**AFRICAN DEVELOPMENT BANK**

**ADB/BD/WP/2018/259**
**16 November 2018**
**Prepared by: PESR/PERN/RDNG**
Original: English

**Probable Date of Board Presentation**
**29 November 2018**

**FOR CONSIDERATION**

# MEMORANDUM

**TO : THE BOARD OF DIRECTORS**

**FROM : Vincent O. NMEHIELLE**
**Secretary General**

**SUBJECT : NIGERIA – NIGERIA ELECTRIFICATION PROJECT***

**ADB LOAN OF USD 150 MILLION**
**AGTF LOAN OF USD 50 MILLION**

Please find attached the Appraisal Report on the above-mentioned loan proposal.

The Technical Annexes will be distributed separately.

The Outcome of Negotiations and the Draft Resolutions will be submitted as an addendum.

**Attach.:**

**cc. : The President**


| Questions on this document should be referred to: | | | |
|---|---|---|---|
| **Mr. E. FAAL** | **Senior Director** | **RDNG** | **Extension 7754** |
| **Mr. O. NAKOULIMA** | **Director** | **PERN** | **Extension 4035** |
| **Mr. W. SHONIBARE** | **Director** | **PESR** | **Extension 4030** |
| **Mr. L. LAWSON ZANKLI** | **Country Operations Manager** | **RDNG** | **Extension 7751** |
| **Mr. E. NEGASH** | **Division Manager** | **PERN.1** | **Extension 3931** |
| **Ms. R. MSHANA** | **Team Leader** | **PESR.1** | **Extension 4370** |

SCCD :C.H.

# AFRICAN DEVELOPMENT BANK

## PROJECT: NIGERIA ELECTRIFICATION PROJECT

## COUNTRY: NIGERIA

## PROJECT: APPRAISAL REPORT

*Date: November 2018*

| | | | |
|---|---|---|---|
| Project Team | Task Manager | Rhoda L. Mshana, Chief Power Sector Regulations Specialist | PESR1 |
| | Co Task Manager | Antony Karembu, Principal Investment Officer | PERN1 |
| | | Adele Boadzo, Young Professional | PERN1 |
| | | Chigoziri Egeruoh, Chief Power Engineer | PESD2/ RDNG |
| | | Chukwudozie Okpalaobieri, Energy Sector Policy & Regulations Specialist | PESR1/ RDNG |
| | | Adwoa Ayisi-Salawou, Legal Consultant | PGCL1 |
| | | Abba Usman Jaafar, Principal Procurement Officer | RDNG/SNFI |
| | | Yakubu Rabiu Bako, Disbursement Assistant | RDNG |
| | | Devinder Goyal, Chief Regional Financial Management Coordinator | RDNG/ SNFI |
| | | Anthony Simpasa, Lead Economist | ECCE/RDNG |
| | | Arkins Kabungo, Senior Financial Analyst | PESR2 |
| | | Uche Duru, Environmental Officer | SNSC/ RDGS4 |
| | | Sohna Ngum, Gender Consultant | AGHC1 |
| | | Emmanuel Biririza, Renewable Energy Expert / Mini-grid specialist | PERN1 |
| | | Rahul Barua, Energy Access Expert | PERN1 |
| | | Nicolas Miyares, Consultant | PESR.1 |
| | Sector Manager | Callixte Kambanda | PESR1 |
| | Sector Manager | Engeda Negash | PERN1 |
| | Sector Director | Wale Shonibare | PESR |
| | Sector Director | Ousseynou Nakoulima | PERN |
| | Nigeria Operations Manager | Laté Lawson Zankli | RDNG |
| | Nigeria Senior Director | Ebrima Faal | RDNG |
| | | | |
| Peer Reviewers | Jeff Michael Felten, Mini-Grid Specialist | | PERN |
| | Fatma Ben Abda, Principal Distributed Energy Solutions Specialist | | PERN |
| | Ibrahima Konate, Chief Power Engineer | | RDGW |
| | Alemayehu Wubeshet-Zegeye, Chief Power Engineer | | RDGE |
| | Khaled El-Askari, Principal Energy Officer | | RDGN |

**AFRICAN DEVELOPMENT BANK**





# NIGERIA

# NIGERIA ELECTRIFICATION PROJECT

# APPRAISAL REPORT

**PESR/ PERN/ RDNG**

November 2018

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## Currency equivalents

*As of October2018*

| | | |
|---|---|---|
| UA 1 | = | USD 1.3952 |

## Fiscal year

1 January – 31 December

## Weights and measures

| | | |
|---|---|---|
| 1 metric tonne | = | 2204 pounds (lbs) |
| 1 kilogramme (kg) | = | 2.200 lbs |
| 1 metre (m) | = | 3.28 feet (ft) |
| 1 millimetre (mm) | = | 0.03937 inch (“) |
| 1 kilometre (km) | = | 0.62 mile |
| 1 hectare (ha) | = | 2.471 acres |

# Acronyms and Abbreviations

| | | | |
|---|---|---|---|
| ADB/AfDB | African Development Bank | MDAs | Ministries, Departments and Agencies |
| ADF | African Development Fund | MDBs | Multilateral Development Banks |
| AFD | French Development Agency (Agence Francaise de Developpement) | MDGs | Millennium Development Goals |
| ATC&C | Aggregate Technical Commercial and Collection | MDP | Market Development Program |
| BPE | Bureau of Public Enterprise | MIC | Middle Income Country |
| CBN | Central Bank of Nigeria | MIGA | Multilateral Investment Guarantee Agency |
| CSP | Country Strategy Paper | MOF | Ministry of Finance |
| DFID | Department for International Development, UK | MSME | Micro Small and Medium-scale Enterprise |
| DISCO | Distribution Company | MSMEs | Micro-Small and Medium-sized Enterprises |
| EC | European Commission | MTEF | Medium Term Expenditure Framework |
| ECOWAS | Economic Community of West African States | MWh | Megawatt Hour |
| EEP | Energising Education Program | MYTO | Multi-Year Tariff Order |
| EMP | Environmental Management Plan | NBET | Nigerian Bulk Electricity Trading Company |
| EPC | Engineering, Procurement and Construction | NEP | Nigeria Electrification Program |
| ERGP | Economic Recovery and Growth Plan | NERC | Nigerian Electricity Regulatory Commission |
| ERGP | Economic Recovery and Growth Plan | NESP | Nigerian Energy Support Programme |
| ESIA | Environmental and Social Impact Assessment | NGN | Naira |
| ESMF | Environmental and Social Management Framework | NIPP | National Integrated Power Project |
| ESMF | Environmental and Social Management Framework | PAF | Payment Assurance Facility |
| ESMP | Environmental and Social Management Plan | PAR | Project Appraisal Reports |
| EU | European Union | PCN | Project Concept Note |
| FGN | Federal Government of Nigeria | PCR | Project Completion Report |
| FM | Financial Management | PDO | Project Development Objectives |
| FMOE | Federal Ministry of Environment | PHCN | Power Holding Company of Nigeria |
| FMOPWH | Federal Ministry of Power, Works and Housing | PIU | Project Implementation Unit |
| FX | Foreign Exchange | PPA | Power Purchase Agreement |
| GDP | Gross Domestic Product | PRG | Partial Risk Guarantee |
| GENCO | Generation Company | PSRP | Power Sector Recovery Plan |
| GHG | Greenhouse gas | RAPs | Resettlement Action Plans |
| GIZ | German Corporation for International Cooperation | REA | Rural Electrification Agency |
| GMG | Green Mini Grid | RESIP | Rural Electrification Strategy and Implementation Plan |
| GWh | Gigawatt Hour | RPF | Resettlement Policy Framework |
| IBRD | International Bank for Reconstruction and Development | SEFA | Sustainable Energy Fund for Africa |
| IDA | International Development Association | SHS | Solar Home System |
| IFC | International Finance Corporation | TA | Technical Assistance |
| IFMIS | Integrated Financial Management Information Systems | TCN | Transmission Company of Nigeria |
| IFRS | International Financial Reporting Standards | TEM | Transition Electricity Market |
| IMT | Implementation Monitoring Team | TSA | Treasury Single Account |
| IPP | Independent Power Producer | UA | Unit of Account |
| ISS | Integrated Safeguard Systems (AfDB) | USAID | United States Agency for International Development |
| JICA | Japan International Cooperation Agency | USTDA | United State Trade and Development Agency |
| LCDP | Least Cost Development Plan | WB | World Bank |
| LGA | Local Government Area | WBG | World Bank Group |
| M&E | Monitoring and Evaluation | | |

## PROJECT INFORMATION

### Client's Information

**Borrower:** Federal Republic of Nigeria
**Executing Agency:** Federal Ministry of Power, Works and Housing (FMOPWH)
**Implementing Agency** Rural Electrification Agency (REA)

### Financing Plan

| Source | Amount (USD) | Instrument |
|---|---|---|
| African Development Bank (ADB) | 150 million | loan |
| Africa Growing Together Fund (AGTF) | 50 million | loan |
| **Total costs** | **200 million** | |

### Key Financing Information

| Institution | AFDB | AGTF |
|---|---|---|
| Currency | United-States Dollars (USD) | United-States Dollars (USD) |
| Loan Type | Fully Flexible Loan | Fully Flexible Loan |
| Maturity | Up to 25 years inclusive of Grace Period | Up to 25 years inclusive of Grace Period |
| Grace period | Up to 8 years | Up to 8 years |
| Interest Rate | Base Rate + Funding Cost Margin + Lending Margin + Maturity Premium<br>This Interest Rate will be floored to zero | Base Rate + Funding Cost Margin + Lending Margin + Maturity Premium<br>This Interest Rate will be floored to zero |
| Base Rate | Floating Base Rate (6 month LIBOR reset each 1st February and 1st August)<br>A free option to fix the Base Rate is available | Floating Base Rate (6 month LIBOR reset each 1st February and 1st August)<br>A free option to fix the Base Rate is available |
| Lending Margin | 80 basis points (0.8%) per annum | 80 basis points (0.8%) per annum |
| Maturity Premium | Function of Average Maturity | Function of Average Maturity |
| Front-end fees | 0.25% of the total amount of the Loan shall be due on entry into force of the Loan, and payable at the earliest of, (i) up to 60 days from the Date of entry into force of the Loan, or (ii) at the time of first disbursement. | 0.25% of the total amount of the Loan shall be due on entry into force of the Loan, and payable at the earliest of, (i) up to 60 days from the Date of entry into force of the Loan, or (ii) at the time of first disbursement. |
| Commitment fees | 0.25% per annum of the undisbursed amount. Commitment fees start accruing 60 days after signature of the loan agreement and are payable on Payment Dates | 0.25% per annum of the undisbursed amount. Commitment fees start accruing 60 days after signature of the loan agreement and are payable on Payment Dates |
| Option to convert the Base Rate | In addition to the free option to fix the floating Base Rate, the Borrower may reconvert the fixed rate to floating or refix it on part or full disbursed amount. Transaction fees are payable. | In addition to the free option to fix the floating Base Rate, the Borrower may reconvert the fixed rate to floating or refix it on part or full disbursed amount. Transaction fees are payable. |

| | | |
|---|---|---|
| Option to cap or collar the Base Rate | The Borrower may cap or set both cap and floor on the Base Rate to be applied on part or full disbursed amount. Transaction fees are payable. | The Borrower may cap or set both cap and floor on the Base Rate to be applied on part or full disbursed amount. Transaction fees are payable. |
| Option to convert loan currency | The Borrower may convert the loan currency for both undisbursed and/or disbursed amounts in full or part to another approved lending currency of the Bank. Transaction fees are payable. | This option not applicable to the AGTF financing |
| Financial internal rate of return, net percent value (base case) | <u>Mini grid and productive appliance component:</u><br>FIRR: 21% FNVP: NGN 9 billion<br><br><u>Energizing education component</u><br>FIRR: 5% FNPV: NGN 0.3 billion | |
| Economic internal rate of return (base case) | EIRR: 95%<br>ENPV: NGN 517 billion | |

| **Timeframe – Main Milestones (expected)** | |
|---|---|
| Concept Note approval | September 2018 |
| Board approval | November 2018 |
| Loan signing | January 2019 |
| Launching | February 2019 |
| Effectiveness | March 2019 |
| Closing Date | December 2023 |
| Project Completion Report | June 2024 |

## PROJECT SUMMARY

| | |
|---|---|
| **Project Overview** | The Nigeria Electrification Project (NEP or the "Project") is a nationwide initiative to be implemented by the Rural Electrification Agency (REA) aimed at delivering energy access to un- and underserved communities in Nigeria. The Project will provide electricity to households, small-to-medium-sized enterprises, and public institutions in a least-cost and timely manner through off- and mini-grid solutions. NEP's objective is to provide over 500,000 people with access to affordable sources of electricity.<br><br>NEP comprises four components: (i) **Component 1. Solar Hybrid Mini-Grids for Rural Economic Development:** Funding the rollout of a minimum subsidy tender for mini-grids in 250 sites across six geopolitical zones in the country; (ii) **Component 2. Productive Appliances and Equipment for Off-Grid Communities:** Funding performance-based grants to both mini-grid and stand-alone solar installation companies that increase the number of productive appliances in their operations; (iii) **Component 3. Energizing Education (Phase 3):** Financing the installation of dedicated power systems for eight federal universities across the country's six geopolitical zones; and (iv) **Component 4. Institutional Capacity Strengthening:** Providing technical assistance and capacity building to REA and other relevant stakeholders to support national rural electrification scale-up activities. |
| **Needs Assessment** | The Project supports the Federal Government of Nigeria's (FGN) goal to increase electricity access across the country as defined in the national development agenda. Access to energy is low, with approximately 80 million people lacking access to sustainable and affordable sources of electricity. The national electrification rate is 55% and the rural electrification rate is only 39%. To achieve universal access to electricity by 2030, Nigeria will need to connect between 500,000 to 800,000 households per year. Both grid extension and off-grid solutions will be needed to achieve this target. However, given the myriad issues that have hampered the development and modernization of the country's on-grid infrastructure, off-grid solutions are likely to be the most formidable means to electrifying the rural population of Nigeria in the medium term. |
| **Project Outcomes** | The Project will contribute to: (i) more than 500,000 people obtaining access to electricity (approx. 105,000 households); (ii) approximately 76.5 MW in increased installed power generation capacity (of which, 68 MW will be from solar generation); (iii) eight universities obtaining access to reliable sources of energy; (iv) 20,000 Micro-Small and Medium- sized Enterprises (MSMEs) supported/supplied with productive use appliances and equipment; and (iv) the avoidance of 1.69 million tons of $CO_2$ emissions. |
| **Bank's Added Value** | The Bank's intervention of USD 150 million is expected to leverage additional resources from the private sector and create a vibrant market for mini-grid and off-grid energy solutions in the long-term. Project implementation will be coordinated with ongoing activities that the Bank is undertaking in the private sector. The Bank is in the process of establishing financing instruments and facilities that seek to de-risk private investments in mini–grids, stand-alone and decentralized solar power systems in the country. |
| **Institutional Development and Knowledge Building** | NEP will substantially strengthen the REA through the deployment of off-grid and mini-grid projects, which have seen limited penetration in Nigeria to date. It is likely that REA in Nigeria will become the most advanced rural electrification/energy agency on the continent with respect to decentralized renewable energy systems as a result of this ambitious project. From a knowledge-building perspective, the Project introduces uniquely designed and innovative market acceleration instruments that catalyze the development of decentralized renewable energy access solutions not only in Nigeria, but across Sub-Saharan Africa. |

