An Assessment of Nigeria's Implementation of Its Orginal Nationally Determined Contributions (NDCs) and Implications for the Revised Version

By

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Promoting Critical Analysis of, and Public Engagement with Nigeria's Nationally Determind Contributions (NDCs) Revision and Climate Action Project

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Promoting Critical Analysis of, and Public Engagement with Nigeria's NDC Revision and Climate Action Project

The Promoting Critical Analysis of, and Public Engagement with Nigeria's NDC Revision and Climate Action Project is a project implemented by the Climate Change and Development Centre, Alex Ekwueme Federal University, Ndufu-Alike Ikwo, in partnership with the World Resources Institute with funding from the IKEA Foundation. The project is geared towards providing independent critical analysis and input into the revision process of Nigeria's Nationally Determined Contribution (NDC) which is due for submission in November 2020. The project is also intended to increase public awareness of, and stakeholders' engagement in the revision and subsequent implementation of the revised NDC. It is also expected that project will increase public awareness of climate change in Nigeria more broadly. The project aims to help widen the horizon of the discourse and strongly compliment the government-led NDC revision process with the support of the NDC Partnership through the Climate Action Enhancement Package (CAEP), by injecting academic analysis and more public debate into the process.

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The report was written by independent experts who have not been nominated by their governments. Any views expressed in the paper do not necessarily reflect the views of CCCD-AEFUNAI or WRI.

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1.0 Introduction

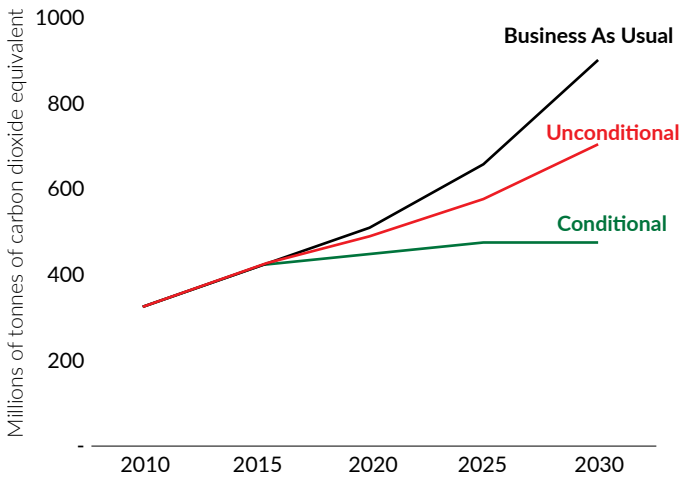
As a Party to the Paris Agreement of 2015, Nigeria committed to reducing its Greenhouse Gas (GHG) emissions, submitting an ambitious Nationally Determined Contribution (NDC) in the run-up to the Paris Climate Conference in 2015. In 2007, Nigeria had elaborated a bold national economic plan– 'Vision 2020' – which set out a commitment to rapid economic growth and ambition for the country to become one of the 20 largest economies in the world by 2020. The current administration adopted 'Vision 2020', along with an Economic Recovery Growth Plan (ERGP). Together, these provided a road map for Nigeria's medium to long-term economic development plan.

With the end of the first cycle of the NDC and the launch of a process for NDC revision, this article analyses the extent of the implementation of the original NDC and also looks at the ambition and intent of the revised NDC. We advocate the establishment of an NDC implementation index, with clear monitoring and tracking tools to be coordinated by a Just Transition Taskforce (JTT) so as to enable the government and the Nigerian public at large to monitor and assess NDC implementation going forward.

2.0 Key Measures in the Original NDC

Nigeria is a Party to the Paris Agreement and submitted its NDC in 2015. The NDC seeks to make an unconditional reduction of 20% of GHG emissions by 2030 compared to Business As Usual (BAU) based on a 2010 baseline scenario and a 45% reduction, conditional on international support (see **Figure 1** below).

Figure 1: *Nigeria's 2015 NDC conditional and unconditional commitment (Source: Federal Government of Nigeria (FGN, 2015).*



The NDC targeted climate action in five priority sectors, as follows (and see **Figure 2** below):

i. **Energy:** The focus here was on decentralized renewable, especially off-grid solar PV and multi-cycle power stations, to give energy efficiency of 2% per year (30% by 2030) and to introduce the use of natural gas rather than liquid fuels;

