on the condition that the project is still ongoing.

An area of slight weakness is the lack of an unequivocally independent internal audit of the centralized and sub-accounts. We note that the tracking of bond proceeds will be audited by the OAGF. However, the OAGF is also one of three institutions that will oversee the management and disbursement of proceeds, including opening sub-accounts for each project and transferring funds. This suggests that there is not a complete separation of duties between the institutions responsible for authorizing and accounting for the green bond proceeds. In addition, the government does not intend to employ an externally appointed auditor (unlike other public finance issuers including the government of France, for example).

Factor 4: Management of Proceeds	Yes	No
Bond proceeds are segregated and separately tracked on an accounting basis or via a method by which proceeds are earmarked	●	
Application of proceeds is tracked by environmental category and project type	●	
Robust process for reconciling planned investments against actual allocations	●	
Clear eligibility rules for investment of cash balances	●	
Audit by external organization or independent internal audit unit		●
Factor Score	2	

Ongoing Reporting and Disclosure



In addition to the quarterly implementation reports submitted internally, the government has committed to biannual reporting, initially within one year of the issuance and subsequently until full allocation of the proceeds. Furthermore, it has signaled its intention to provide ongoing disclosure over the life of the bond, and potentially afterwards given that green project metrics will be used to track the annual performance of Nigeria's NDC targets, which run until 2030. While the NDC targets will be reported on an aggregate basis, the authorities have indicated that reporting on the green bonds will be provided at a project level. The government has also indicated that the annual reports will be segregated by the relevant green bond and, as such, subsequent issuances will be covered in separate annual reporting.

Reporting, which will be made publicly available on the government's website (www.environment.gov.ng), will provide details on the amount of allocated and unallocated funds at the time of publication, along with the economic, environmental and social (where relevant) impacts attributed to each green project. Performance metrics are likely to include total greenhouse gas (GHG) emissions avoided for both the renewable energy and afforestation projects; total area of planted or preserved forests (afforestation); as well as total jobs created and taxes generated (both).

It is expected that ongoing reporting and disclosure will meet the requirements of both the CBI's Climate Bond Standards and the Nigerian Stock Exchange.

Independent of the federal government's ongoing reporting commitment, the Central Bank of Nigeria will also provide periodic reports on the green bonds proceeds account and the use of proceeds.

Factor 5: Ongoing Reporting and Disclosure	Yes	No
Reporting and disclosure post issuance provides/to be provided detailed and timely status updates on projects	●	
Ongoing annual reporting is expected over the life of the bond	●	
Disclosures provide granular detail on the nature of the investments and their expected environmental impacts	●	
Reporting provides/to be provided a quantitative and/or qualitative assessment of the environmental impacts actually realized to-date	●	
Reporting includes/to include quantitative and/or qualitative explanation of how the realized environmental impacts compare to projections at the time the bonds were sold	●	
Factor Score	1	

About the Government of Nigeria

Nigeria is the largest economy in Africa, generating a GDP of \$405.9 billion, in nominal terms, last year. The country is also the continent's most populous, with an estimated population of over 180 million.

The Government of Nigeria's (B2 stable) credit profile is supported by the country's substantial oil and gas assets. Although the government is highly dependent on hydrocarbon revenues, the oil and gas sector represents less than 10% of GDP. The credit profile is constrained by an underdeveloped revenue base, a very low level of institutional strength and a fractious political landscape.⁵

The stable outlook on the country's credit rating reflects the low likelihood of a shock occurring that would further impair Nigeria's economic and fiscal strength. External vulnerabilities have receded, supported by the rebound in oil production. The current account is projected to remain in surplus, and reserves will be boosted through external borrowings and increased foreign capital inflows. Medium-term growth prospects are also credit supportive.

Nigeria has been actively engaged in international climate policy negotiations since it became a party to the UNFCCC in 1994. The country is host to a number of clean development mechanism projects and projects funded by the Adaptation Fund as established by the Kyoto Protocol in 2007. The government's Vision 20:2020 economic growth plan, published in 2009, recognized climate change as a potential driver of "damaging and irrecoverable effects on infrastructure, food production and water supplies, in addition to precipitating natural resource conflict" and a threat to sustainable growth in the coming decades.

Moody's Green Bond Assessment (GBA)

Moody's GBA represents a forward-looking, transaction-oriented opinion on the relative effectiveness of the issuer's approach to manage, administer and allocate assets to, and report on, environmental projects financed by proceeds from green bond offerings. GBAs are expressed using a five-point relative scale, ranging from GB1 (Excellent) to GB5 (Poor). A GBA does not constitute a credit rating.

Moody's Related Research

Methodology:

- » [Green Bonds Assessment \(GBA\)](#), March 30, 2016

Credit Opinion

- » [Government of Nigeria - B2 stable: Update following downgrade to B2 from B1, outlook stable](#), November 7, 2017

Sector In-Depth:

- » [Green Bonds - Global: Full-year issuance on course to exceed \\$120 billion in 2017](#), November 9, 2017
- » [Green Bond Assessments - Global: Issuers exhibit strong organizational frameworks but differ on disclosure](#), September 6, 2017
- » [Renewable Energy - Global: Falling cost of renewables reduces risks to Paris Agreement compliance](#), September 6, 2017
- » [Environmental Risks: Shift in US Climate Policy Would Not Stall Global Efforts to Reduce Carbon Emissions](#), February 16, 2017
- » [Environmental Risks - Sovereigns: How Moody's Assesses the Physical Effects of Climate Change on Sovereign Issuers](#), November 7, 2016
- » [Cross Sector - Global: Moody's Approach to Assessing the Credit Impacts of Environmental Risks](#), November 30, 2015
- » [Environmental Risks: Heat Map Shows Wide Variations in Credit Impact Across Sectors](#), November 30, 2015

To access any of these reports, click on the entry above. Note that these references are current as of the date of publication of this report and that more recent reports may be available. All research may not be available to all clients.

Endnotes

- 1 See [Government of Poland: Issuance of World's First Sovereign Green Bond Supports Poland's Energy and Investor Diversification Efforts](#), December 2016 and [Government of France: Sizeable and Long-Dated Green Bonds Improve Market's Liquidity](#), January 2017.
- 2 See http://unfccc.int/paris_agreement/items/9444.php.
- 3 See [IFC Greenhouse Gas Reduction Accounting Guidance For Climate-Related Projects, International Finance Corporation](#), May 2017.
- 4 See [The Gold Standard Suppressed Demand Methodology: Micro-scale Electrification and Energization](#), May 2013.
- 5 See [Government of Nigeria - B2 stable: Update following downgrade to B2 from B1, outlook stable](#), November 2017

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