## Results Based Logical Framework

**Country and project name:** NIGERIA – NIGERIA ELECTRIFICATION PROJECT
**Purpose of the project:** To increase access to electricity services for households and micro, small and medium enterprises

| RESULTS CHAIN | | PERFORMANCE INDICATORS | | | MEANS OF VERIFICATION | RISKS/MITIGATION MEASURES |
|---|---|---|---|---|---|---|
| | | Indicator (including core sector indicator) | Baseline 2017 | Target 2023 | | |
| IMPACT | Increased access to electricity | National electrification rate | 55% | 75% | National Statistics FMoPWH | **Risk**: Shortage of financing resources<br>**Mitigation**: Strong government support to creating an enabling environment for private sector investment in mini- and off-grid electrification |
| OUTCOMES | Increased Installed Power Generation Capacity | Total generation capacity of additional capacity installed by NEP | 0 | 76.5 MW | - REA<br>- Progress reports | **Risk** – Power sector sustainability<br>**Mitigation** – Government has shown commitment to strengthening and reforming the power sector through PSRP. |
| | Increased Renewable Energy (Solar) Composition | Total solar generation capacity installed by NEP | 0 | 68 MW | | **Risk** – Technology risk; promotion of new business model on a large scale in the country<br>**Mitigation** – Significant market data has been collected to allow for a well-informed implementation. REA, the implementing agency, has been recently re-organized, and has set up a team that has the relevant experience in procurement, commercial/ financial management, environmental and social assessments on min-grid development and deployment. |
| | Productive uses of electricity increased | No. of MSMEs supported with productive appliances and equipment (% female headed) | 0 | 20,000 (30%) | | |
| | | Percentage of the funds disbursed for Component 2 allocated to energy business that are targeting women owned MSMEs and activities | 0 | 20% | | |
| | Increased participation of women and youth in the energy access solutions sector | Number of women and youth targeted to supply and benefit from energy access solutions | 0 | 50 | - | **Risk –** NERC licensing requirements impacting implementation timeline<br>**Mitigation:** NERC has established regulations and technical standards regarding mini-grids and SHS providers in the sector. |
| OUTPUTS | Mini-grid and off-grid energy access solutions deployed under NEP | Total installed MWs from mini grids | 0 | 57 MW | - REA<br>- Project Quarterly Progress Reports<br>- Odyssey Platform | **Risk –**Timely completion of Environmental Impact Assessment requirement for each site, impacting implementation timeline<br>**Mitigation** – E&S activities are well advanced and frameworks have already been completed. The sites have been pre-identified and so it is expected this will reduce time taken to develop the ESMF. |
| | | Number of solar PV-powered productive appliances and equipment installed | 0 | 24,500 | | |
| | | No. of households provided with access to electricity | 0 | 105,000 | | **Risk** – Implementation challenges due to capacity constraints of the envisaged PIU |

| | | | | | | |
|---|---|---|---|---|---|---|
| | | (by mini-grids) (of which female headed) | | | | **Mitigation** – Early engagement with REA has proven that they have strong capacity in managing and implementation of the rural electrification projects through data collections and management. The TA component of NEP will cover additional support for the PIU, details of which will be agreed during appraisal.<br><br>**Risk – Quality Risk.** There is a risk that productive appliances and equipment provided to businesses are inefficient and not fit to purpose.<br>**Mitigation:** This risk will be mitigated by setting efficiency standards for appliances/equipment, developing a list of approved appliances/equipment, testing and certification of appliances/equipment, training and capacity building on topics of energy efficiency and technology certification. |
| | | Number of universities energized | 0 | 8 | - REA<br>- Progress Reports | |
| | Increased specialized skills and knowledge of University staff | No. of staff trained in energy efficiency, utility management, operations & maintenance and demand planning (of which % female) | 0 | 80<br>(30% female) | | |
| | Employment created | No. of temporary and permanent jobs created (% female) | 0 | 25,000<br>(30% female) | | |
| | Increased institutional capacity on technical and commercial aspects of rural electrification under NEP | Number of REA staff trained on advanced technical and commercial aspects of mini- and off-grid solutions (% female) | 0 | 15<br>(30%) | | |
| | Increased capacity of women and youth in renewable energy | Number of women and youth trained on RE technologies and business development related to energy access solutions | 0 | 30 | | |
| | | Percentage of students trained at university training centers (Component 3) on power plant maintenance that are female | 0 | 20% | | |
| | Increased capacity on addressing gender components of energy actions | Number of staff in public institutions sensitized on gender responsive energy policy and implementation | 0 | 20 | | |

| **COMPONENTS** | **INPUTS** |
|---|---|
| Component 1: Mini-grid systems installed in 250 sites<br>Component 2: 24,500 productive use solar PV appliances installed<br>Component 3: Mini-grid systems installed in eight federal universities<br>Component 4: Institutional capacity strengthening provided to REA and ecosystem | - AfDB: USD 150 million<br>- AGTF: USD 50 million<br>- Private Sector (leveraged): USD 250 million |

# Project Timeframe

| Year | | 2018 | | | | 2019 | | | | 2020 | | | | 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quarter | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| **1. Project approval** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **2. Effectiveness** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **3. Project implementation** | | | | | | | | | | | | | | | | | | | | | | | | | |
| **3.1** | **Component 1: Mini-grid Subsidy Tender** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1.1 | Launch Geospatial assessments | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1.2 | Conduct community surveys | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1.3 | Appoint Mini-grid Transaction Advisor | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1.4 | Appoint Grants Administrator | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1.5 | Bidding process for developers | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1.6 | Award contracts | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1.7 | Mini-grid construction (civil works, electrical, mechanical installation, testing, commissioning) | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.1.8 | Verification and disbursement of subsidies | | | | | | | | | | | | | | | | | | | | | | | | |
| **3.2** | **Component 2: Productive Use Equipment** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.2.1 | Market research and community engagement | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.2.2 | Appoint Grants Administrator | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.2.3 | Bidding process | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.2.4 | Award contracts | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.2.5 | Productive use equipment/ appliances deployment | | | | | | | | | | | | | | | | | | | | | | | | |

| Year | | 2018 | | | | 2019 | | | | 2020 | | | | 2021 | | | | 2022 | | | | 2023 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Quarter | | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 | 1 | 2 | 3 | 4 |
| 3.2.6 | Verification and disbursement of subsidies | | | | | | | | | | | | | | | | | | | | | | | | |
| **3.3** | **Component 3: Energizing Education** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.3.1 | Appointment of consultant for system design (power plants, distribution lines, substation, streetlights, learning centre) | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.3.2 | Bidding process | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.3.3 | Award contracts | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.3.4 | Construction of power plants, distribution line, substation, streetlights, learning centre | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.3.5 | Monitoring and evaluation | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.3.6 | Training (Operations & maintenance, utility management) | | | | | | | | | | | | | | | | | | | | | | | | |
| **3.4** | **Component 4: Institutional Capacity Strengthening** | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.4.1 | Project Management Unit Support (PMU) (Staff, equipment additions, operational costs) | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.4.2 | Capacity building workshops | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.4.3 | Audit | | | | | | | | | | | | | | | | | | | | | | | | |
| 3.4.4 | Supervision | | | | | | | | | | | | | | | | | | | | | | | | |
| **4. Last disbursement** | | | | | | | | | | | | | | | | | | | | | | | | | |

# REPORT AND RECOMMENDATION OF THE MANAGEMENT OF THE AFRICAN DEVELOPMENT BANK TO THE BOARD OF DIRECTORS ON PROPOSED ADB AND AGTF LOANS TO THE FEDERAL REPUBLIC OF NIGERIA FOR THE NIGERIA ELECTRIFICATION PROJECT

Management submits the following report and recommendation for: (i) a proposed loan of One Hundred and Fifty Million United States Dollars (USD 150 million)) from the resources of the AfDB and (ii) a proposed loan of Fifty Million United States Dollars (USD 50 million) from the resources of the Africa Growing Together Fund (AGTF) to finance the Nigeria Electrification Project ("NEP" or the "Project").

## I – STRATEGIC THRUST & RATIONALE

### *1.1. Project linkages with country strategy and objectives*

1.1.1 Nigeria is the largest country in Africa with a population of 191 million, accounting for nearly 18 percent of the population of Sub-Saharan Africa. The rate of population growth is nearly 3.0 percent per annum, meaning that the country will nearly double in size in terms of population within the next two decades. This will have serious implications for a country that is already the world capital – overtaking India in February 2018 – in extreme poverty. Approximately 82 million Nigerians live in extreme poverty, which accounts for 44 percent of the country's population. With its population growth rate likely to remain unabated in the medium-term, Nigeria's sole means to combatting rising levels of extreme poverty is by growing its economy at higher rates.

1.1.2 However, economic growth has been anaemic in Nigeria since oil prices plunged beginning in 2014, although recent upticks in global commodities prices have resulted in a slight recovery. Over the course of 2005 – 2014, the Nigerian economy, buttressed by oil prices averaging at approximately USD 86 per barrel, grew at an average of 6 percent per year. However, oil prices declined by 48 percent year-on-year in 2014-2015 and remained at approximately 50 percent of their 2005-2014 high between the years 2015-2017. This has had serious implications for a country in which income from oil exports comprises more than two-thirds of the government's budget revenue and 90 percent of its foreign exchange earnings, while the oil and gas sector overall accounts for approximately 12 percent of the country's GDP. GDP growth declined precipitously in 2014, with Nigeria entering into a recession in 2016 with GDP growth registering at -1.58 percent – its first annual contraction in GDP since 1984. Although Nigeria exited its recession in 2017 on the heels of higher oil prices—which reached a four year peak in October 2018 at USD 86/barrel—economic growth, with a registered GDP growth of 0.9% in 2017, has not been strong enough to keep up with the country's unabated population growth. The country's power sector, which is beset with inefficiencies and inadequate transmission infrastructure, acts as a major obstacle to higher economic growth rates. Over a sixteen-year period from 2000 to 2016, the total loss to Nigeria's GDP caused by poor electricity is estimated at approximately USD 470 billion, or nearly USD 29 billion per year.

1.1.3 In light of the country's economic situation, the government of Nigeria launched the National Economic Recovery and Growth Plan (ERGP) for the period 2017-2020 in March 2017. The ERGP sets out to restore macroeconomic stability in the short-term and to undertake structural reforms, infrastructure investments and social sector programs to diversify the economy and set it on a path of sustained inclusive growth over the medium - to long-term period. The priority areas of action under the ERGP are: stabilizing the macroeconomic environment; achieving agriculture and food security; ensuring energy sufficiency in power and petroleum products; improving transportation infrastructure; and driving industrialization through focus on small and medium-scale enterprises.

1.1.4 In the past 16 years, the Nigerian power sector has expended approximately USD 29.6 billion with mixed results. In 2009, the Bank provided loan support of USD 155 million to the ongoing reforms in the sector looking at the entire value chain and issues surrounding gas supply. Nigeria has over 13,000

MW of installed power generation capacity, only approximately 7,000 MW is available.[1] Access to energy is low, with approximately 80 million people lacking access to electricity.[2] In absolute terms, Nigeria has the largest access deficit in Sub-Saharan Africa and the second-largest in the world, after India. The national electrification rate is 55 percent, and the rural electrification rate is only 39 percent. To achieve universal access to electricity by 2030, Nigeria would need to connect between 500,000 to 800,000 households per year. On-grid, mini-grid and off-grid solutions will be needed to provide quality services to unserved and underserved households and businesses in a timely manner.

1.1.5 Mini-grid and off-grid solutions will factor prominently in the government's ability to achieve its energy access goals. The Nigerian mini-grid and off-grid market is the largest in Africa and presents significant commercial opportunities for developers of stand-alone systems and mini-grid solutions. A significant amount of the Nigerian economy is powered by small-scale diesel-powered generators. In fact, nearly 14 GW, or approximately double the country's available installed capacity, is generated through these inefficient and costly generation solutions. As a result, Nigerians and their businesses spend almost USD 14 billion annually on inefficient and expensive (upwards of USD 0.40/kWh) power generation. Dwellers in an indicative village in Northern Nigeria – a region of the country where access to electricity is particularly low – spend between 60 to 80 times more for each unit of useful light than a resident in New York City or London.

1.1.6 The Power Sector Recovery Plan (2017-2021), approved in March 2017 by the Federal Executive Council, is the country's current reform program with the overall goal of resetting the industry and restoring stakeholder confidence. The PSRP includes measures to improve the financial viability of sector companies, increase power supply, strengthen sector governance and contract enforcement, de-risking the sector for private investment and putting it on a path to long-term sustainability. The government will undertake financial interventions to support the establishment of a sustainable electricity tariff by 2021; technical interventions to rehabilitate and reinforce existing assets to meet baseline power supply; governance interventions to improve the perceived lack of transparency especially by market participants; and policy interventions to increase energy access through frameworks for renewable energy projects and mini-grids.

1.1.7 The Rural Electrification Strategy and Implementation Plan (RESIP), approved by the President in July 2016, aims to facilitate the entry of new market participants into the rural electricity sector, especially those from the private sector. Furthermore, it provides for diverse approaches to power project development, including a "bottom-up" approach constituting spontaneous initiatives by project proponents, as well as a "top-down" approach through organized, large-scale procurements. A Federal Ministry of Power, Works and Housing (FMoPWH) study based on geo-referenced data of population clusters and load centers concluded that an estimated 8,000 potential load centers are suitable for mini-grids powering 14 percent of Nigeria's population.

1.1.8 The REA has been authorized to implement the government's Rural Electrification Strategy and Implementation Plan (RESIP) by undertaking a number of activities (including the establishment of a Rural Electrification Fund) to finance and promote "fast and cost-effective expansion of electricity access in un-electrified rural areas evenly among the geopolitical zones in Nigeria" through on-grid, mini-grid and off-grid electrification solutions featuring renewable energy and hybrid power systems.

1.1.9 The Nigeria Electrification Project is fully aligned with the Rural Electrification Strategy and Implementation Plan and also supports the Power Sector Recovery Plan (2017-2021) objectives to increase private investment into the energy sector, including implementation of rural energy access and off-grid/mini-grid energy services.

[1] Nigeria Power Sector Recovery Plan (2017-2021)
[2] 2015/16 Living Standards Measurement Study by the Nigerian National Bureau of Statistics and the World Bank Group

## *1.2. Rationale for the Bank's involvement*

1.2.1 The Project is fully aligned with the Bank's Country Strategy Paper (CSP) for Nigeria (2013-2017 extended to 2019), supporting interventions under both Pillar 1 (supporting development of sound policy environment for social inclusion) and Pillar 2 (investing in critical infrastructure). This project is included in the recently updated CSP for Nigeria. NEP will primarily focus on increasing installed capacity and electricity access through off-grid and mini-grid solutions. The operation is consistent with the Bank's Ten Year Strategy (2013–2022), Ten Year Strategy scale-up (the "High 5s") and Energy Sector Policy. The Project additionally drives inclusive growth by creating jobs (particularly amongst women and the youth) and increasing technical skills of Nigerians to build and operate off-grid systems.

1.2.2 The implementation of NEP will be coordinated and aligned with ongoing activities that the Bank is undertaking in the country and across Africa. The Bank, through SEFA, is currently involved in the mini-grid sector in the country, through the Green Mini-Grid Market Development program (GMG MDP),[3] which supports the scale-up of investments in commercially viable GMG projects through a broad range of interventions to improve the enabling environment. The GMG MDP also seeks to remove or reduce market barriers at a regional scale and strengthen the ecosystem for the emergence of a thriving GMG sector in Sub-Saharan Africa – contributing significantly to the objectives of SEforALL and the New Deal on Energy for Africa. The program also implements the quality assurance framework to ensure quality service provisions for the mini-grid projects' implementation. GMG MDP will help to overcome some of the key barriers to increased private sector investments in mini-grids. Additionally, the Bank's Board in Q4 2018 approved a Naira equivalent of USD 10 million equity investment in the Nigeria Infrastructure Debt Fund (NIDF), a fund that provides long-term (tenors of 7-10 years) local currency loans for infrastructure projects – including in the energy sector. The Bank is also partnering with All On, a Nigerian impact investor seeded by Royal Dutch Shell, to develop a country-focused fund that will undertake equity and quasi-equity investments in Nigerian off-grid, mini-grid, and small IPP solutions. Given the budding potential of the Nigerian off- and mini-grid market, and obstacles to developing IPP solutions, this fund – tentatively titled the Nigeria Energy Access Fund (NEAF) – will mostly target projects in the off- and mini-grid space. A fund manager for this fund is likely to be on-boarded by Q2 2019, with the fund achieving first close by Q4 2019 or Q1 2020.