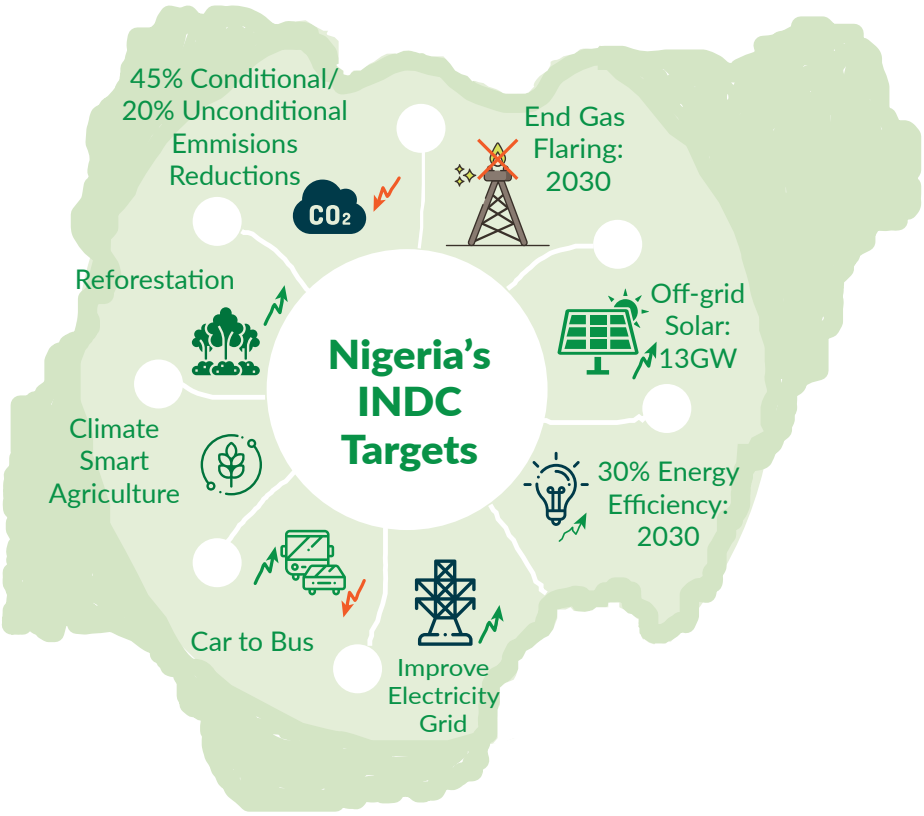
ii. **Oil and Gas:** The goal was to end gas flaring through improved enforcement of gas flaring restrictions;

iii. **Agriculture:** The objective was to promote climate-smart agriculture and reforestation and to stop the use of charcoal for household cooking and heating;

iv. **Transport:** The emphasis was to achieve a modal shift from air to high-speed rail, moving freight to rail, upgrading roads, and improving urban transit. Other measures included toll roads/road pricing, increasing use of CNG, and reforming petrol/diesel subsidies;

v. **Commerce and Industry:** The emphasis was on benchmarking technology standards against international best practices for industrial energy usage, along with promoting the adoption of green technology in industries.

Figure 2: *Nigeria's NDC' Targets'* ***at a glance (FGN, 2015)***



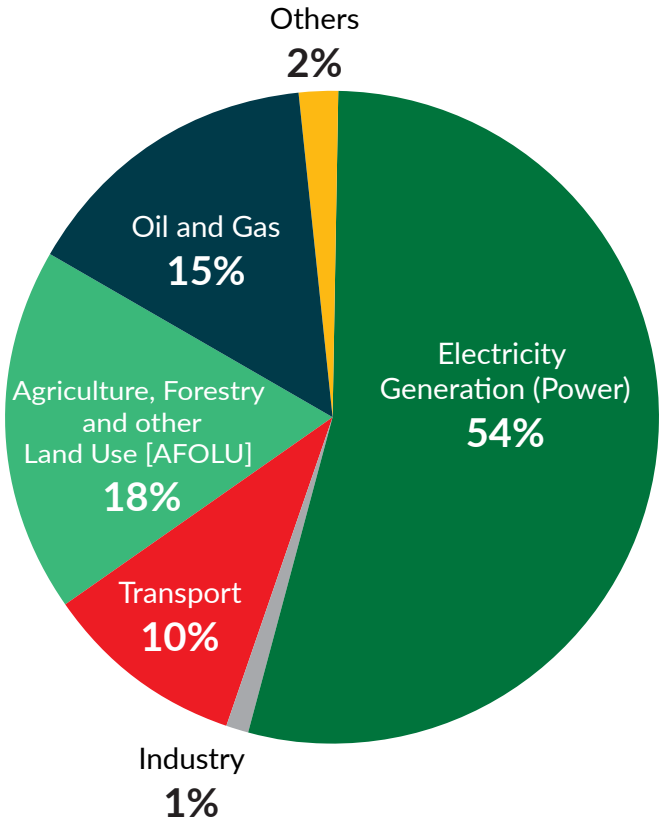
The GHGs covered in Nigeria's NDC are CO2, N2O, and CH4, and the key mitigation measures and potential GHG reduction (by million tonnes per year in 2030) are set out below:

Table 1: *Emission reduction from key mitigation measures (FGN 2015)*

Potential GHG reduction	**(million tonnes per year in 2030)**
Economy-wide energy efficiency	179
Efficient gas power stations	102
Work towards ending of gas flaring	64
Climate-smart agriculture	74
Reduction of transmission losses	26
Renewable energy	31

Without any form of intervention, it was envisaged that the GHG emissions across these five priority sectors would grow by 114% by 2030 to around 900 metric tonnes – around 3.4 tonnes per capita. This scenario assumes economic growth at 5% per year. It also assumes population growth of about 2.5% per year. The scenarios also assume that all Nigerians will have access to electricity (on-grid or off-grid) and that industry will triple in size. **Figure 3** below shows that percentage status across these five priority sectors would grow by 114% by 2030 to around 900 metric tonnes, with Electricity Generation (Power) expected to make about 486MtCo_2^{eq} (54%) of emission reduction, Agriculture and Land Use 162MtCo_2^{eq} (18%), Oil and Gas 135MtCo_2^{eq} (15%), Transport 90MtCo_2^{eq} (10%), Industry 9MtCo_2^{eq} (1%) and Others 18MtCo_2^{eq} (2%).