1.2.3 Public financing of this project is necessary not only to support the FGN's efforts to expand energy access to rural areas, but also to leverage private sector financing and enable considerably de-risked opportunities for the private sector. Grid connectivity in many rural areas is not economically feasible especially given the current power sector climate in which distribution companies (DISCOs) are unlikely to make any marked differences in terms of new connections and improving the reliability of existing ones in the medium to long-term. Due to high initial CAPEX, mini-grid developers require early support, including in the form of access to demand forecasts and load assessments, to ensure commercial viability when rolling out mini-grids in rural areas un- or underserved by the grid.

## *1.3. Development partner coordination*

1.3.1 Nigeria is a middle-income country (MIC), with aid accounting for less than 3 percent of the national budget. Nevertheless, donor presence and interventions are duly recognized as necessary by the FGN and other stakeholders in the public sector. A number of development partners have been supporting the FGN in the energy sector, across the power value chain. In addition to support by the African Development Bank, current support in the sector is provided by the World Bank, European Union (EU), German Corporation for International Cooperation (GIZ), United States Agency for International Development (USAID), the UK's Department for International Development (DFID), French Development Agency (AFD), and Japan International Cooperation Agency (JICA), among others. Development partner (DP) activities in the power sector are coordinated through the Development Partner Coordination Group for the Power Sector, which is currently co-chaired by DFID

[3] A USD 3 million grant from the Sustainable Energy Fund for Africa (SEFA) for Phase 2 of the Green Mini-Grid Market Development Programme (GMG MDP) was approved in December 2017.

and the World Bank – who will handover to USAID and the African Development Bank in November 2018. The Coordination Group meets regularly to exchange information on the activities of the various donors in the sector and to discuss pertinent issues of power sector policy. The FGN participates in the meetings.

1.3.2 The proposed project is part of FGN's strategy to increase access to electricity in rural and underserved areas and is complementary to several ongoing initiatives being undertaken by the Bank and other development partners in the off-grid space. Various DPs are supporting the initial stages of project development and piloting of mini-grid programs through grants and technical assistance, including: GIZ's Nigerian Energy Support Programme (NESP), USAID's Nigerian Renewable Energy and Energy Efficiency Project (REEEP) and concessional credit (UNDP/ Bank of Industry). Structured as a technical assistance programme, NESP has worked with various sector stakeholders including the Rural Electrification Agency (REA) on electrification planning and facilitating an enabling environment for private sector development. Also established as a technical assistance facility, REEP has worked to: (i) improve access to financing for local companies in the clean energy sector, (ii) increase capacity of individuals to maintain clean energy systems, and (iii) advise government on implementing and executing legislation promoting the development of renewable energy and energy efficiency solutions in the country.

1.3.3 Through the Bank (and AGTF) investment, the Bank will leverage USD 265 million in private investment into the sub projects. The Bank has confirmed that there is significant appetite amongst the private sector for developing off-grid solutions; given the scale of demand in the market. The Green Mini-Grid Market Development Programme has been advising nearly 75 mini-grid developers and related companies in 26 African countries on implementing mini-grids. Approximately 20% of these companies are operating in or seeking to enter the Nigerian market. Furthermore, the World Bank has registered private sector interest from companies such as Engie, Tesla, General Electric, PowerHive, as well as from larger local companies such Green Village Electric (GVE), Nayo Tropical Technology and Rubitech.

1.3.4 The Bank has identified larger Nigerian banks that have been developing investment teams with the capacity to engage the renewable and off-grid energy sector, and are interested in financing more projects in the sector as opportunities arise. Additionally, a number of complementary financing efforts exist through commercial and concessional debt and equity vehicles for energy access providers from a variety of entities, including the Facility for Energy Inclusion4, All-On, Bank of Industry (BOI), Shell Foundation, and Solar Nigeria, among others. Specific examples include BOI's, 1 billion Naira (USD 3.3 million fund) to drive the expansion of decentralized solar energy solutions through concessionary financing and AFD's SUNREF programme which extends lines of credit to Access Bank, United Bank of Africa, and the Manufacturers Association of Nigeria to finance energy efficiency and renewable energy investments in Nigeria.

# II – PROJECT DESCRIPTION

## *2.1. Project objectives and components*

2.1.1 **Overview.** The project promotes technologies and business models that are emerging in Nigeria. Components 1 and 2 are private sector led, and Bank will mobilize private sector investment by providing viability gap funding (i.e. to offset CAPEX costs for developers) and targeted results/performance-based grants for mini-grid and energy access companies. Component 3 is fully funded by the Bank for the construction of the power systems as well as operation and maintenance for at least five years. Component 4 will be used to establish an enabling environment for private sector involvement by strengthening key stakeholder institutions and the development of enabling policies and regulations.

[4] Approved in 2016, the Facility for Energy Inclusion (FEI), was developed by the Bank as a pan-African renewable energy debt fund supporting small-scale and off-grid energy solutions

2.1.2 NEP aims to support the acceleration of Nigeria's mini-grid and off-grid sector and facilitate the entry of new market participants, especially the private sector. NEP aims to catalyze the development in the off and mini-grid particularly the selected areas where energy access is a challenge. The successes of this methodology and approach will be documented and replicated across other sites by providing non-distorting market incentives to developers and community based companies expected to benefit from potential scale up taking into consideration the great potential in the market. While cognizant the market is new, initial transaction costs will be high, however, it is expected the emergence of local private players and demand for access will ensure healthy competition for the provision of energy service and potentially improve quality and reliable energy access.

2.1.3 The Project is comprised of the following four components to be financed by the Bank and AGTF and implemented by REA.

2.1.4 **Component 1: Solar Hybrid Mini-Grids for Rural Economic Development (USD 70 million).** Under Component 1, the Bank will support Round 2 of the Minimum Subsidy Tender for Mini-Grids development,[5] tendering 250 sites across the six geopolitical zones in the country. NEP will provide capital subsidies to enable mini-grid developers to operate on a commercial basis while ensuring that their tariffs are affordable to average consumers. Subsidies will be provided through a minimum subsidy tender, in which subsidies are granted to bidders with business plans requiring *the least amount of subsidy* to develop mini-grids across multiple sites and on a commercially viable basis. REA will provide market intelligence to bidders and offer partial grants for pre-investment activities under the Minimum Subsidy Tender program.

2.1.5 **Component 2: Productive Appliances and Equipment for Off-Grid Communities (USD 20 million).**[6] The Bank will fund the provision of performance-based grants (or subsidies) to both mini-grid and stand-alone solar installation companies that increase the number of productive appliances in their operations. A *pre-determined subsidy* will be paid to mini-grid and stand-alone solar installation companies upon the successful installation (and verification) of productive appliances in remote communities. Subsidy amounts will be fixed for each appliance size/level of service category and will be applied to a list of certified appliances. The performance-based grant is intended to support the incremental operational expenditures of retailing appliances alongside energy services, including: product transport; marketing and training; end-user financing: installation and end-user training; and repairs, replacements, and support.

2.1.6 **Component 3: Phase 3 of Energizing Education program (USD 100 million).** This component aims to provide affordable and sustainable power to universities and associated teaching hospitals. The Energizing Education Program (EEP) is an ongoing government program targeting 37 federal universities and seven associated university teaching hospitals across the country.[7] The Bank will provide financing for the installation of dedicated power systems in eight federal universities across the country's six geopolitical zones.

2.1.7 Training facilities will be established in each university to provide theoretical and practical power and energy training to students, faculty and relevant government agencies (suggested curriculum included in Technical Annex B2). The trainings target: REA, NERC, MoPWH staff; 80 university staff in the utilities and works departments (10 per university) and 800 students in the engineering department (100 per university), of which 30% will be female.

[5] Round 1 will be supported by the World Bank under their Nigeria Electrification Project operation which was approved in July 2018

[6] Productive use appliances/equipment include, but are not limited to: vaccine freezers, deep freezers, fridges, egg incubators. irrigation pumps, grain mills, maize shellers, rice hullers, rice polishers, cassava graters, oil presses, sewing machines, and salon haircutting kits.

[7] There are 40 Federal universities in Nigeria. Three of which already have dedicated power systems. This program includes the remaining 37 universities.

2.1.8 REA will appoint consultants through a competitive bidding process. The trainings for government officials and university staff are included in Component 4's budget, while the training for the students is included in Component 3's budget.

2.1.9 **Component 4: Institutional Capacity Strengthening (USD 10 million).** The Bank will fund (i) REA's PMU, (ii) REA's technical, management, financial and administrative staff in Abuja and staff in the six regional offices, (iii) the Grants Administrators for Components 1 and 2 of the Project, and (iv) engineering design, project management and other related support in respect of the EEP (Component 3). This Component will also support the strengthening of institutions and markets as it relates to energy access through renewables, providing technical assistance and capacity building to key stakeholders, including relevant government agencies/ministries, mini-grid developers, solar companies, universities, and providers of local finance, including local commercial banks. This component will also provide training, capacity building, and advisory services in accordance with the Gender Action Plan for the Project, which is contained in Technical Annex B9.

## *2.2. Technical solution retained, and other alternatives explored*

2.2.1 The project team carried out cost-benefit analyses on various alternatives to achieving the goals/objectives of this Project. The table below shows a few alternatives considered and the reasons for their rejection.

***Table 2.2.1.1: Project alternatives considered and reasons for rejection***

| | Alternative | Brief Description | Reasons for Rejection |
|---|---|---|---|
| **Components 1 & 2: Mini-grids & Productive Appliances/equipment** | Do nothing | Not applicable | The need for rural development is high. Power supply to rural areas is paramount to FGN. |
| | Grid extension | Support to extension and densification of existing national grid | Economically untenable for remote areas with low ability to pay and low population density |
| **Component 3: EEP** | Do nothing | Not applicable | Power needs are too dire |
| | | | Running diesel generator is expensive and not sustainable |
| | | | Power from DISCOs is unreliable |
| | Diesel power plants | Universities run multiple diesel generators to supply power. Diesel is purchased at market cost and the maintenance culture for generators is poor. | The push for more clean power sources and sustainable solutions |
| | Contract IPPs | Ask IPP's to come work with the universities with any preferred solution | Lead time to development will be long and power might not be affordable. |
| | Use hydro power resources | Most Universities have small streams and rivers running through the premises. A mini-hydro could be developed and used for power supply. | Lead time to develop hydro will be long due to lack of hydrological studies. Feasibility may also be limited by the seasonality of river flows. However, this can be developed in the future to support the solar PV for peak shaving. |

2.2.2 Despite concerns that cost-reflective tariffs for mini-grids are generally higher than tariffs for on-grid electricity, mini-grids nevertheless provide energy at costs that are significantly competitive to diesel-powered self-generation. Rural consumers generally spend a significant amount on diesel generation, and should therefore be able to pay for mini-grid services, which will provide them with more reliable electricity at lower price. Recent studies done by the Nigerian Economic Summit Group

(NESG) and Rocky Mountain Institute (RMI) audited mini-grid projects in Nigeria serving over 10 000 households across 9 states. Results of this audit indicated a levelized cost of electricity (LCOE) from small diesel generators were at least N250/kWh (US$0.71/kWh). Mini-grid tariffs in these studies averaged N200/kWh ($0.578/kWh), saving consumers at least $0.13/kWh. Financial and economic analysis for NEP mini-grids was calculated at an average of NGN150/kWh ($0.42/kWh). Further analysis indicate that the avoided cost of diesel vis a vis green mini grid is beneficial to the consumer due to potential availability of higher disposable income and improving of life conditions as a result of access to reliable and affordable electricity

## *2.3. Project Type*

2.3.1 The proposed project is part of the government's Power Sector Recovery Programme (PSRP), which aims to increase electricity access to rural and underserved communities within the country and to optimize the delivery of at least 10,000 MW (off-grid and on-grid) of operational capacity by 2020. It is a standalone project that will be financed through an ADB sovereign loan.

## *2.4. Project cost and financing arrangements*

2.4.1 The tables below summarize the financing arrangements for the aspects of the Project that are to be financed, in part, by the Bank and the Africa Growing Together Fund (AGTF). The total amount, exclusive of local taxes, is **USD 200 million**. The Bank proposes to extend an **ADB loan of USD 150 million** to finance its respective aspects of the Project, while the AGTF proposes a **loan of USD 50 million** to co-finance these same aspects of the Project with the Bank. Physical and price contingencies, estimated at 5 percent each, have been factored into the total cost. Table 2.4.1.1 breaks down costs by Component.

***Table 2.4.1.1: Project cost estimates by component (in USD million)***

| | Foreign currency costs | Local currency costs | Total cost | Percentage foreign |
|---|---|---|---|---|
| **Component 1: Minimum Subsidy Tender Fund for Mini-Grids** | 51.80 | 11.83 | 63.63 | 81% |
| **Component 2: Performance Grants for Productive Appliances and Equipment for Rural Communities** | 16.23 | 1.95 | 18.18 | 89% |
| **Component 3: Energizing Education** | 58.92 | 31.78 | 90.70 | 65% |
| **Component 4: Institutional Capacity Strengthening** | 5.67 | 3.42 | 9.09 | 62% |
| **Subtotal** | **132.62** | **48.98** | **181.60** | **73%** |
| **Physical contingency** | 6.63 | 2.45 | 9.08 | 73% |
| **Price contingency** | 6.63 | 2.45 | 9.08 | 73% |
| **Total** | **145.88** | **53.88** | **199.76** | **73%** |

2.4.2 The World Bank received approval for a USD 350 million loan to support the Project in June 2018. World Bank financing for NEP will also be split among the four aforementioned components, but will go towards different types of underlying projects/initiatives. The Bank's proposed ADB loan of USD 150 million will finance 12 percent of the overall cost of the Project. The AGTF USD 50 million loan (Certificate of Approval from the AGTF received on 10 November 2018), which will only cover aspects of the Project financed in USD, will constitute 4.12 percent of the overall cost of the Project. The Bank and AGTF contribution will finance contracts related to goods, works and services, with a

detailed list available in Annex B5. The total financing amount for the Nigeria Electrification Project[8] is USD 1.2 billion, distributed as follows:

***Table 2.4.2.1: Total amount of financing for the overall project***

| Source | Amount (USD million) | Instrument |
|---|---|---|
| African Development Bank(ADB) | 150.00 | Loan |
| **Africa Growing Together Fund (AGTF)** | 50.00 | Loan |
| **World Bank (IBRD/IDA)** | 350.00 | Loan |
| **Government of Nigeria** | 5.00 | Counterpart funding |
| Others (Private Sector) | 660.00 | Commercial financing |
| **Total costs** | **1,215.00** | |

2.4.3 The 2008 eligible expenditures policy prescribes a minimum contribution threshold for counterpart funding of 50 percent of the total project costs for AfDB countries. The proposed 0.4 percent contribution from the government to the NEP, is supported by: (i) the government's unflinching commitment to implement the PSRP and Economic Recovery and Growth Plan (2017-2020); (ii) prioritization of developing mini-grid and off-grid solutions to drive electricity access under the PSRP and EGRP; and (iii) the government's financial allocation to the power sector which imbeds the NEP as well as the current budget situation and debt levels. A detailed justification is provided in Appendix V.

2.4.4 The financing plan for the portion of the Project receiving ADB/AGTF co-financing is presented in Table 2.4.4.1. Table 2.4.4.2 and Table 2.4.4.3 summarize the categories of expenditure for the ADB and AGTF funds. Table 2.4.4.4 summarizes the project expenditure cash flows.

***Table 2.4.4.1: Financing plan for AfDB/AGTF portion of Project (in USD million)***

| Institution | Total Cost |
|---|---|
| **AfDB - ADB Loan** | 150.00 |
| **AGTF** | 50.00 |
| **Others (Private Sector)** | 250.00 |
| **Total** | 450.00 |

***Table 2.4.4.2: Summary ADB and AGTF financing by category of expenditure (in USD million)***

| Category | Foreign currency costs | Local currency costs | Total cost |
|---|---|---|---|
| **Works** | 47.85 | 22.97 | 70.82 |
| **Goods** | 77.99 | 17.02 | 95.01 |
| **Services** | 6.77 | 9.00 | 15.77 |
| **Subtotal** | **132.61** | **48.99** | **181.60** |
| **Price contingency** | 6.63 | 2.45 | 9.08 |
| **Physical contingency** | 6.63 | 2.45 | 9.08 |
| **Total** | **145.87** | **53.89** | **199.76** |

***Table 2.4.4.3: Summary category of expenditure and by financing source (in USD million)***

| Category | AFDB | AGTF | Total cost |
|---|---|---|---|
| **Works** | 51.01 | 19,81 | 70.82 |
| Goods | 71.26 | 23.75 | 95.01 |
| Services | 13.93 | 1.84 | 15.77 |
| **Subtotal** | **136.20** | **45.40** | **181.60** |
| **Physical contingency** | 6.81 | 2.27 | 9.08 |
| **Price contingency** | 6.81 | 2.27 | 9.08 |
| **Total** | **149.82** | **49.94** | **199.76** |

[8] The proposed program will be implemented by each institution as parallel financed standalone operations that will be implemented over a five year period, 2018 – 2023.

***Table 2.4.4.4: Expenditure schedule for ADB/AGTF portion of Project by Component (in USD million)***

| | 2019 | 2020 | 2021 | 2022 | 2023 | Total |
|---|---|---|---|---|---|---|
| Component 1: Minimum Subsidy Tender Fund for Mini-grids | 0 | 17.50 | 35.00 | 17.50 | 0 | **70.00** |
| Component 2: Performance Grants for Productive Appliances and Equipment for Rural Communities | 0.00 | 2.50 | 7.50 | 5.00 | 5.00 | **20.00** |
| Component 3: Energizing Education | 34.00 | 16.50 | 16.50 | 16.50 | 16.50 | **100.00** |
| Component 4: Institutional Capacity Strengthening | 5.52 | 1.12 | 1.12 | 1.12 | 1.12 | **10.00** |
| **Total** | **39.52** | **37.62** | **60.12** | **40.12** | **22.62** | **200.00** |

## *2.5. Project's target area and population*

2.5.1 Over 600,000 people, approximately 100,000 households, 70,000 MSMEs, and eight universities will receive new or improved access to electricity services as a result of the proposed Project. The Project will create an enabling environment for private sector involvement. Women across all beneficiary groups will receive increased opportunities through a range of integrated activities including collection of sex-disaggregated data, gender-targeted marketing, community outreach, and training programs that will be delivered at various levels to encourage and facilitate women to participate in the project.

2.5.2 Component 1 of NEP envisages the development of mini-grids in at least five states (Niger, Sokoto, Ogun, Plateau, Cross River States), which will later be expanded to cover sites across all six geopolitical zones in Nigeria. Component 2 will cover the same states as Component 1. Component 3 covers eight universities across eight states (Adamawa, Katsina, Nasarawa, Kogi, Imo, Rivers, Akwa Ibom, Ondo) and all six geopolitical zones.

## *2.6. Participatory process for project identification, design and implementation*

2.6.1 The teams comprising the Bank's identification, preparation and appraisal missions consulted widely with the stakeholders in the Project at both national and local levels. Development partners who are active in the energy sector were also consulted. The Bank's objectives throughout its missions was to ensure that all stakeholders and interested parties were fully informed of the Bank's proposed undertaking in relation to the Project and that all relevant concerns were documented. Stakeholders consulted included officials and representatives of (i) REA, (ii) the World Bank, (iii) Federal Ministry of Power, Works and Housing (FPMoPWH), (iv) NERC, (v) European Union (EU), (vi) German Development Agency (GIZ), (vii) Ministry of Finance (MoF), (viii) Office of the Accountant-General of the Federation (OAGF), and (ix) numerous private sector companies (i.e., Creeds Energy, A-Solar and Blue Camel Energy).

2.6.2 Stakeholder consultations on the draft versions of the Environmental Social Management Framework (ESMF) were held with relevant interested stakeholders. These were organized by the Project Implementation Unit (PIU), and included stakeholders such as: Nigerian Electricity Regulatory Commission (NERC), Federal Ministry of Environment, Federal Ministry of Power Works and Housing, National Universities Commission (NUC), Renewable Energy Association of Nigeria, University of Abuja, National Environmental Standards and Regulations Enforcement Agency (NESREA), Ministry of Women Affairs, Energy Commission of Nigeria, Social Action (Social Development Integrated Centre), and other concerned institutions. The outcomes were incorporated in the final version of the ESMF.

## *2.7. Bank Group portfolio composition and performance*

2.7.1. As at October 2018, the Bank's portfolio in Nigeria is comprised of 53 operations with a total commitment of UA 3 billion (USD 4 billion) and seven regional operations with a total commitment of UA 482.2 million. Private sector operations accounts for 58 percent of the total operations through 32 projects and is largely dominated by the financial sector (65 percent) supported through equity investments (e.g. in the Development Bank of Nigeria), Lines of Credit (LOCs), and trade finance packages. Other sectors include water supply and sanitation (10%), transport (8%), social (8%), industry (11%), agriculture (10%) and power and energy (4%). The portfolio performance in Nigeria is assessed as satisfactory with a rating of 3 (on a scale from 1 to 4).

2.7.2. On April 30, 2018, the Board approved a grant of USD 1.5 million from the Sustainable Energy Fund for Africa (SEFA) to support the Nigerian government's implementation of Phase 1 of the Jigawa 1-GW Independent Power Producer (IPP) Solar Procurement Program. This complements the Bank's notable sovereign operations in the country, including the Economic and Power Sector Reform Program (EPSERP) in 2009, the Partial Risk Guarantee (PRG) program for IPPs in 2013, and the Economic Governance, Diversification and Competitiveness Support Program (EGDCSP) in 2015. Additionally, the Bank is also considering non-sovereign lending to various private projects in the gas and solar power sectors with a total AfDB funding requirement of up to USD 500 million. The Bank has also been working closely with the World Bank and other partners on the implementation of the PSRP.

2.7.3. Currently, the Bank has one PRG program for IPPs in Nigeria, which was approved in 2013, comprising of two components: Component 1: ADF Partial Risk Guarantees (PRGs) to support selected IPPs nominated by NBET (UA 120 million) and Component 2: ADF Loan for Capacity Building for relevant institutions involved in Nigeria's power sector reform, with respect to implementation and enforcement of procurement as well as environmental and social rules and regulations. The Technical Assistance component of the PRG program has been cancelled in consultation with the FGN whose preference was to use grant resources for Technical Assistance.

2.7.4 **Lessons Learned.** The main lessons learned from the Bank's past interventions have been considered in the design of the Project, particularly with regards to addressing issues impacting loan effectiveness and project implementation. These include: (i) maintaining dialogue with the Ministry of Finance on the inclusion of the NEP in the borrowing plan and addressing emerging project implementation problems; (ii) sensitizing the National Assembly and the relevant ecosystem on the importance of the Project to facilitate better understanding and expedited approval; (iii) minimizing the prior conditions for effectiveness and first disbursement so as to mitigate project start-up delays; (iv) strengthening the institutional coordination between the Ministry of Finance, the states, the line ministry and local governments; and (v) strengthening capacity at Ministry Department Agencies on project management, and Bank rules and procedures on procurement and disbursement.

## *2.8. Key performance indicators*

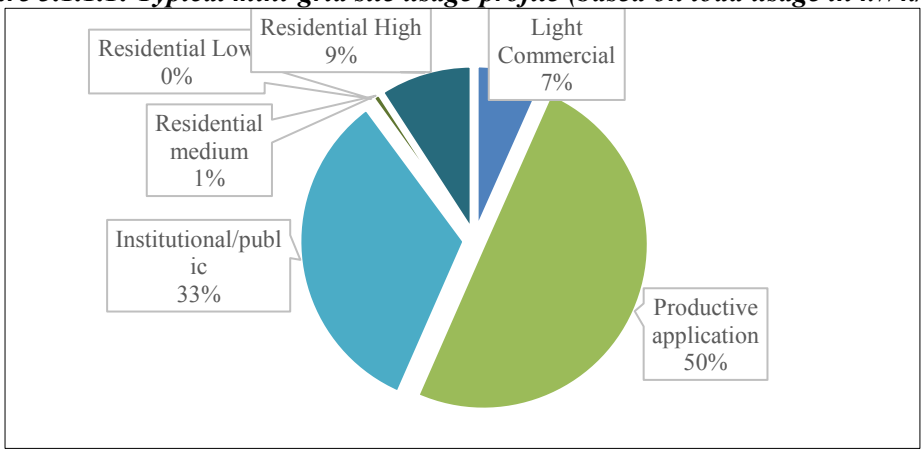
2.8.1 The main performance indicators for the Project relate to the increase in national electricity access rates owed to the Project's activities. These will be measured through the number of verified connections and megawatts confirmed on the Odyssey Platform. REA will have the primary responsibility for tracking the project's key performance indicators, using data from contractors, Odyssey and other project stakeholders. Statistical reports produced by NERC and the Ministry of Power will verify the performance indicators. The progress during implementation will be measured by the timely commencement of the work, regular disbursements, consultations with the Project Management Unit, timely submissions of quarterly progress reports and implementation of the ESMF and annual audit reports.

## III – PROJECT FEASIBILITY

### *3.1. Economic and financial performance*

3.1.1 **Financial Analysis.** The Bank has undertaken a technical assessment of the Project, identifying the intervention areas and acquiring sample baseline parameter data for the comprehensive designing, structuring, and sizing of the respective Project components. This assessment has provided baseline data for 250 sites that REA has selected for developing and implementing the Project with AfDB financing. Site specific information such as demand profiles, user categories, usage levels and current electricity sources have been used to estimate the required mini-grid size and inform type of technology to be employed at such sites. Figure 3.1.1.1 below summarizes the profile of a typical site. On average, the selected sites have shown that productive users account for the majority of consumption for a typical mini-grid site.

***Figure 3.1.1.1: Typical mini-grid site usage profile (based on load usage in kWh/day)***




3.1.2 Lessons learned in the off-grid sector in Nigeria have clearly indicated that factors such as inflation, exchange rate fluctuations, and costs of doing business, as well as other macroeconomic fundamentals remain important considerations among operators. A financial analysis of the sector from the perspective of the mini-grid operator must ensure the operator's cash flow projections achieve an acceptable rate of return and that these cash flows are estimated to be strong enough for the operator to pay its debt obligations to its commercial lenders. Therefore, two important matrices for commercial viability have been highlighted in the financial analysis of the Project: (i) the debt service cover ratio (DSCR) and (ii) the equity internal rate of return (EIRR). With these two measures the assessment here seeks to determine and assess whether the amount of subsidy provided as part of the Bank's contribution to Components 1 and 2 of the Project will be sufficient to catalyze private sector participation. Technical assessments show that a 25% level of subsidy to be appropriate for Component 1 and 30% for Component 2.[9]

3.1.3 The base case financial model of the deterministic assessment of the cash flows from the point of view of the operator envisages a sustainable commercial return to the investors and demonstrates that operators should be able to meet their debt obligations to commercial lenders. The base case results show a minimum debt service coverage ratio (DSCR) of 1.10x and average DSCR of 1.42x. The equity internal rate of return (EIRR) is 21% and is higher than 15% the required rate of return.

[9] World Bank simulations have estimated subsidy level of $500/connection based on operator Equity IRR of 15% and retail tariff in the range of 34 to 50 $cents /kWh for capital investment of more than $4500/MW.

*Table 3.1.3.1: Summary of results for project components*

| Project Component | Minimum DSCR | Average DSCR | Equity FIRR | Project FIRR (Real) | FNPV bn NGN |
|---|---|---|---|---|---|
| **Components 1 and 2: Mini-Grids and Productive Appliances** | **1.10x** | **1.72x** | **21%** | | **9 (@10% DR)** |
| **Component 33: Energizing Education** | **N/A** | **N/A** | **N/A** | **5%** | **0.3 (@5% DR)** |

3.1.4 **Sensitivity Analysis and Subsidy Sizing** The projection and the respective deterministic results have used key variables to assess the commercial implication of the Project at the proposed level of subsidy to be provided through the Bank's financing of the Project. Table 3.1.4.1 below summarizes key outcomes of key project parameters.

*Table 3.1.4.1: Summary of sensitivities*

| | | Minimum DSCR | Average DSCR | Equity FIRR | FNPV @ 10% bn NGN |
|---|---|---|---|---|---|
| **Base case** | | **1.10** | **1.72** | **21%** | **9** |
| **Tariff (NGN/kWh) MG** | 200 | 1.30 | 2.01 | 51% | 40 |
| | 150 | 1.10 | 1.72 | 21% | 9 |
| | 100 | 0.90 | 1.42 | 1% | (22) |
| **Subsidy share of mini-grid costs** | 20% | 1.10 | 1.72 | 14% | (1) |
| | 15% | 1.10 | 1.72 | 10% | (11) |
| | 10% | 1.10 | 1.72 | 7% | (21) |
| | 5% | 1.10 | 1.72 | 4% | (31) |
| | 0% | 1.10 | 1.72 | 2% | (41) |
| **Subsidy share of productive appliances costs** | 25% | 1.10 | 1.72 | 20% | 7 |
| | 20% | 1.10 | 1.72 | 18% | 5 |
| | 15% | 1.10 | 1.72 | 17% | 3 |
| | 0% | 1.10 | 1.72 | 13% | (3) |

3.1.5 The level of subsidy should not be lower than 20% of the investment cost of the relevant project because this will result in much lower commercial returns to the equity investors, which would undermine its commercial viability and preclude its development. In turn, for such an investment to make commercial sense, a higher tariff may be required – requiring a more than 25% increase in the base case tariff. However, such an increase still does not envisage commercial viability as DSCRs are extremely low. In this case, a considerably higher level of subsidy – i.e. more than 20% of project costs – will be required to make the mini-grid investment justifiable from the commercial perspective.

*Table 3.1.5.1: Two-way sensitivity on tariff and subsidy levels*

| | | | Tariff (NGN/kWh) | | | | |
|---|---|---|---|---|---|---|---|
| | | | 300 | 250 | 200 | 150 | 100 |
| Subsidy (USD million) | 30% | 88 | 334% | 178% | 88% | 34% | 5% |
| | 25% | 73 | 166% | 97% | 51% | 21% | 1% |
| | 20% | 59 | 103% | 63% | 34% | 14% | -2% |
| | 15% | 44 | 72% | 45% | 25% | 10% | -4% |
| | 0% | 0 | 35% | 23% | 12% | 2% | -9% |

3.1.6 Component 3 contains fewer commercial aspects. However, given the proposed investment and operating costs of power systems for federal universities, it is important that projects implemented under this Component provide electricity at tariffs that are financially sustainable. According to Bank estimates, for projects implemented under Component 3 to be financially sustainable, the tariff should be no less than 250 NGN/kWh.