Figure 3: *Sector-by-sector percentage emission reduction status.*



The 2015 NDC also highlights the importance of keeping major fast-growing cities (Lagos, Kano, and Abuja) livable. In addition, the document states that all climate measures need to be assessed against their ability to bring social inclusion and to be culturally and gender-appropriate, as well as to improve livelihood security, increase resilience and reduce emissions. The 2015 NDC contains key data (as shown above)about emission status ($MtCo_2^{eq}$) across the five priority sectors and this data may enable an assessment of the extent of implementation in line with the transparency, accuracy, comparability, consistency and completeness (TACCC) reporting methodology of UNFCCC. As was also the case in 2015 NDC, Nigeria has not yet developed full GHG inventory (GHGI).

It is instructive to note that before the Paris Agreement in 2015 that promoted the submission of the NDC, Nigeria had already confirmed a number of important actions intended to tackle climate change and limit GHG emissions. Some of these were logically considered as part of what needed to be done under the NDC. They include: (i) A Renewable Energy Master Plan intended to scale up renewable energy generation capacity in the country by 80% renewable compared to the 2012 baseline by 2025 with estimated 370$MtCo_2^{eq}$ GHG emission reduction; (ii) a commitment to explore geothermal energy sources atIkogosi and other warm streams in Nigeria; and (iii) A UN Reducing Emissions from Deforestation and Forest Degradation (REDD)+ Strategy programme' The UN REDD+ strategy is highly pertinent in Nigeria as the country suffers a deforestation rate of 3.7%, one of the highest in the world. The country urgently needs to preserve and recover its natural resource base to sustain a population of more than 200 million people, most of them holders of rural livelihoods whose prospects depend on resilient ecosystems and recovering degraded landscapes. For now, there is no emission target, but the programme is seen both as a way to halt deforestation trends and as a gateway for promoting a green innovation development pathway in order to curb the deforestation that is prevalent in the country (currently 3.7%).

In the section that follows we offer a rapid assessment of the extent of implementation of the NDC and other key climate action targets. This is especially necessary as the country is in the middle of revising its NDC in accordance with its Paris Climate Agreement commitment. A quick assessment will show whether where the country is on track and where efforts to be increased as well as whether or not it makes sense for the country to take on new targets as part of the NDC revision process.

3.0 Assessment of the Extent of Implementation

3.1 Sector-by-Sector Assessment

3.1.1 Electricity Generation (Power)

As stated, the target was to improve decentralized renewable generation especially off-grid solar PV and multi-cycle power stations and to achieve energy efficiency of 2% per year (30% by 2030), and introduce the use of natural gas rather than liquid fuels. The data on renewable energy has yet to be fully established in Nigeria and the institutions providing it are compiling it for inclusion in the revised NDC2. However, we know that the Federal government has commissioned an energizing education project which is generating roughly 92MtCo_2^{eq}. There are additional key renewable energy and energy-efficient projects deployed by the Federal government and non-state actors but these have not been adequately tracked. **Table 2** sets out scorecards for these targets/projects.

Table 2: *Scorecards for additional renewable energy and energy efficiency targets in Nigeria*

Target/Project	Assessment
Increase renewable energy generation by80% by 2025 compared to 2006 baseline with estimated 370MtCO_2^{eq} greenhouse gas emission reductions. Expected to achieve 492MtCO_2^{eq} by 2030.	Detailed tracking is not in place so it is not possible to estimate progress. However, it must be noted that the Renewable Energy Policy established in 2006 was aimed at increasing the contribution of renewable energy so that it would account for 10% of Nigeria's total energy consumption by 2025. It is highly unlikely that renewable accounts for up to 2% of the energy consumed in the country today.
13GW of renewable energy before 2025-2030 as part of the NDC's commitment to reduce emissions.	The government has commissioned a number of distributive renewable energy (RE) systems, including the Rural Electrification Agency (REA); energizing education projects in some Nigerian Universities; Solar home systems in rural communities. The Energy Commission of Nigeria(ECN) has also carried out a number of renewable energy projects over time. There are indications that one or renewable power projects, already approved by the Nigerian power sector regulator (NERC) have progressed in the development cycle. There are also more than 10 projects to both grid and off-grid that were recently given approval through PPAs by the government bulk-purchasing company (NBET) to proceed to development. But there has been no structure put in place to track these deployments in terms of their emission reduction status.

Energy Efficiency Measures: The NDC identified energy efficiency as one major area that emission reduction could be made. This was thought to be low-hanging fruit given the huge amount of inefficiency in the system, especially in the context of limited generation capacity. The target was set at 2% per year by 2020 and 30% by 2030. However, to the best of our knowledge, action has not matched words in this regard. The Energy Commission of Nigeria, in collaboration with the ECOWAS Commission and the Cuban Government, successfully deployed one million high-quality Compact Fluorescent Lamps (CFLs) to replace Incandescent Lamps in different parts of the country. The replacement exercise was carried out in selected sites in FCT, States, Tertiary Institutions, and hotels. This raised awareness about energy efficiency and conservation in the country. A report by UNDP-GEF showed that Nigeria could save $45million for every one million Incandescent Lamp replaced with CFLs. It is estimated that Nigeria has 500 million Incandescent Lamps. For every CFL given out, Nigeria will be saving a minimum 49Watts of energy. The program was intended to be scaled up but little has been done since then.

Clean Cook Stove Programs: Clean cook stoves were not explicitly mentioned in the NDC but with an estimated 18million households in Nigeria (roughly 72% of these Nigerian households) using traditional biomass (mostly firewood and charcoal) to cook, finding a way to scale up cooking technologies has been a major focus for Nigerian governments. With the large number of households affected, improving cooking would result in a massive saving of carbon and trees across Nigeria. Considering each household consumes about 1.5 matured trees a year, it has been estimated that efficient cook stoves such as the Save80 could save 4million trees and 20,477,836.8$CO2^{eq}$ per annum in Nigeria. The boldest program yet in this area came in 2014 when, in its 2014 appropriation bill, the government voted Naira 9.2billion for the procurement and distribution of clean cook stoves. However, the project was stalled as a result of institutional debilities and graft and the matter is still 'sub judice' in till date.

3.1.2 Oil and Gas

Gas flaring is the largest single-point source of GHG emission in Nigeria accosting for over 50 million metric tons of CO2 per year. Ending gas flaring by 2030 is one of the big targets of the NDC. In 2016 the government launched an ambitious Nigerian Gas Flare Commercialization Programme ("NGFCP") which is aimed at selling the previously flared gas to private investors so they can convert to other economically viable uses such as CNG, LNG, and LPG. Government recently says that a contract has been signed with over 100 entities to participate in this program but it is not clear when the operation will start. More recently the government has also launched a National Gas Expansion Program (NGEP) aimed to deliver 1million auto gas vehicles by 2021. However, in the oil and gas sector, the data required is for base-year intensity and baseline scenarios. The present NDC data source was achieved more by extrapolation than by using secondary or primary data. The fault began with the first national communication, where the sources of compiled data compiled were not. Carrying out Measurement, Reporting, and Verification (MRV) in the case of recent activity leads to data which is cumbersome and almost never reliable. Data on the number of Open Cycle Gas Turbines converted to Close Cycle Gas Turbines is important because this is a reduction process. There is no reliable data on which inventory compilers can rely and activity data in this sector is often hard to gather accurately due to the prevailing circumstances in the region.

3.1.3 Industry (Industrial Process and Product Use – IPPU)

The emphasis was on benchmarking technology standards against international best practices for industrial energy usage and promoting the adoption of green technology in industries. As indicated, in this sector the NDC was expected to implement green innovation strategies in the relevant industries. However, to comply with green requirements in these industries, Technology Need Assessment (TNA) is needed in order to take stock of the technology required to reduce emission in this sector. This would enable Nigeria to establish defined models for emission reduction in industries. The Federal government is on the verge of conducting TNA sponsored by the Global Climate Fund. At present, there is no established model for GHG inventory in the IPPU sector and this is a clear indicator that gaps exist in this sector and baselines have yet to be established. It is clear that the same data inadequacies present in other sectors, particularly in relation to liability, are also present here. For the purpose of MRV, no activity data has been collected since 2010 to identify clean technology in industries. Examples of useful data questions for cement industries would include: what is their production capacity and what are their methods of generating energy for the production of clinker? What mitigation efforts are included in Nigeria's NDC with regard to emission reduction potentials across the cement industries? For example, a cement industry using one (1) tonne biomass of sawdust or briquettes of wood to produce clinker according to IPCC standards is expected to emit 3.667tCO2eq, and this information might offer a new way of gathering MRV data for the NDC. It should be noted that studies sponsored by UNDP in collaboration with the Department of Climate Change and the Federal Ministry of Environment are ongoing, aiming to establish baselines for the IPPU sector and to collate activity data for the sector. The Department of Climate Change, the Federal Ministry of Environment, and the European Union have also trained local MRV experts in this sector.

3.1.4 Agriculture, Forestry and Other Land Use (AFOLU)

These sectors hold a large carbon sink and produce large emissions because of the anthropogenic nature of their activities. However, the data and activities noted in the REDD strategy can only be found in the annexure of the Biennial Update Report (BUR) or in National communications. In the present NDC, little has been captured in this sector except in relation to smart agriculture, and even here, MRV data about emissions reductions is not captured. We have records for the number of livestock in the country but no emission estimate in relation to livestock, which of course forms part of the activity data in Agriculture. There are no data about the estimated reduction of GHG in grasslands or cropland (both these are parameters in GHG inventory using the IPCC methodology).

The Nigeria REDD++ programme trained many foresters from academia, MDAs, CBOs, and NGOs in MRV in the forestry sector, collaborating with the Food Agricultural Organization (FAO) from 2017 to 2018 in Akure, Ondo state to offer this. MRV was conducted in 5 ecological zones; the Mangrove, Lowland Rain forest, Highland Rain forest, Deciduous forest, and Sahel Savannah. The outcome was the preparation of Forest Reference Emission Level (FREL) and the establishment of defined carbon estimates.