3.1.7 **Economic Analysis.** Results of the economic analysis shows that the Project is likely to have a significant economic impact for Nigeria. The Economic Net Present Value (ENPV) at a 12% real discount rate is NGN 517 billion with an Economic Internal Rate of Return (EIRR) of 95%, which is higher than 12%. These results have also been tested against a scenario in which environmental benefits have been excluded, yet the Project is still viable with a positive ENPV of NGN 193 billion and internal rate of return of 40%, which is above the economic discount rate. This clearly indicates that the proposed investment project makes use of Nigeria's resources efficiently compared to other alternative options in the Nigerian economy.

***Table 3.1.7.1: Summary of economic analysis results***

| | **EIRR** | **ENPV @12% RD** |
|---|---|---|
| | (Including Environment Benefits) | |
| **Mini-Grid, Productive Appliances** | 126% | NGN 423 billion |
| **Energizing Education** | 37% | NGN 64 billion |
| **Total project** | 95% | NGN 517 billion |
| | (Excluding Environment Benefits) | |
| **Mini-Grid, Productive Appliances** | 44% | NGN 150 billion |
| **Energizing Education** | 31% | NGN 42 billion |
| **Total project** | 40% | NGN 193 billion |

## *3.2. Environmental, social impacts and climate change*

3.2.1 **Environmental and Social Impact.** The Project was validated as Category 2 in line with the Bank's Environmental and Social Assessment Procedures (ESAP). The categorization is based on the observation that the expected adverse impacts are site specific and are not deemed significant or irreversible.

3.2.2. The environmental and social impacts associated with the individual sub-projects are considered limited in magnitude. However, notable potential negative impacts may arise from the land acquisition process for the sub-projects, as well as from aspects of waste management linked to used batteries. The negative impacts that may occur during the construction phase include: (i) soil erosion as a result of land clearing and excavation works; (ii) localized and temporary air and water pollution associated with construction activities; (iii) loss of vegetation; (v) occupational health and safety related issues including HIV and demographic changes associated with the movement and influx of workers; and (iv) increased pressure on shared natural and social amenities and resources.

3.2.3 Apart from the immediate benefits of increasing access to electricity, for off-grid consumers, the project is expected to have significant environmental benefits in terms of greenhouse gas emission reduction. This is linked to the replacement of other carbon intensive technologies such as kerosene, gasoline and diesel generators.

3.2.4 Given the nature of the Project, an Environmental and Social Management Framework (ESMF) has been developed in accordance with the requirements of the Bank. The Borrower has also developed a Resettlement Policy Framework (RPF) in line with the requirements of the World Bank to address any eventual matters related to land acquisition associated with sub-projects. The ESMF together with the RPF were developed to provide a process to be implemented by the Borrower for the management of potential environmental and social impacts and risks in the context of Category 2 operations with sub-projects. The ESMF and RPF provide a detailed set of procedures, methodologies and management measures to ensure that the environmental and social impacts of sub-projects are addressed in an appropriate manner. A summary of the ESMF was disclosed in compliance with AfDB requirements on 5 October 2018. The ESMF has been prepared with details of mitigation measures designed to address the expected negative impacts of the Project. A monitoring framework for the implementation

of the management plan has been developed with details of actions and responsibilities for REA and other stakeholders.

3.2.5 **Social Considerations.** The immediate beneficiaries of the project will include households, MSMEs, students, and faculty staff of federal universities throughout Nigeria. It is estimated that 105,000 households (representing approximately 525,000 people), 20,000 MSMEs and eight universities (representing approximately 150,000 people) will receive new or improved access to electricity as a result of the Project. Among these beneficiaries are households that will have access to electricity for the first time. Different benefits in this respect include increased productivity to significant health benefits from replacing kerosene and candles with electric lighting. The Project will also lead to improved security through street lighting and long-term savings over continued consumption of alternative fuels. The Project will also contribute to the diversification of business opportunities that are dependent on electricity, as well as to improving the educational climate of federal universities. Some of these institutions are currently not connected to the grid and depend exclusively on diesel-powered generators, while others are underserved by the existing DISCOs. The Project will also bring benefits of job creation during the construction and operational phases of the project.

3.2.6 The Project is not expected to lead to involuntary resettlement or economic displacement of more than 150 people. It is estimated that in the different components the land needed will be in the upper limits of 10 hectares or less (assuming 1 hectare per 1 MW in solar technology). Land for the majority of the sub-projects implemented through NEP is expected to be voluntarily donated.

3.2.7 **Climate Change.** The Project is classified as Category 2 in accordance with the Bank's Climate Safeguards System. This entails the development of practical risk management measures and adaptation measures to be integrated into the design of the Project. As described in Nigeria's Nationally Determined Contribution (NDC), under the business as usual scenario (BAU) the country's emissions are projected to grow to 900 M tCO2 by 2030. Nigeria has therefore pledged an unconditional contribution of 20% below BAU that is consistent with the current development trends and government policy priorities. This includes improving energy efficiency by 20% and providing 13 GW of renewable electricity provided to rural communities currently off-grid (through solar PV mini-grids and standalone systems) and ending gas flaring. The activities envisaged by the Project are perfectly in line with the NDC as it will contribute to both energy efficiency and off-grid renewable electricity deployment. For systems such as mini-grids, household SHS, community SHS, and hybrid renewable power stations at universities, GHG emissions over 20 years have been estimated as follows: total baseline emissions are estimated to be 3,371,669 tCO2, with total gross emissions of 1,685,128 tCO2, whereas the project's net emissions total -1,686,542 tCO2.

3.2.8 Gender Considerations. The Project was rated Category 2 under the AfDB Gender Marker System (GMS) because one or more of the Project's outcomes will contribute to the advancement of gender equality and female empowerment. Many women and men, with low incomes and/or in rural areas are disadvantaged in terms of their ability to access electricity and modern energy. Women, however, are particularly exposed given that they comprise the majority of the rural and urban poor, and generally have access to fewer prospects/opportunities in terms of career and education than the male population. Women comprise around 56% of the illiterate population in Nigeria, with high population growth putting pressure on an already challenged education system. Women make up 45% of the total labor force, with only one-third of Nigerians securing a job in the formal sector comprising women.

3.2.9 The primary source of energy for the majority of rural people in Nigeria is biomass (with 85% of people still cooking with charcoal and firewood) representing 57% of final energy consumed, which in some cases is sourced more than five kilometers away – the collection of which is mainly the responsibility of women and girls. Rural women and girls are especially affected by energy poverty due to gender-defined roles in energy production, distribution and use in households, communities and the market. Women and girls are thus faced with challenges including: (i) time poverty – time that could be used for educational or productive ventures; (ii) adverse health effects – exposure to respiratory

diseases (as a result of indoor air pollution from cooking with traditional biomass; and (iii) safety issues encountered while gathering fuelwood.

3.2.10 Limited access to energy sources for lighting, heating, cooking, transport and economic production inhibits the productivity of women, men, and society at large. Yet women – as both consumers and suppliers – remain invisible in the energy sector. The NEP has been designed to take into account the realities of the differences in needs, constraints and opportunities between women and men in relation to electrification, and the development of services. Focus will be placed on exploring how energy services can reduce the time and labor burden of women, and ways to enhance and create income generating opportunities for women e.g. through entrepreneurship or enhanced productivity and agro-processing.

3.2.11 A gender assessment and action plan has been prepared for the Project (Technical Annex B9) including a summary of the gender equality situation in Nigeria with a specific focus on addressing gender gaps to increase the participation of women and youth in the renewable energy sector. The assessment identifies potential entry points to support women entrepreneurs in the sector.

# IV – IMPLEMENTATION

## *4.1. Implementation arrangements*

4.1.1 REA will be the Implementing Agency for all four Components of the Project. A Project Management Unit (PMU) has already been established with support from the World Bank to manage the implementation of the Project, and the Bank will finance recruitment of additional staff to supplement the existing PMU staff. The Federal Project Financial Management Department (FPFMD) has posted a project accountant to the Project.[10] The PMU will hire additional staff and technical experts as needed to ensure sufficient capacity for implementing the Project. REA has drafted a Project Implementation Manual (PIM) that, among other things, provides a framework for the implementation of the administrative, financial and accounting operations under the Project and describes/standardizes the procedures, processes and conditions for disbursement of funds in respect of each NEP component.

4.1.2 The Bank will recruit the following staff to support the delivery of the NEP and complement the existing staff working on the NEP: (i) Deputy Coordinator; (ii) Procurement Officer; (iii) Environmental Officer; (iv) Engineer/ Technical Advisor; (v) Social Specialist; and (vi) Monitoring and Evaluation Officer.

4.1.3 REA's responsibilities include, among other things: (i) resolving obstacles requiring high-level intervention; (ii) monitoring the implementation of the Project; (iii) consolidating information on progress of implementation and results reporting; and (iv) providing oversight and monitoring of E&S risk management arrangements.

4.1.4 The Bank's Nigeria country office will be responsible for monitoring the implementation of the Project. Based in Abuja, the Nigeria country office is strategically located to liaise directly and effectively with REA (also based in Abuja) on all pertinent issues. The Bank has recruited in the over the last one year, at least two technical energy sector staff based in Abuja who will lead the Bank's implementation of the Project in collaboration with the relevant procurement and FM specialists. The Nigeria country office will be supported by the project team based at HQ in Abidjan.

4.1.5 **Implementation Arrangements for Component 1:** The PIM outlines the eligibility criteria that mini-grid project developers must meet to participate in the Minimum Subsidy Tender. The PIM also describes the application and evaluation procedures, verification protocols for disbursement, as well as model contract agreements between REA and the participating companies. The award of mini-

[10] Federal Project Financial Management Department (FPFMD) is a multi-donor and multi-project Financial Management platform in the Office of the Accountant General for the Federation (OAGF).

grid subsidies will involve a selection committee that evaluates proposals from bidders. The Bank will review and provide necessary approvals at different points in the tender process.

4.1.6 **Implementation Arrangements for Component 2:** REA will engage a consultant to conduct a market study, identify qualified appliances to be included in the scheme, design the grants/subsidy schedule as well as the relevant implementation processes. REA will engage a firm to serve as a Grants Administrator for the management of the performance-based grants/subsidies. An Independent Verification Authority will be recruited to support the provision of the performance-based grants.

4.1.7 **Implementation Arrangements for Component 3:** REA will provide oversight to the implementation. REA will contract with competitively procured EPC contractors to build, operate and maintain the power plants on each site, as well as build and equip training centers and street lights. The procurement process will allow bidders to bid on several sites. Each bidder will also be considered for a five-year O&M contract for the relevant power station it is bidding to develop. When a DISCO is eventually able to provide reliable and affordable service to a university, REA or the universities may either: (i) enter into purchase-sale agreements with DISCOs for peak period supply of power to the DISCO using NERC's net metering regulations; or (ii) find a buyer for the dedicated power station.

4.1.8 **Implementation arrangements for Component 4.** This component will involve REA publicly procuring goods and services in accordance with relevant public procurement and Bank procurement rules, when and where applicable. The recruitment of all PMU staff, as well as procurement related to consultancy assignments, including for market assessments, grant administration, training/workshops, etc., will be undertaken through a transparent and competitive process in accordance with relevant public sector and Bank rules.

4.1.9 **Procurement Management**. Procurement of goods (including non-consultancy services), works and the acquisition of consulting services, financed by the Bank for the project, will be carried out in accordance with the *"Procurement Policy and Methodology for Bank Group Funded Operations" (BPM)*, dated October 2015 and following the provisions stated in the Financing Agreement to be entered into in respect of the Project. Specifically, procurement will be carried out following the Borrower's Procurement System (BPS) and the Bank Procurement Policy and Methodology BPM. The BPS refers to specific Procurement Methods and Procedures (PMPs) comprising the country's public procurement framework, including the: (i) Public Procurement Act of 2007; (ii) Procurement Regulations of 2007; and the (iii) Rural Electrification Fund (REF) Operational Guidelines, 2017. The BPM refers to Bank standard PMPs, including usage of the relevant Bank Standard Solicitation Documents (SDDs) (i) for contracts that are either above the thresholds indicated in Annex B5, Para. B.5.3.2; (ii) in cases in which BPS is not relied upon for a specific transaction or group of transactions; and (iii) in cases in which the BPM is considered the optimal choice for the specific transaction or group of transactions.

4.1.10 **Procurement Risks and Capacity Assessment (PRCA).** An assessment of procurement risks at the levels of the federal government, the country's power sector, and the project, as well as an assessment of REA's procurement capacity were undertaken for the Project. The appropriate risks mitigation measures have been included in the procurement PRCA action plan proposed in Annex B5, Para. 5.3.8.

4.1.11 **Financial Management**. The Project's Financial Management (FM) (i.e. budgeting, accounting, internal controls, treasury management, financial reporting and external audit) will fall under the purview of the (i) Federal Project Financial Management Department (FPFMD) in the Office of the Accountant-General of the Federation (OAGF), and (ii) the REA as the Implementation Agency. The FPFMD has a long and favorable track record and handles the accounting for over 23 ongoing donor-funded projects (primarily by the World Bank). FPFMD will second an accountant to REA to provide financial management services in respect of the additional activities of the Project to be financed by the AfDB's participation (three secondees from the FPFMD have already been seconded to REA – the fourth will oversee REA's application of funds from the AfDB to the Project). The secondment of this accountant from FPFMD will be a condition precedent to the Bank's first disbursement of funds

allocated for the Project. The team of accountants seconded from FPFMD will be responsible for the FM of both the AfDB and World Bank financing of the Project and will aim to harmonize their reporting standards to facilitate donor harmonized reporting. They will form part of the PIU and work closely with existing staff from REA on the overall implementation of the Project. These seconded accountants will also receive training in Bank requirements for FM at project launch and during its implementation as a capacity building initiative.

4.1.12 As detailed in Technical Annex B4, an assessment of the capacity of FPFMD and REA to conduct FM with respect to the Project was undertaken as part of the Project's appraisal. This assessment concluded that there is sufficient manpower and technical capacity among both institutions to meet the accounting and reporting requirements of the Project, as well as the minimum requirements as laid out in the Bank's FM guidelines. In this case, existing project FM arrangements, including for budgeting, accounting, internal audit and treasury management may be used. Nevertheless, the overall FM risk for the Project is assessed as *Substantial*, primarily due to the: (i) nature of the Project; (ii) inherent weaknesses in internal controls; and (iii) lack of experience of REA in implementing donor financed projects. However, the satisfactory implementation of agreed FM actions is expected to strengthen the existing systems.

4.1.13 In accordance with the Bank's financial reporting and audit requirements, harmonized project Interim Quarterly Financial Progress reports (IQFPR) showing separately the different sources of financing and expenditures will be prepared and submitted to the Bank not later than 45 days after the end of each calendar quarter. An independent audit firm will be procured competitively to carry out the annual project audit and the auditor's opinion and management letter, together with the project financial statements, which will be submitted to the Bank not later than six months after the end of each fiscal year. The external audit will be carried out in accordance with a Bank-approved terms of reference, with the costs of the audit financed by the resources of the loan approved for the Project.

4.1.14 **Disbursement Arrangements**. The Project will make use of the Bank's four disbursement methods: (i) direct payment, (ii) special account (SA), (iii) reimbursement method, and (iv) reimbursement guarantee for loan resources in line with the Bank's disbursement policies and procedures as indicated in the Disbursement Handbook of the Bank Group. Direct disbursement will be used for payments on contracts; while a project specific USD Special Account together with the related local currency (Naira) will be opened at the CBN to facilitate all other project related payments in local currency. The Bank and the Borrower will sign a Disbursement Letter, which shall contain details of the disbursement arrangements for the Project. The Recipient will designate persons who will be authorized to sign the disbursement applications for drawdown of the loan proceeds. Updated lists of authorized signatories will be sent to the Bank as and when there are changes.