3.1.5 Transport

There is considerable experience with tracking progress towards absolute emission reduction targets in the transport sector. For example, any variation in our NDC type, including emission reduction from a base year, is capable of reducing our estimated emission by (270 MtCO2 equivalents) in the transport sector if the year 2000 was initially taken as a base year. The Nigeria NDC has not embarked on MRV activity data since 2015 and has no trajectory projection or population data as parameters for MRV in that sector. The expansion of the mass transport programme to reduce emission has not succeeded anywhere (with the exception of the Lagos State BRT buses and train services) and all mitigation services to reduce cars on the road have been fruitless.

The major challenge for the transport sector is the enforcement of policy and regulatory measures. In 2020, for example, it is expected that cars coming from Europe will mean a reduction of emission by 50gms CO2/100km of movement. But baselines are yet to be set to achieve some form of compliance with policy measures. These must include emission measurements at the point of entry of imported cars.

Another major gap in the 2015 NDC implementation plan for the transport sector is marine transport activities. Ships, for instance, are generally powered by fossil fuels, in most cases by HFO, a residual of the refining process of crude oil. A ship's engine has 1000 times more power than a standard family car. This gives some idea of the quantity of fuels it consumes and consequently the volume of gases and particulate matter emitted. Furthermore, medium scale ships consume in the region of 1,250 litres of HFO per hour, so it is possible to imagine the quantity of emission from55,000 ships globally. There is now a plan to mainstream marine transport activities into the government Economic Recovery and Growth Plan (ERGP), to be included in the formulated draft National Transport Policy as well as in the forthcoming NDC review for the transport sector.

In the previous section, we provided a brief assessment of the core mitigation targets set by the government and highlighted the lack of a clear baseline, climate registry, and robust MRV frameworks: major barriers in assessing the extent of implementation. As of March 2017, the Nationally Appropriate Mitigation Action (NAMA) became available, offering the potential to address the data gap in Nigeria's mitigation work across all sectors.

4.0 Assessment of Nigeria's 2015 NDC Implementation Plan

In conducting a structured, clear, logical assessment of Nigeria's NDC implementation effort, we were guided by the five (5) NDC components: Governance, Mitigation, Adaptation, MRV, and Finance as follows:

4.1 Governance

The policy landscape has been robust, with climate change policy in place alongside other sectoral policies drawn from the five priority sectors. Policies and regulations are critical, offering a powerful way to attract investors to the plan. Although the context of policy is changing so as to tally with the life-threatening effects of climate change, there is still room for improvement in bridging the NDC and economic development gap. It could be argued that a national green growth plan is needed in order to bring together all relevant policies under one 'roof'. This would give greater urgency to the need to drive climate action and green transition in Nigeria in a more coordinated fashion. Another key governance improvement could lie in the passage of the Climate Change Bill which could create an agency and enhance the institutional mandate of such an agency to drive climate action across the country. Additionally, effort is required to stimulate a climate governance framework in the various states across the nation.

4.2 Mitigation

As of March 2017, the Nationally Appropriate Mitigation Action (NAMA) for Nigeria became ready to brighten the potentials of addressing Nigeria's mitigation potentials across sectors. The NAMA is a critical instrument in documenting emission reduction potentialities. For the first time, the NAMA contains two clear energy demand scenarios that could guide a clear mitigation implementation action up to 2030. In Case A, Nigerian economy grows at the rate of 5% per annum, and population growth of 2.5% per annum. The industrial sector grows at the average rate of 5% per annum like all the other sectors resulting in a doubling of the industrial sector by the year 2030. On this it is projected that a total energy demand in the economy when the LCD interventions are implemented, will decrease to 3,278.5 million GJ in 2030 from the 4,961.3 expected in the BaU scenario. This is about 34% decrease.

In Case B: The second BaU sub-scenario involves a tripling of the Nigerian industrial sector by the year 2030. All the other sectors of the economy grew at the 5% per annum rate. For Case B economy wide total energy demand in 2030 is expected to decrease to 4,195.2 million GJ in the mitigation scenario, compared to the BaU energy use of 6,153.5 in that year, about 32% decrease. Under Case A, Nigeria's GHG emissions are expected to grow to about 645.5 Million tonnes CO2e (tCO2e) by the year 2030. This is equivalent to 2.4 tCO2e per person. In the 2015 NDC report, the same assumptions about the growth of the economy and population growth were made, but the industrial sector was assumed to be tripled in size compared to the base year. Under Case B, Nigeria's GHG emissions, is expected to grow to about 900 million tonnes of CO2e. This translated to a per capita emission of about 3.4 tCO2e.(see the **tables** in Appendix I)