## *4.2. Monitoring*

4.2.1 Monitoring will be based on the Project's Results-Based Logical Framework. Monitoring and Evaluation (M&E) activities will be undertaken at national and local levels, as appropriate. REA will monitor performance across all four Components and ensure consolidation and integration of the routine results monitoring reports in the Quarterly Progress Reports prepared by the PIU. The M&E for outcome and impact indicators will be undertaken in line with the PIM and in conjunction with National Bureau of Statistics of Nigeria, Federal Ministry of Power and the Federal Ministry of Finance.

4.2.2 The Bank will undertake up to two supervision missions every year and provide a bi-annual Implementation Progress and Results Report (IPR) to monitor and rate the Project's implementation. The IPR will be used as the tool to discuss, agree and commit with REA on the issues and actions needed to improve its performance with respect to Project implementation. The Federal Ministry of Finance, in collaboration with the Federal Ministry of Power and REA, will coordinate the related missions. A Project Mid-Term Review will be undertaken at the mid-cycle of the Project. The Mid-Term Review will evaluate progress against outputs and outcomes and draw lessons for follow-up operations. The Project Completion Report (PCR) will be prepared after 85% of AfDB funds allocated

for the Project have been disbursed. It will be prepared to evaluate progress against the Results-Based Logical Framework and draw lessons learned to be applied to subsequent initiatives.

4.2.3 The innovative design of the proposed project will require a substantial level of implementation support particularly in the early years. Technical staff and consultants from the Bank will work closely with REA in the design of the project and provide implementation support. At least three full team missions and continuous involvement is anticipated in the initial couple of years.

### *4.3. Governance*

4.3.1 The project will be implemented by REA, a government entity established under Section 88 of the Electric Power Sector Reform Act 2005. The Board of Directors appointed by the President of Nigeria on the recommendation of the Federal Minister of Energy provides strategic direction and guidance to REA. The Project will comply with the government's key legislative and regulatory provisions relating to corruption, including the Independent Corrupt Practices and Other Related Offences Act of 2000. The Internal Audit Department of REA will assist in monitoring and evaluating internal controls. The Office of the Auditor-General for the Federation will undertake external audits of the Project. The Bank and FMoF will provide some oversight and carry out periodic financial management assessments of the Project, as well as other assessments to review the controls systems of REA in its capacity as the Implementing Agency.

### *4.4. Sustainability*

4.4.1 The technical sustainability of mini-grids developed through the Project will be supported by the continued availability of appropriately trained local technicians and operators for maintenance, as well as remote control and monitoring systems and after-sales service plans. The financial sustainability of components 1 and 2 will be supported through capital cost grants and performance-based grants, that will balance affordability for the end users, maintaining an appropriate level of service, and maintaining a competitive marketplace. Emphasis will be placed on ensuring high quality of systems and services. The Project will also provide technical assistance to key institutions and stakeholders. The sustainability of the component 3 hinges on: (i) selecting appropriate EPC and O&M contractors, and (ii) the successful construction and long-term operation of the power plants and training centers at the universities. During implementation of EEP, options for financial sustainability will be developed and could include: (i) having the universities gradually take over O&M costs; (ii) transferring assets to universities or DISCOs; or (iii) leasing these systems to private sector companies.

4.4.2 Overall, the Project is considered to be technically and economically sustainable. This conclusion is reflective of the design of the Project, which leverages the resources of the private sector to develop the off-grid space in Nigeria, as well as the broad commitment that the Project has received from the Nigerian government and its sector agencies which have been instrumental in implementing the relevant regulatory framework and creating more flexible financing instruments to drive activities in the sector. The regulatory framework and enabling environment for mini-grid and off-grid development in Nigeria is already considered to be among the most developed in Sub-Saharan Africa, with the market attracting considerable interest from both local and international private sector developers. However, catalyzing private sector investment, particularly in a scaled-up approach requiring large upfront capital costs in an untested environment, requires providing financial incentives, at the least at the onset. The incentive schemes under Component 1 and 2 have been designed to attract otherwise ‘cautious capital’ from private sector investors, while avoiding market distorting effects that may affect the long-term economic and financial sustainability of the mini- and off-grid sectors. This is done by ensuring that subsidies provided to off-grid and mini-grid developers are not passed onto the end-users in the form of lower tariffs or prices for productive use equipment/appliances. Components 3 and 4 further ensure the sustainability of the Project and the sector after the Project’s lifetime, by

developing capacity amongst the workforce, as well as among other key stakeholders in the sector, in respect of the technical and commercial aspects of off-grid development.

4.4.3 The proposed project has been designed to support the sustainability of the market by focusing on business models and financing mechanisms that will allow the private sector to continue to grow after the project ends. It is envisaged that all funding will be required after the Project closes, as REA and the government continue to implement the rural electricity expansion. These funds could possibly be provided through follow-on projects and/or other funding mechanisms.

### *4.5. Risk management*

4.5.1 ***Sector strategies and policies risk.*** Overall, power sector strategies, policies and regulations in the case of off-grid electricity supply are adequate and, in many cases, consistent with international best practice. However, sector performance has suffered from inconsistent enforcement of existing strategies, policies and regulations. These risks will be mitigated through comprehensive measures laid out in the government's PSRP to enhance the sustainability of the country's power sector.

4.5.2 ***High perceptions of risk amongst private sector developers.*** Private sector developers may be reluctant to engage the Project given their lack of familiarity with the market (in the case of international developers) and concerns with REA's operational capacity. *Mitigation:* A transaction advisor will be recruited who will engage with the private sector and address their perceptions of risk as much as possible. Project implementation support, particularly from technical assistance and capacity building activities envisaged under Component 4 of the Project, should also help assuage concerns from private sector developers.

4.5.3 ***Regulatory risk related to what happens when the DISCO grid networks are extended to reach areas served by a mini-grid or stand-alone solar systems.*** To mitigate this risk, NERC has defined a regulatory framework that provides options for mini-grid developers. According to this framework, mini-grid developers will be given the opportunity to: (i) exit their investment, in which they will be appropriately compensated for, or (ii) continue to earn revenue from their investment (i.e. by selling to the DISCO). For stand-alone solar system companies, the extension of the grid may pose a risk if customers are still amortizing their systems when the grid arrives. *Mitigation*: It is expected that companies will account for this risk as appropriate in their business models.

## V – LEGAL INSTRUMENTS AND AUTHORITY

### *5.1. Legal instruments*

5.1.1 The legal instruments for the Project shall be as follows: (i) Loan Agreement shall be entered into between the Federal Republic of Nigeria (FRN) (the "Borrower") and the Bank for the ADB Loan; and (ii) a Loan Agreement, to be entered into between the FRN (the "Borrower") and the Bank (as administrator of the AGTF) for the AGTF loan.

### *5.2 Conditions associated with the Bank's intervention*

5.2.1 **Conditions precedent to entry into force of the Loan Agreements.** The Loan Agreements shall enter into force in accordance with Section 12.01 of the General Conditions Applicable to the African Development Bank Loan Agreements and Guarantee Agreements (Sovereign Entities).

5.2.2 **Conditions precedent to first disbursement of the Loan Agreements.** The obligation for the Bank to make the first disbursement of the loans shall be subject to the effectiveness of the loan agreements, in accordance with the provisions of paragraph 5.2.1 above, and evidence that the Borrower has fulfilled the following condition: (i) Submission of evidence of the designation/secondment of an Accountant from the Office of the Accountant General of the Federation to the Project with

qualifications and terms of reference deemed acceptable to the Bank. The Accountant shall sign a performance contract with the Executing Agency.

### *5.3 Undertakings*

#### 5.3.1 **Environmental and Social Safeguards.**[11]

(i) The Borrower shall, and shall cause the Executing Agency, Implementing Agency and contractors and agents to carry out the Project in accordance with the ESMF, RPF, the Fund's Safeguards Policies and the applicable national legislation in a manner and in substance satisfactory to the Bank.

(ii) The Borrower shall not and shall cause the Executing Agency, the Implementing Agency, and all its contractors and agents not to commence implementation of any works on any section of a given lot under the Project, unless all project affected persons (PAPs) on such lot have been compensated and/or resettled in accordance with the RPF.

**Other Undertakings.** The Borrower shall provide: (i) No later than six months after entry into force, evidence of the recruitment of (i) Deputy Coordinator; (ii) Procurement Officer; (iii) Environmental Officer; (iv) Engineer/ Technical Advisor; (v) Social Specialist; and (vi) Monitoring and Evaluation Officer for the Project Management Unit with qualifications and terms of reference deemed acceptable by the Bank; and (ii) No later than six months after entry into force, a copy of a signed Implementation Agreement between the Borrower and the Implementing Agency mandating the latter to implement the Project on its behalf.

### *5.4 Compliance with Bank policies*

5.4.1 This project complies with all applicable Bank policies – particularly the Energy Policy, Policy on Expenditure Eligible for Bank Group Financing the Integrated Safeguards System (ISS), and is in line with the Bank's crosscutting themes of gender and poverty.

## VI – CONCLUSION AND RECOMMENDATION

6.1 Given the above, Management recommends that the Board of Directors approve: (i) a loan not exceeding One Hundred and Fifty million United States Dollars (USD 150 million) from the African Development Bank and; (ii) a loan not exceeding Fifty million United States Dollars (USD 50 million) from the Africa Growing Together Fund (AGTF) to be extended to the Federal Republic of Nigeria for the purposes and subject to the conditions stipulated in this Project Appraisal Report.

[11] Further details of the E&S provisions shall be integrated into the associated loan agreements for the Project.

# Appendix I: Country's comparative socio-economic indicators

| | Year | Nigeria | Africa | Developing Countries | Developed Countries |
|---|---|---|---|---|---|
| **Basic Indicators** | | | | | |
| Area (in '000 km²) | 2017 | 924 | 30,067 | 94,716 | 35,018 |
| Total Population (millions) | 2017 | 191.8 | 1,244.8 | 6,252.1 | 1,190.0 |
| Urban Population (% of total) | 2017 | 49.9 | 40.5 | 49.2 | 81.4 |
| Population Density (per km²) | 2017 | 210.6 | 42.4 | 66.0 | 34.0 |
| GNI per Capita (US $) | 2016 | 2 450 | 1 836 | 4 442 | 41 208 |
| Labor Force Participation *- Total (%) | 2017 | 56.6 | 65.8 | 62.3 | 60.3 |
| Labor Force Participation **- Female (%) | 2017 | 48.5 | 55.3 | 47.8 | 52.5 |
| Sex Ratio (per 100 female) | 2017 | 103.9 | 100.2 | 107.5 | 105.3 |
| Human Develop. Index (Rank among 187 countries) | 2015 | 152 | ... | … | … |
| Population Living Below $1.90 a Day (% of Population) | 2016 | 48.6 | ... | 1.3 | ... |
| | | | | | |
| **Demographic Indicators** | | | | | |
| Population Growth Rate – Total (%) | 2017 | 2.6 | 2.5 | 1.3 | 0.6 |
| Population Growth Rate – Urban (%) | 2017 | 4.5 | 3.5 | 2.4 | 0.9 |
| Population < 15 years (%) | 2017 | 43.8 | 40.8 | 27.9 | 16.6 |
| Population 15-24 years (%) | 2017 | 19.1 | 19.2 | 16.7 | 11.9 |
| Population >= 65 years (%) | 2017 | 2.7 | 3.5 | 6.8 | 17.4 |
| Dependency Ratio (%) | 2017 | 87.2 | 79.6 | 54.6 | 52.0 |
| Female Population 15-49 years (% of total population) | 2017 | 22.8 | 24.0 | 25.6 | 22.6 |
| Life Expectancy at Birth – Total (years) | 2017 | 53.6 | 61.9 | 70.2 | 80.7 |
| Life Expectancy at Birth – Female (years) | 2017 | 54.0 | 63.3 | 72.3 | 83.5 |
| Crude Birth Rate (per 1,000) | 2017 | 38.1 | 33.9 | 20.6 | 10.9 |
| Crude Death Rate (per 1,000) | 2017 | 12.3 | 9.0 | 7.5 | 8.6 |
| Infant Mortality Rate (per 1,000) | 2016 | 66.9 | 49.3 | 33.1 | 4.5 |
| Child Mortality Rate (per 1,000) | 2016 | 104.3 | 72.6 | 44.3 | 5.3 |
| Total Fertility Rate (per woman) | 2017 | 5.5 | 4.4 | 2.6 | 1.7 |
| Maternal Mortality Rate (per 100,000) | 2015 | 814.0 | 444.1 | 237.0 | 10.0 |
| Women Using Contraception (%) | 2017 | 20.5 | 37.6 | 62.1 | ... |
| | | | | | |
| **Health and Nutrition Indicators** | | | | | |
| Physicians (per 100,000 people) | 2005-15 | 37.6 | 41.6 | 121.6 | 293.5 |
| Nurses and Midwives (per 100,000 people) | 2005-15 | 148.9 | 120.9 | 211.3 | 873.4 |
| Births attended by Trained Health Personnel (%) | 2010-16 | 35.2 | 55.9 | 76.6 | 98.9 |
| Access to Safe Water (% of Population) | 2015 | 68.5 | 71.6 | 89.4 | 99.5 |
| Access to Sanitation (% of Population) | 2015 | 29.0 | 39.4 | 61.5 | 99.4 |
| Percent. of Adults (aged 15-49 years) Living with HIV/AIDS | 2016 | 2.9 | 3.6 | 1.1 | ... |
| Incidence of Tuberculosis (per 100,000) | 2016 | 219.0 | 221.7 | 163.0 | 12.0 |
| Child Immunization Against Tuberculosis (%) | 2016 | 64.0 | 82.1 | 84.9 | 95.8 |
| Child Immunization Against Measles (%) | 2016 | 51.0 | 74.4 | 84.0 | 93.7 |
| Underweight Children (% of children under 5 years) | 2010-15 | ... | 18.1 | 15.3 | 0.9 |
| Prevalence of Stunting | 2010-15 | 32.9 | 33.3 | 25.0 | 2.5 |
| Prevalence of Undernourishment (% of population) | 2015 | 7.9 | 17.5 | 12.3 | 2.7 |
| Public Expenditure on Health (as % of GDP) | 2014 | 0.9 | 2.6 | 3.0 | 7.7 |
| | | | | | |
| **Education Indicators** | | | | | |
| Gross Enrolment Ratio (%) | | | | | |
| Primary School – Total | 2010-16 | 93.7 | 101.7 | 103.8 | 102.6 |
| Primary School – Female | 2010-16 | 92.8 | 98.8 | 102.2 | 101.8 |
| Secondary School – Total | 2010-16 | 55.7 | 51.8 | ... | 106.6 |
| Secondary School – Female | 2010-16 | 53.5 | 49.7 | ... | 106.4 |
| Primary School Female Teaching Staff (% of total) | 2010-16 | 48.2 | 46.0 | 51.3 | 81.0 |
| Adult literacy Rate – Total (%) | 2010-16 | ... | 68.6 | ... | ... |
| Adult literacy Rate – Male (%) | 2010-16 | ... | 76.0 | ... | ... |
| Adult literacy Rate – Female (%) | 2010-16 | ... | 61.7 | ... | ... |
| Percentage of GDP Spent on Education | 2010-16 | ... | 4.9 | 4.1 | 5.2 |
| | | | | | |
| **Environmental Indicators** | | | | | |
| *Land Use* | | | | | |
| Arable Land (as % of total land area) | 2015 | 37.3 | 8.0 | 11.3 | 10.1 |
| Agricultural Land (as % of land area) | 2015 | 77.7 | 37.4 | 38.1 | 35.1 |
| Forest (as % of land area) | 2015 | 7.7 | 21.0 | 31.4 | 28.8 |
| Per Capita $CO_2$ Emissions (metric tons) | 2014 | 0.5 | 1.1 | 3.5 | 11.0 |
| | | | | | |

*Sources: AfDB Statistics Department Databases; World Bank: World Development Indicators; UNAIDS; UNSD; WHO, UNICEF, UNDP; Country Reports*

Notes: n.a.: Not Applicable; …: Data Not Available; * Labor force participation rate, total (% of total population ages 15+ years)

** Labor force participation rate, female (% of female population ages 15+ years)

# Appendix II: AfDB on-going projects in Nigeria

| Project Description | Loan Number | Age | Approval Date | Closing Date | Apvd amount (UAm) | % Disbursed | Type | Financial Source | Instrument | Sector |
|---|---|---|---|---|---|---|---|---|---|---|
| ***Sovereign Operations (National)*** | | | | | | | | | | |
| Plateau State Potato Value Chain Support Project (PS-PVCP) | 2100150037297 | 1.7 | 30-Mar-17 | 31-Dec-20 | 8.00 | 4.44% | Inv | ADF | Loan | Agric. |
| MIC-Grant Support to Bank of Agriculture (BoA) Limited | 5500155010351 | 2.5 | 5-May-16 | 30-Dec-19 | 0.70 | 11.90% | TA | MIC | Grant | Agric. |
| MIC Grant Strengthening of Federal Ministry of Agriculture | 5500155010501 | 2.5 | 18-May-16 | 30-Dec-18 | 0.50 | 69.00% | TA | MIC | Grant | Agric. |
| Agricultural Transformation Agenda Support Program - Phase I | 2100150029994 | 5 | 30-Oct-13 | 31-Mar-19 | 98.80 | 16.70% | Inv | ADF | Loan | Agric. |
| Agricultural Transformation Agenda Support Program - Phase I | 2100155025974 | 5 | 30-Oct-13 | 31-Mar-19 | 0.30 | 41.00% | Inv | ADF | Grant | Agric. |
| Abuja Bus Rapid Transit (BRT) Project Study | 5560155000601 | 5.8 | 5-Feb-13 | 31-Dec-18 | 0.70 | 19.90% | TA | CTF | Grant | Transp. |
| Rural Water Supply and Sanitation Sub-Programmes for Yobe and Osun | 2100150015645 | 11 | 10-Oct-07 | 31-Dec-19 | 51.00 | 67.70% | Inv | ADF | Loan | Water |
| Urban Water & Sanitation Improvement Project in Oyo and Taraba | 2100150025696 | 9.2 | 2-Sep-09 | 30-Apr-18 | 50.00 | 76.60% | Inv | ADF | Loan | Water |
| Zaria Water and Sanitation Expansion Project | 2100150026597 | 6.8 | 8-Feb-12 | 31-Dec-19 | 63.90 | 75.80% | Inv | ADF | Loan | Water |
| Urban Water Reform & Port Harcourt WSSP | 2000130011585 | 4.7 | 26-Mar-14 | 30-Apr-21 | 142.20 | 1.60% | Inv | ADB | Loan | Water |
| Urban Water Reform & Port Harcourt WSSP | 2100150031043 | 4.7 | 26-Mar-14 | 30-Apr-21 | 3.30 | 0.00% | Inv | ADF | Loan | Water |
| Preparation of Komadugu-Yobe Basin Strategic Development Plan | 5600155004101 | 4.2 | 8-Aug-14 | 30-Jun-18 | 1.60 | 46.80% | TA | AWTF | Grant | Water |
| Partial Risk Guarantee Program in Support of the Power Sector | 2100140000051 | 4.1 | 18-Dec-13 | Not Yet | 120.00 | 0.00% | Inv | ADF | PRG | Energy |
| Support for Nigerian Extractive Industries Transparency Initiative | 5500155009501 | 3.4 | 10-Jun-15 | 30-Jun-19 | 0.10 | 70.10% | TA | MIC | Grant | Fin. |
| Development Bank of Nigeria (DBN) | 2000130013130 | 3.1 | 15-Dec-14 | 31-Dec-22 | 284.50 | 66.70% | Inv | ADB | Loan | Fin. |
| Development Bank of Nigeria (DBN) | 2100150032693 | 3.1 | 15-Dec-14 | 31-Dec-22 | 32.60 | 66.70% | Inv | ADF | Loan | Fin. |
| Inclusive Basic Service Delivery and Livelihood Empowerment | 2000200000701 | 1.1 | 14-Dec-16 | 31-Dec-21 | 106.70 | 0.02% | Inv | ADB | Loan | Social |
| Inclusive Basic Service Delivery and Livelihood Empowerment | 2100150036593 | 1.1 | 14-Dec-16 | 31-Dec-21 | 71.80 | 0.00% | Inv | ADF | Loan | Social |
| Inclusive Basic Service Delivery and Livelihood Empowerment | 5800155001751 | 1.1 | 14-Dec-16 | 31-Dec-21 | 4.10 | 3.00% | Inv | RWSSI | Grant | Social |
| MIC-TAF: Rehabilitation of Industrial Clusters as a Driver O | 5500155011151 | 1.11 | 8-Nov-16 | 31-Dec-18 | 0.40 | 54.80% | TA | MIC | Grant | Multi |
| Sub-National Debt Management Capacity Building Project | 5500155011551 | 1.9 | 24-Jan-17 | 30-Jun-18 | 0.80 | 0.00% | TA | MIC | Grant | Multi |
| Jigawa Solar Independent Power Procurement Programme - Phase I | N/A | 0.6 | 30-Apr-18 | Not Yet | 1.00 | 0.00% | TA | SEFA | Grant | Energy |
| | | | | | | | | | | |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| ***Sovereign Operations (Multinational)*** | | | | | | | | | | |
| Nigeria-Cameroon Highway-Transport Facilitation Program on the Bamenda-Mamfe-Ekok-Abakaliki-Enugu Corridor | 2100150019643 | 9.11 | 25-Nov-08 | 31-Dec-19 | 188.60 | 68.30% | Inv | ADF | Loan | Transp. |
| Nigeria-Cameroon Highway-Transport Facilitation Program on the Bamenda-Mamfe-Ekok-Abakaliki-Enugu Corridor | 2100155015166 | 9.11 | 25-Nov-08 | 31-Dec-19 | 16.20 | 29.10% | Inv | ADF | Grant | Transp. |
| Program for Integrated Development and Climate Change Adaptation in the Niger Basin (PIDACC) | Not yet | 0 | 11-Nov-18 | Not Yet | 6.00 | 0.00% | Inv | ADF | Loan | Agric. |
| Abidjan-Lagos Corridor Highway Development Project Study-Nigeria | 2100150036600 | 2.1 | 21-Sep-16 | Not Yet | 1.00 | 0.00% | Inv | ADF | Loan | Transp. |
| ECOWAS - Nelson Mandela Institute - African Institutions Of Science and Tec. | 2100155032824 | 2.3 | 15-Jul-16 | 30-Jun-22 | 6.70 | 25.30% | Inv | ADF | Grant | Social |
| ***Non-Sovereign Operations (National)*** | | | | | | | | | | |
| Fund for Agricultural Finance in Nigeria (FAFIN) | N/A | 1.1 | 13-Dec-16 | 14-Dec-25 | 13.10 | 95.00% | Equ. | ADB | Equi. | Agric. |
| Sterling Bank Plc - Improving the Quality of Life of the People | 2000130019680 | 0.1 | 25-Sep-18 | 31-Dec-22 | 35.96 | 0.00% | Inv | ADB | Loan | Fin. |
| Nigeria Ingfrastructure Debt Fund (NIDF) | Not yet | 0 | 17-Oct-18 | Not Yet | 7.05 | 0.00% | Equ. | ADB | Equi. | Fin. |
| Flour Mills of Nigeria Plc | Not yet | 0.1 | 19-Sep-18 | 31-Dec-27 | 51.80 | 0.00% | Inv | ADB | Loan | Agric. |
| Instutional Support Afe Babalola University MIC-TAF | 5500155013001 | 1.5 | 30-May-17 | 31-Dec-22 | 0.74 | 0.00% | Inv | ADB | Grant | Social |
| Lekki Toll Road Project | 2000120001769 | 10.4 | 18-Jun-08 | 18-Sep-10 | 35.20 | 100.00% | Inv | ADB | Loan | Transp. |
| Indorama Fertilizer | 2000120003769 | 5.9 | 30-Jan-13 | 15-Aug-16 | 71.10 | 100.00% | Inv | ADB | Loan | Ind. |
| Dangote Industries Limited | 2000130015232 | 4.4 | 13-Jun-14 | 22-Dec-19 | 213.30 | 100.00% | Inv | ADB | Loan | Ind. |
| Fidelity Bank Plc | Not yet | 0 | 10-Oct-18 | Not Yet | 35.96 | 0.00% | Inv | ADB | LOC | Fin. |
| Fidelity Bank Plc | 2000130010730 | 5.3 | 17-Jul-13 | 1-Nov-20 | 53.30 | 100.00% | Inv | ADB | LOC | Fin. |
| Line of Credit - United Bank for Africa Plc | 2000130015931 | 2.4 | 8-Jun-16 | 31-Dec-25 | 106.70 | 100.00% | Inv | ADB | LOC | Fin. |
| Domestic-Oriented SME Financing Program | 2000130009884 | 7.5 | 26-May-11 | 16-Mar-21 | 71.10 | 100.00% | Inv | ADB | LOC | Fin. |
| Export-Oriented SME Financing Program | 2000130009885 | 7.5 | 26-May-11 | 29-Jan-15 | 35.60 | 100.00% | Inv | ADB | LOC | Fin. |
| Zenith Bank LOC II | 2000120001070 | 11.1 | 13-Dec-06 | 1-Aug-13 | 71.10 | 100.00% | Inv | ADB | LOC | Fin. |
| Line of Credit II to Guaranty Trust Bank | 2000130007031 | 8.4 | 23-Jun-10 | 6-Apr-12 | 64.00 | 100.00% | Inv | ADB | LOC | Fin. |
| Zenith Emergency Liquidity Facility | 2000120002469 | 9.3 | 22-Jul-09 | 15-Mar-11 | 35.60 | 100.00% | Inv | ADB | Loan | Fin. |
| Stanbic IBTC Bank Plc | 2000130011531 | 4.7 | 26-Mar-14 | 15-Jan-28 | 0.90 | 100.00% | Inv | ADB | LOC | Fin. |
| Stanbic IBTC Bank Plc | 5560130000501 | 4.5 | 27-May-14 | 15-Jan-28 | 0.90 | 100.00% | Inv | CTF | LOC | Fin. |
| Zenith Bank Plc - LOC III | 2000130011530 | 4.7 | 26-Mar-14 | 26-Jun-15 | 88.90 | 100.00% | Inv | ADB | LOC | Fin. |
| Access Bank Nigeria LOC II | 2000130012130 | 4.5 | 15-May-14 | 1-Aug-16 | 71.10 | 100.00% | Inv | ADB | LOC | Fin. |
| Access Bank Nigeria LOC II | 5060140000255 | 1 | 11-Oct-17 | 1-Aug-24 | 16.00 | 0.00% | Inv | PSF | Guar. | Fin. |

| | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Naira Line of Credit to FRB Subsidiary, Rand Merchant Bank N | 2000130011783 | 5.1 | 12-Dec-12 | 21-May-22 | 29.30 | 100.00% | Inv | ADB | LOC | Fin. |
| Wema Bank Line of Credit 2015 | 2000130017380 | 2.7 | 9-Mar-16 | Not Yet | 10.70 | 0.00% | Inv | ADB | LOC | Fin. |
| USD 300 Million Trade Finance Package First Bank of Nigeria | 2000130015733 | 2.4 | 27-Jun-16 | 7-Jun-18 | 213.30 | 66.70% | Inv | ADB | LOC | Fin. |
| FSDH Merchant Bank Trade Finance Line of Credit | 2000130015734 | 2.4 | 27-Jun-16 | 2-Jun-20 | 35.60 | 100.00% | Inv | ADB | LOC | Fin. |
| FSDH Merchant Bank Trade Finance Line of Credit | 5060140000254 | 1 | 11-Oct-17 | 2-Jun-20 | 17.80 | 0.00% | Inv | PSF | Guar. | Fin. |
| Lapo Microfinance Limited | 2000130014181 | 4.1 | 1-Oct-14 | 10-Jan-20 | 5.30 | 100.00% | Inv | ADB | LOC | Fin. |
| Africa SME Program - Fortis Microfinance Bank Plc | 2000130013631 | 3.4 | 15-Jun-15 | 20-Sep-22 | 2.30 | 100.00% | Inv | ADB | LOC | Fin. |
| Africa SME Program Loc - Ab Microfinance Bank Nigeria Limited | 2000130016380 | 4.1 | 18-Sep-14 | Not Yet | 2.30 | 0.00% | Inv | ADB | LOC | Fin. |
| Afe Babalola University Nigeria | 2000130016430 | 2 | 19-Oct-16 | 15-Dec-25 | 14.20 | 100.00% | Inv | ADB | Loan | Social |
| Santa Clara Medical Limited (SCML) | 2000130018930 | 0.6 | 3-Apr-18 | Not Yet | 13.80 | 0.00% | Inv | ADB | Loan | Social |
| Indorama Fertilizer II | 2000120005019 | 0.6 | 2-May-18 | 19-Dec-27 | 55.60 | 0.00% | Inv | ADB | Loan | Ind. |
| ***Non-Sovereign Operations (Multinational)*** | | | | | | | | | | |
| Olam Africa Investment Program | 2000130015880 | 5.4 | 26-Jun-13 | 15-Dec-18 | 34.10 | 100.00% | Inv | ADB | Loan | Agric. |
| VEROD Capital Growth Fund | Not yet | 0.1 | 5-Sep-18 | Not Yet | 10.34 | 0.00% | Equ | ADB | Equ | Fin. |
| Olam Africa Investment Program | 5060140000052 | 2.1 | 28-Sep-16 | 1-Aug-23 | 8.00 | 0.00% | Inv | PSF | Guar. | Agric. |
| Olam Africa Investment Program II | 2000120004569 | 1.9 | 11-Jan-17 | Not Yet | 75.10 | 0.00% | Inv | ADB | Loan | Agric. |
| Africa Finance Corporation | 2000130008630 | 6.8 | 15-Feb-12 | 18-Apr-15 | 142.20 | 100.00% | Inv | ADB | Loan | Fin. |