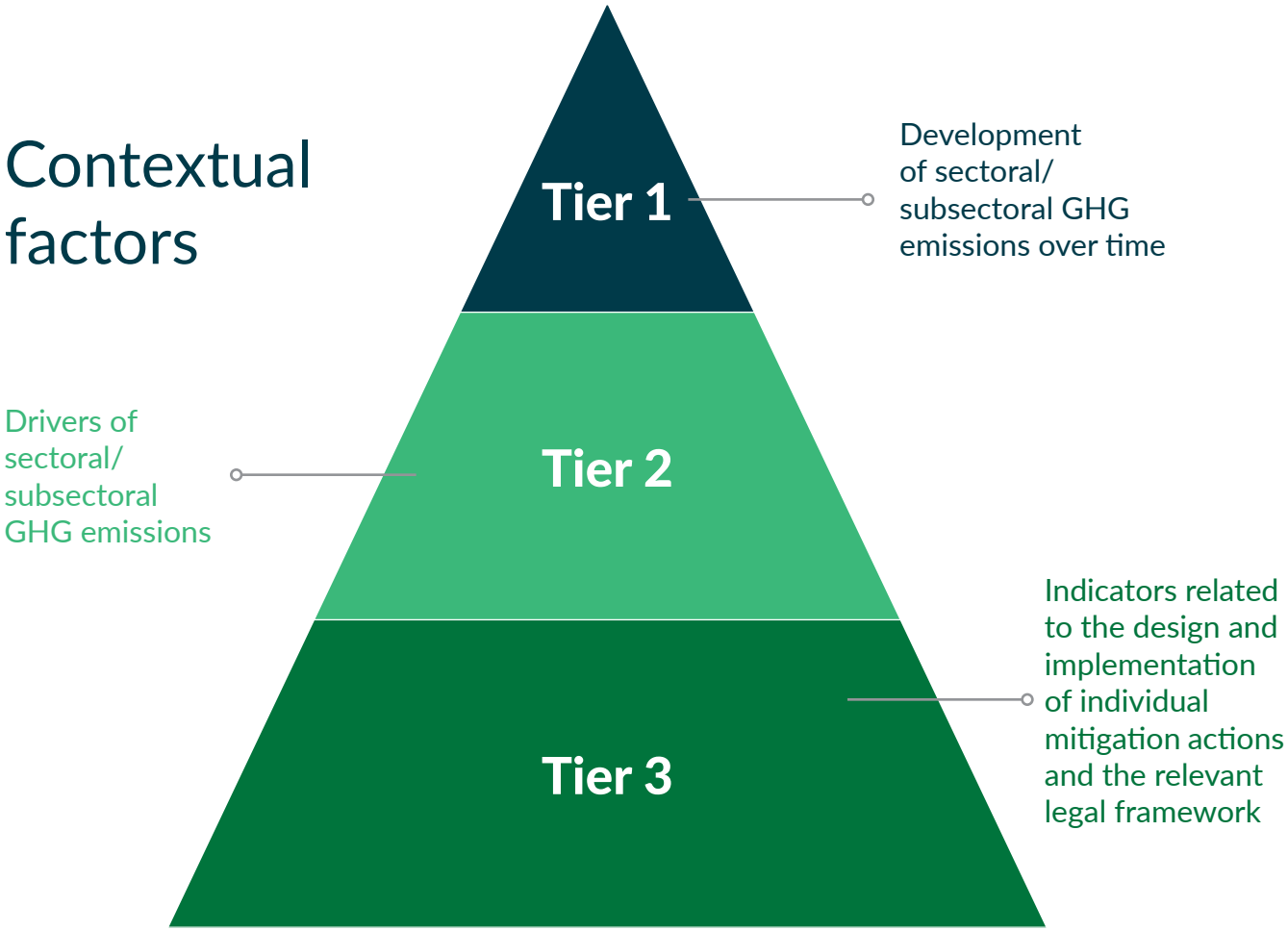
4.3 Adaptation

The Building Nigeria's Response to Climate Change (BNRCC) project produced the NASPA-CCN. This identified climate change vulnerabilities and contained guidance to develop a comprehensive climate change adaptation strategy. NASPA aims to strengthen the existing energy infrastructure by developing and diversifying secure energy backup systems to ensure that both civil society and security forces have access to emergency energy supply. Vision 2020 also includes a number of concrete adaptation targets such as the establishment of a 1,500km 'green wall' in 11 states bordering the Sahara to reduce the rate and speed of desertification. A number of policy approaches are helping to develop and implement sectoral strategies, measures and initiatives for effective adaptation responses. However, action towards promoting large scale adaptation remains limited and this offers a major area for improvement in the new NDC.

4.4 Measurement, Reporting and Verification (MRV)

MRVs are generally accepted as critical to successful implementation of NDCs. Hence the need for countries to conduct GHG Inventory of gases including Carbon dioxide, Methane and Nitrogen Oxide. The current status of Nigeria's MRV effort is that the government and its development partners are investing to develop capacity for MRV. Using IPCC methodology, Nigeria is conducting GHG Inventories in 5 sectors: Energy, Waste, AFOLU and IPPU. Nigeria is utilising secondary data (default values) in MRVs under the IPPU sector. However, the Federal Ministry of Environment in partnership with the European Union has trained Nigerians in how to generate and gather GHG Inventory data. The country is in transit from Tier1 to Tier 2 of the GHG Inventory (see **Figure 4** below).The MRV report goes into the National Communication (NC – Nigeria submitted its third NC in 2019); Biennial Update Report (BUR)-sequel to the submission of the country's first Biennial Update Report (BUR1) to the UNFCCC in 2018, the processes of BUR2 was initiated with in a meeting of a Local Project Appraisal Committee (LPAC) which recommended a stakeholder Workshop which was held in September, 2020 to kick off the implementation of BUR2 within the expected time-frame of project implementation August 2020 to August 2022; and International Consultative Analysis (ICA).