# Appendix III: Matrix of Selected Development Partners Power & EnergyProjects in Nigeria

| Donor | Project/Activities | Sub-Sector | Total Commitment (Million) |
|---|---|---|---|
| World Bank | NG-CF Aba Cogeneration (FY06) | Power | USD 0.07 |
| World Bank | PRIVATIZATION SUPPORT PROJECT | Power | USD 114.29 |
| World Bank | Power System Maintenance and Rehabilitation Project | Power | USD 70.00 |
| World Bank | Kainji Project (02) | Hydro Power | USD 14.50 |
| World Bank | Niger Dam Project - Kainji | Hydro Power | USD 82.00 |
| World Bank | Nigeria Electricity and Gas Improvement Project Additional Financing | Power, Oil & Gas | USD 200.00 |
| World Bank | Nigeria Electricity and Gas Improvement Project (NEGIP) | Power, Oil & Gas | USD 400.00 |
| World Bank | Nigeria Electrification Project | Energy Transmission | USD 350.00 |
| World Bank | NG-Electricity Transmission Project | Energy Transmission | USD 486.00 |
| World Bank | Nigeria Electricity and Gas Improvement Project (add. financing) | Energy Transmission | USD 100 |
| World Bank | Nigeria Electricity and Gas Improvement Project (NEGIP) | Energy Transmission | USD 200.00 |
| World Bank | Commercial Agriculture Development Project | Energy Transmission | USD 150 |
| World Bank | Nigeria National Energy Development Project | Energy Transmission | USD 172.00 |
| World Bank | Transmission Development Project | Energy Transmission | USD 100.00 |
| World Bank | Power to the Poor: Off-Grid Lighting from Cassava Waste in Nigeria | Renewable Energy | USD 0.20 |
| World Bank | Nigeria National Energy Development Project - Carbon | Renewable Energy | USD 5.87 |
| World Bank | Nigeria National Energy Development Project GEF MSP | Renewable Energy | USD 1.0o |
| World Bank | Nigeria Power Sector Guarantees Project | Other Energy Sector | USD 395.00 |
| World Bank | Kainji Hydro Power Plants Rehabilitation | Other Energy Sector | USD 13.83 |
| Agence Française de Développement | Transmission Program for Nigeria I (ongoing) | Transmission | USD 170.00 |
| Agence Française de Développement | Transmission Program for Nigeria II (underprep.) | Transmission | USD 245.00 |
| Agence Française de Développement | SUNREF Green Finance Project (ongoing) | Green Energy | USD 100.00 |
| EU | Energising Access to Sustainable Energy in Nigeria (EASE) | Renewable Energy | EUR 15.5 |
| EU | EU Support to the Energy Sector in Nigeria– Phase 1… | Renewable Energy | EUR 52.00 |
| EU | First Contribution to AFIF in Support of the Energy Sector in Nigeria | Renewable Energy | EUR 33.00 |

| | | | |
|---|---|---|---|
| EU | Second Contribution to AFIF in Support of the Energy Sector in Nigeria | Renewable Energy | EUR 65.00 |
| EU | Energising Access to Sustainable Energy (EASE) – Component 5… | Renewable Energy | EUR 8.50 |
| EU | Solar Electrification of Rural Social Services for Stability in Alignment With UN Health Cluster and Borno State | Renewable Energy | EUR 5.60 |
| AfDB | Partial Risk Guarantee Program In Support Of The Power Sector | Power/Energy | USD 176.9 |
| AfDB | Nigeria/Togo/Benin Power System Interconnection Project | Power/Energy | USD 14.99 |
| AfDB | Nigeria Liquefied Natural Gas | Power/Energy | USD 100 |
| AfDB | Energy Sector Economic Reform Program | Power/Energy | USD 145 |
| AfDB | Jigawa Solar Independent Power Procurement Programme - Phase I | Power/Energy | USD 0.5 |

## Appendix IV: Summary of African Development Bank's feasibility study findings

| University | Total Population | Annual Energy Consumption- in the next 2 years (MWh) | Self-generation (%) | NEP Power Plant Type | NEP Power Plant Size (MW) | Annual NEP Energy Generation (MWh) | NEP Generation as % of existing power system |
|---|---|---|---|---|---|---|---|
| Modibbo Adama University of Technology, Yola | 16,950 | 8,148 | 54 | Solar | 4 | 8,538 | 105 |
| Federal University of Dutsin-Ma | 3,000 | 1,140 | 33 | Solar | 1 | 2,103 | 185 |
| Federal University of Lafia | 5,000 | 2,222 | 100 | Solar | 1 | 1,646 | 74 |
| Federal University of Lokoja | 3,000 | 1,580 | 21 | Solar | 1 | 1,547 | 98 |
| Federal University of Technology Owerri | 24,337 | 76,748 | 58 | Gas, solar | 5 | 48,092 | 63 |
| University of Port Harcourt | 50,000 | 47,320 | 46 | Gas | 5.5 | 42,398 | 90 |
| Federal University of Technology Akure | 22,000 | 3,034 | 50 | Solar | 1 | 1,752 | 58 |
| Federal University of Uyo | 24,074 | 2,439 | 50 | Solar | 1 | 1,229 | 50 |

# Appendix V: Justification for Bank Financing of project costs higher than the proportion stipulated by the principle of cost sharing with the Regional Member Countries (RMCs)

**1.** The Federal Government of Nigeria (FGN) has embarked upon the implementation of the Power Sector Reform Programme (PSRP). The Nigeria Electrification Project (NEP), which is a nationwide initiative to be implemented by the Rural Electrification Agency (REA), is part of the broader PSRP reform effort. Through the NEP therefore, the REA aims to deliver electricity to underserved communities in Nigeria. The NEP will therefore provide electricity to households, small-to-medium-sized enterprises, and public institutions in a least-cost and timely manner through off- and mini-grid solutions, with over 500,000 people slated to benefit from this initiative. Effective implementation of the NEP would catalyze private investment into rural electrification. As part of the broader PRSP agenda, the FGN has attracted participation of development partners present in Nigeria. To this end, the FGN has requested for Bank Group financing of the NEP.

**2.** To facilitate the achievement of the NEP objectives and implementation of the PSRP, the Bank is providing financing of USD 150 million from the ADB. Additionally, the Africa Growing Together Fund (AGTF) indicated by letter on October 17th, its interest to provide financing for the Project of USD 50 million. The Bank's intervention will also leverage additional resources from the private sector to create a vibrant market for mini-grid and off-grid energy solutions in the long-term. Supportive financing instruments and facilities will also be explored in order to de-risk private investments in mini–grids, stand-alone and decentralized solar power systems in Nigeria.

**3.** The total financing amount for the government program, Nigeria Electrification Program is USD 1.2 billion, distributed as follows:

| **Source** | **Amount (USD million)** | **Instrument** |
|---|---|---|
| African Development Bank | 150.00 | ADB loan |
| Africa Growing Together Fund (AGTF) | 50.00 | AGTF loan |
| IBRD/IDA | 350.00 | IDA loan |
| Government of Nigeria | 5.00 | Counterpart funding |
| Others (Private Sector) | 660.00 | Commercial financing |
| **Total costs** | **1,215.00** | |

**4.** The proposed project shall be implemented over 5 years (2018 - 2023). The Bank financing of USD 150 million will be drawn from the ADB resources under a parallel co-financing arrangement. The 2008 Policy on Expenditure Eligible for Bank Group Financing, stipulates (paras 2.1.2 and 4.2.2) that RMCs should provide a minimum of 50 percent for ADB resources as counterpart funding, unless justification is made otherwise for smaller contribution. For the NEP, the USD 5 million financing translates into 0.4 percent of total project costs, which is below the threshold stipulated by the Policy.

**5.** This note provides justification for approving the 0.4 percent FGN contribution to the NEP in lieu of the required minimum 50 percent of the ADB financing of USD 150million. In justifying this financing, the note examines the unflinching commitment by the FGN to implement the PSRP and Economic Recovery and Growth Plan (2017-2020), the country's overarching development agenda, to which the Bank Group CSP 2011-2017 extended to 2019 fully subscribes. The note also assesses the government's financial allocation to the power sector which imbeds the NEP, as well as the current budget situation and debt levels.

**Criteria I: Commitment by the Federal Government of Nigeria to implement the overall Economic Recovery and Growth Plan (ERGP 2017-2020)**

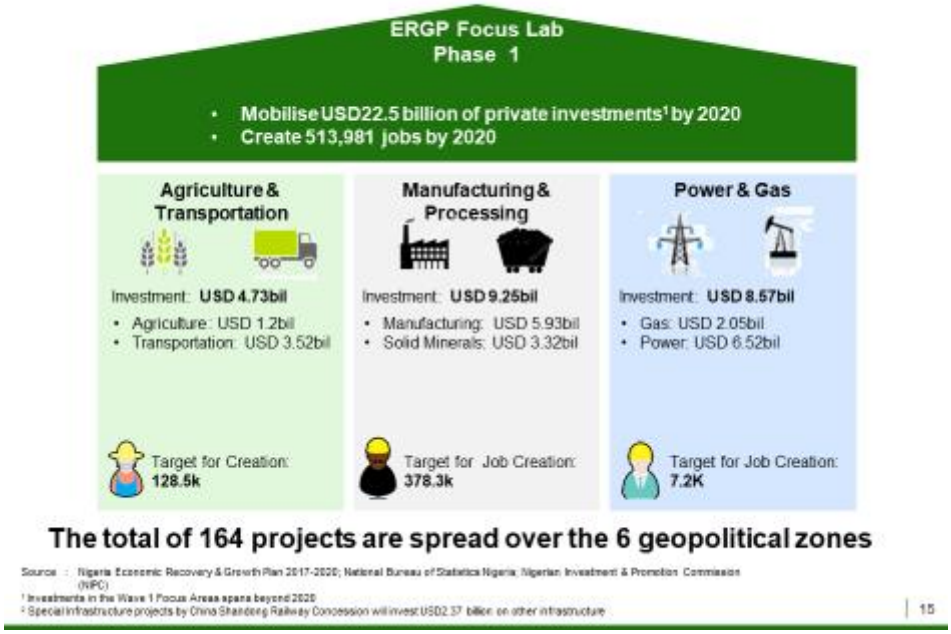
**6. In 2016, the Nigerian economy slipped into recession, a year after the Buhari administration was elected.** The recession compounded other socio-economic and security challenges that already beset Nigeria and underscored the fragility of the economy manifested in

diverse structural and macroeconomic weaknesses. The current government responded to these challenges with the launch in March 2017 of the Economic Recovery and Growth Plan (ERGP), 2017-2020. The ERGP is a medium-term strategy aimed at restoring and sustaining economic growth while promoting social inclusion and laying the foundations for long-term structural change. Among other priorities, the ERGP aims at ensuring energy sufficiency (power and petroleum products) to households, MSMEs and other underserved sectors.

**7. The implementation of the ERGP is being driven at the highest level of government, with the establishment of the Delivery Unit located in the Ministry of Budget and National Planning.** A core aspect of the ERGP is the Focus Labs, the first phase of which was launched in May 2018. The Focus Labs adopted the Big, Fast, Result methodology to determine 'high impact' priority investment projects and unlock the bottlenecks for accelerated delivery. The initial phase focused on three work streams: Agriculture and Transportation, Manufacturing and Processing, and Power and Gas. Remarkable progress has been made since the launch of the Focus Lab with USD 22.5 billion of pledged investments with potential to generate more than half a million jobs by 2020. Total investment could reach nearly USD 40 billion and more than 700,000 jobs by 2025.

**8.** In 2017, the economy emerged out of recession, growing modestly by 0.8 percent. Growth is estimated at 1.9 percent in 2018 and is projected to expand further to an average of 2.1 percent in 2019-2020. Effective implementation of the ERGP is essential to addressing a myriad of the challenges confronting the Nigerian economy, including paucity of power and energy. Thus, the proposed NEP will undoubtedly contribute to plugging the power deficit and stabilize supply of electricity particularly to rural areas, where households currently depend on polluting sources of energy. Figure 1 below shows the outcome of Phase I of the Focus Labs.

**Figure 1. ERGP Focus LAP Results**




Source: Adapted from Africa Investment Forum Abuja Roadshow ERGP Delivery Unit presentation

**Criteria II: Nigeria budgetary allocation to the Power and Energy Sector targeted by the Bank's assistance**

**9. The FGN has prioritized infrastructure investment in the quest to unlock private sector investment in key sectors of the economy.** The launch of the PSRP is testament to the prioritization of the power and energy sector. From 2016-2018, federal budget allocation to the power, works and housing accounted for 23.8 percent of overall annual federal capital budget (Table

1). From 2016-2018, the share of the capital budget allocated to the power sector only has remained relatively stable, averaging about 11.5 percent per annum. However, in 2017, the allocation declined, mainly reflecting the carryover impact of the 2016 recession. The allocation has been bolstered in 2018, as revenues have improved significantly. This reflects continued government prioritization of the power sector.

**Table 1: Budget allocation**

| Description | Fiscal Year | | |
|---|---|---|---|
| | 2016 | 2017 | 2018 |
| Total Federal Budget (trillion naira) | 6.2 | 7.4 | 9.1 |
| Total capital budget (trillion naira) | 1.8 | 2.4 | 2.9 |
| Federal Ministry of Power, Works and Housing capital budget (% of total federal capital budget) | 24.2 | 23.5 | 23.8 |
| Power sector capital budget (% of Federal Ministry of Power, Works and Housing capital budget) | 13.1 | 9.5 | 12.1 |

*Source:* Computed from data Nigeria Budget Office approved budget documents

**10. Country Budget Situation and Debt Level:** Oil revenues account for about three quarters of total revenues in Nigeria. This revenue concentration is a major source of fiscal vulnerability and unpredictability of the budget for the country. For instance, the decline in oil revenues by more than one quarter experienced in 2016 resulted in low federally collected fiscal revenues. Amidst declining revenues and increased spending pressures to protect social gains and jobs, the government was drawn into more expansionary fiscal policy, financed through borrowing, both domestically and externally. With the consolidated fiscal deficit above 3 percent of GDP, government borrowing creates further fiscal pressures (Table 2).

**11.** In terms of debt, as at end June 2018, total public debt was estimated at USD 73.1 billion, equivalent to 17.5 percent of GDP. Out of this amount, USD 51.1 billion (12.3 percent of GDP) was domestic debt. External public debt is estimated at USD 22.1 billion, representing 5.3 percent of GDP. Public external debt is more than 100 percent of revenues, and this has increased since the recession of 2016 as the FGN acquired additional debt to finance revenue shortfalls. This accumulation of new external debt is in line with the government's new debt management strategy aimed at shifting towards more foreign debt to mitigate the high financing costs of domestic debt. Nigeria is already at medium risk of debt distress. Thus, any new loans should balance between risk and return and clearly be mapped to infrastructure projects with potential to improve competitiveness of the economy.

**Table 2: Budget situation**

| Description | Fiscal Year | | |
|---|---|---|---|
| | 2016 | 2017 | 2018 |
| Overall fiscal balance (% of GDP) | -3.8 | -5.2 | -4.0 |
| Total expenditure (as % of GDP | 9.4 | 11.8 | 11.0 |
| Total revenues (as % of GDP) | 5.5 | 6.6 | 7.0 |
| Public external debt (% of GDP)* | 4.0 | 7.0 | 7.7 |
| Public external debt (% of fiscal revenues) | 72.7 | 123.4 | 104.0 |

* Nominal public sector short and long-term debt, end of period. Guaranteed external debt is not included.
*Source:* AfDB Statistics Dept.

**12. Participation of other Development Partners:** A number of development partners are also active in the power sector. Table 3 below shows the cumulative interventions by some of the leading development partners across different projects in the power sector.

**Table 3: Development partners' cumulative interventions in power sector**

| Institution | Funding Allocation (USD million) |
|---|---|
| World Bank | 2,860.6 |
| European Union | 25.5 |
| Agence Française de Développement | 515.0 |
| **Total** | **3,401.1** |

*Source:* AfDB Nigeria Country Department; DPs Co-financing

**13.** The government's budget has limited capacity to provide the level of financing required for the Project. The Federal budget accounts for approximately 5.9% of GDP, 40% of which goes towards financing infrastructure - compared to approximately 3.9% in the United States, against an average of 2-4% financing for infrastructure. This accounts for about USD 5 billion per year that the government is spending on infrastructure. However, the majority of what the government spends in this respect goes toward covering ongoing debt obligations or settling contractual payments rather than to new projects that add installed capacity and expand access to electricity. It is well known that the sector is suffering significant liquidity challenges. Given these constraints, requesting the government to directly finance a larger portion of NEP off of its balance sheet may jeopardize its ability to meet its pre-existing debt and contractual obligations. This could have detrimental consequences for the government's ability to raise debt in the future.

**14.** The foregoing arguments confirm that limiting counterpart funding contributions by the FGN to 0.4 percent of the total Nigeria Electrification Project will free up government resources to other growth enhancing sectors and crisis prone regions needing urgent government intervention, including sustaining the gains in the conflict-ravaged North East region terrorized by the militant group, Boko Haram. This will also ensure that the Bank contributes to Nigeria's overarching objective of achieving shared growth, fostering structural change and economic diversification, consistent with the bank's High 5s transformation agenda.