Figure 4: *The tiered approach to monitoring NDC sector action plans*



4.5 Finance:

Climate finance is the bedrock of meeting Nigeria's mitigation and adaptation commitments. It has to be noted that Nigeria has accessed international climate finance including the Green Climate Fund (GC, Adaptation Funds, the International Fund for Agricultural Development (IFAD), Climate Investment Fund, the Forest Carbon Partnership Facility (SFCPF – World Bank), UN-REDD+ Programme and UNDP-NDC Support Programme. Nigeria has also issued a first and second Sovereign Green Bond (in 2017 and 2019) respectively to fund a pipeline of projects, all targeted at reducing emissions and moving towards a greener economy. **Table 3** below shows Nigeria's climate finance status. Unfortunately, in most cases the country does not have direct access to these funds, with access coming instead through a third party.

Table 6: *Climate finance status in Nigeria*

S/N	INSTITUTION	AMOUNT ($M)
1.	Green Climate Fund (GCF)	172.7
2.	Global Environmental Facility (GEF)	102.94
3.	System for Transparent Allocation of Resources (STAR-GEF), (Land Degradation, Biodiversity, and Climate Change)	64
4.	Adaptation Funds	2.98
5.	UN REDD+ Funds	8.5
6.	International Fund for Agricultural Development (IFAD)	317.6
7.	Forest Carbon Partnership Facility (FCPF)	8.93
8	Climate Investment Fund (CIF)	250
9.	Nigeria Sovereign Green Bond (first and second Issue)	72.6

Nigeria has received a disproportionately low level of adaptation finance given its vulnerability, as shown above:

5.0 Recommendations

From the foregoing analysis, it could be deduced that the old NDC implementation strategies were fraught with lapses and gaps. The inclusion of Waste and Water sectors in the forthcoming new NDC is a welcome development by critical stakeholders in Nigeria. The marine environment that was omitted in the old NDC has now been captured. To have an effective and results-oriented new NDC, is important to put in place an NDC implementation index, as well as monitoring tools to track progress. These tools can then guide policy direction.

Analyzing the NDC's implementation index in order to guide policy direction can be achieved in two steps. The first will involve a detailed elaboration of the specific status of Nigeria to understand how it can achieve its NDC targets across sectors, looking in particular at the Governance, Climate Financing, MRV, Mitigation and Adaptation Components of the NDC's implementation activities. This will provide information to guide how the achievements of desired targets are rate, in lieu of identified component-specific indicators. The second step involves the use of averaged indicator ratings and component weightings in the development of the NDC's implementation indices.

Based on the review of NDC documentation and using the 5 NDC implementation components we hereby propose that the following gaps need to be filled in the next NDC:

Table 7: *NDC implementation gap analysis*

NDC Implementation Component	Activity
Governance	1. Review current institutional arrangements 2. Establish a Joint Task Force (JJT) or a coordinating team to oversee the NDC implementation. 3. Set up other governance/institutional arrangements 4. Build capacity within government 5. Engage external stakeholders 6. Develop legal frameworks
Mitigation	1. Review the current mitigation policy landscape 2. Set up institutional arrangements for the coordination and oversight of mitigation activities 3. Analyse the national mitigation potential in order to identify priority sectors and mitigation options 4. Conduct a detailed appraisal of priority actions for key sectors 5. Design mitigation policies 6. Access financing for mitigation actions 7. Implement mitigation policies 8. Design and implement a mitigation MRV system 9. Prepare for future NDCs
Adaptation	1. Review the current adaptation policy landscape 2. Undertake groundwork and governance 3. Undertake preparatory work for adaptation plans 4. Access financing for adaptation actions 5. Implement policies, projects and programmes 6. Monitor and report on progress and effectiveness of adaptation actions
Finance	1. Review the climate finance landscape 2. Establish institutional arrangements for the oversight and coordination of climate finance activities 3. Compile an overall costing for the NDC 4. Identify funding gaps and needs 5. Assess public and private financing options 6. Develop a country climate investment plan 7. Secure direct access to international climate funds for national and subnational institutions 8. Develop a project pipeline and financing propositions that can be put forward to different financing sources 9. Increase private sector engagement and overcome barriers to investment 10. Design and implement a climate finance MRV system
Transparency/MRV	1. Review current MRV activities 2. Establish institutional arrangements for the oversight and coordination of MRV activities 3. Assess data gaps and needs 4. Design MRV system for mitigation, adaptation and finance 5. Establish data management processes 6. Build MRV capacity 7. Improve MRV system over time

6.0 Conclusion

The Paris Agreement and the attendant Nationally Determined Contribution (NDC) tool remains a turning point in countries' efforts to achieve mitigation and reach adaptation milestones in order to curb the monster called Climate Change. A detailed and results-oriented delivery of activities in the NDC implementation index for Nigeria and the consequent monitoring and tracking of efforts will go a long way towards positioning the country on the path towards a low-carbon and resource-efficient trajectory. This will also allow Nigeria to seize the moment and take advantage of the opportunity arising from the emerging New Market Mechanism (NMM) of the Paris Agreement, which is expected to take off in 2023. Attendant opportunities for technology transfer, global partnership, capacity development, funding and similar will then follow.

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Appendix I

The Paris Agreement and the attendant Nationally Determined Contribution (NDC) tool remains a turning point in countries' efforts to achieve mitigation and reach adaptation milestones in order to curb the monster called Climate Change. A detailed and results-oriented delivery of activities in the NDC implementation index for Nigeria and the consequent monitoring and tracking of efforts will go a long way towards positioning the country on the path towards a low-carbon and resource-efficient trajectory. This will also allow Nigeria to seize the moment and take advantage of the opportunity arising from the emerging New Market Mechanism (NMM) of the Paris Agreement, which is expected to take off in 2023. Attendant opportunities for technology transfer, global partnership, capacity development, funding and similar will then follow.

Energy Demand in 2030 (BaU and LCD Scenarios) - CASE A

Economic Sectors	Business as Usual (Million GJ)	Low Carbon Development (LCD) Demand (Million GJ
Households	2,139.4	1,177.0
Agriculture	1.7	1.1
Commercial	33.3	20.9
Industry	2,384.5	1,833.4
Transport	400.7	244.6
Other Electricity Uses	1.8	1.4
Total	**4,961.3**	**3,278.5**

Energy Demand in 2030 (BaU and LCD Scenarios) - CASE B

Economic Sectors	Business as Usual (Million GJ)	Low Carbon Development (LCD) Demand (Million GJ
Households	2,139.4	1,765.57
Agriculture	1.7	1.66
Commercial	33.3	31.36
Industry	3,576.7	2,750.17
Transport	400.7	244.6
Other Electricity Uses	1.8	1.4
Total	**6,153.5**	**4,195.2**

Tables (3 and 4) above, shows Nigeria low-carbon development opportunities, that is, by 2030, under Case A BaU scenario (FGN NAMA 2020)

Appendix II

NAMA Opportunities in Nigeria and their Emission Reduction Potentials by 2030

S/N	NAMA Opportunity	Estimated 2030 Emission Reduction Opportunity (Million tCO2e)	Comments: General and on Probable Funding Type
1.	Economic Sector-Wide Energy Efficiency Improvement: — End Use Electric Energy Efficiency — End Use Non-Electric Energy Efficiency Improvement	186.8	— Will cover: residential, industrial, commercial and transportation sectors; — Energy efficiency (EE) measures are noted worldwide to be characterized by many inhibiting barriers, especially in developing countries. A recent report characterized EE projects in Nigeria will in the worst case break even over project lifetimes. Given the uncertainties and the usually inability in to raise financing for EE projects. EE projects should be seen as falling under the category of NAMAs for which international funding will be sought.
2.	Reduction of Flaring of AG	166.9	— Although cost/tCO2e of this intervention has been reported as negative in a past report, we are of the opinion that the coverage of the flare reduction intervention in that report must not have been as robust as the one covered in a more recent report. — Even with the realization of historical reluctance of upstream Nigerian Oil and Gas operators and the Nigerian Government to fund an aggressive gas flare-out program and the marginal impact of regulations to catalyze more aggressive gas flaring reduction. It seems reasonable that gas flare-out program should be funded jointly between the Nigerian government and the joint venture partners in the oil and gas sector
3.	Increased Penetration of Renewable Power to Grid and Off-grid Generation	114.3	— A series of initiatives are ongoing by government, private and international development partners as well through PPPs — Given these developments, it is fair to assume thata mixed financing mode can be successfully organized for this type of NAMA. This will include: private sector financing of some of these projects (grid and off-grid) as NAMA projects; partly government equity funding with bilateral/ multilateral support under NAMA and the other available globalclimate funds.

S/N	NAMA Opportunity	Estimated 2030 Emission Reduction Opportunity (Million tCO2e)	Comments: General and on Probable Funding Type
4.	Dedicated Utilization of CCGT as Gas-fired Generation Option to the Grid	100.9	— This will cover: closing of the cycle of 70% of the SCGT system supplying power to the grid in 2015; and deliberate implementation of CCGT for new capacity addition during the period 2015 - 2030; — Although a recent report indicated that the cost per tCO2e of this option may be negative (as low as negative US$15/tCO2e), the implementation of the constituent power projects could be partly funded by national budget appropriation and partly by bilateral / multilateral funding. For example, the FGN can mainstream the cost of the closing of some of the existing SCGT currently supplying power to the grid and some future CCGT capacity expansion into future national budget between 2017 - 2020, while seeking bilateral and multilateral cooperation for the balance under the international NAMA and global climate funding.
5.	Reduction of Transmission and Distribution Losses in the Power Sector	69.1	— Definitely this is an intervention that is calling for immediate attention. According to data utilized in running LEAP, transmission and distribution losses on the Nigerian grid can be as high as 35% in 2015. This NAMA program will accelerate the slow intervention that is ongoing to bring these loses to about 12% per annum. — Funding can be by a combination of government sources and support from bilateral and multilateral sources for NAMA projects and programs should be used/ Definitely, private sector equity funds from the current private sector owners of DISCOs will be a necessary component of the funding of the distribution losses.
6	Enteric Fermentation in Agriculture Sector	30.2	— We recommend that this NAMA program should also be funded by a combination of national funding from government and bilateral/multilateral funding.

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