Developing Institutional Framework for the Energy Efficiency Act and Regulations targeting energy intensive sector in Nigeria

Implementation Guidelines for National Energy Efficiency & Conservation Bill

December 2024

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1. Introduction

The *Implementation Guidelines* are developed to support the effective enforcement of Nigeria's National Energy Efficiency and Conservation (NEE&C) Bill. These guidelines outline a comprehensive approach for achieving the Bill's objectives, including setting energy efficiency and conservation targets and integrating energy efficiency and conservation programs into national frameworks. They serve as a roadmap, detailing actionable plans and timelines for implementing energy efficiency and conservation initiatives across key sectors in Nigeria, including residential, transportation, industrial, and commercial and public services sectors. The other sectors identified in the bill, such as petroleum, agriculture and water/sanitation, can refer to these guidelines to create their own target-setting approach and implementation roadmaps following similar timelines.

Nigeria's energy needs and current energy infrastructure underscore the vitality of creating an enabling framework and ecosystem for energy efficiency and conservation measure implementation in the country. Benefits of such implementation range from savings in energy and energy security, to the creation of an entire ecosystem of energy efficiency and conservation measures that bring together multiple departments and agencies under one umbrella to streamline efforts into creating an energy-efficient Nigerian economy.

The NEE&C Bill, outlines measures that can deliver multifold energy efficiency and conservation benefits. It aims to promote energy efficiency and conservation initiatives and encourage the adoption of energy-saving measures throughout Nigeria. This bill establishes a legal and institutional framework to boost the implementation of energy efficiency and conservation strategies, stimulate policy and regulatory actions, and align energy conservation efforts with socio-economic development and environmental sustainability objectives.

Error! Reference source not found. outlines the benefits can be obtained by implementing the NEE&C B ill in Nigeria.

Table 1: NEE&C Bill provisions and benefits

Provision	Outcomes
Legal and Institutional Framework	• The Bill establishes a legal and institutional framework to promote energy efficiency and conservation. • Implementing this provision designates responsibilities for the many different partner MDAs and the lead Nodal Agency for effective decision making on energy efficiency and conservation initiatives.
Coordination and Implementation	• The Bill facilitates coordination among responsible authorities and agencies to achieve long-term energy efficiency and conservation goals. • By implementing this provision, governance structures through administrative instruments like rules, regulations, policies, guidelines, and circulars are established.
Sector-Specific Interventions	• The Bill promotes energy efficiency and conservation in key demand sectors such as industries, buildings, commercial and public services, and transportation. • It outlines the approach for setting of national targets and reporting frameworks for energy efficiency and conservation, and their implementation can outline the goals behind the Bill's overall formulation.

Financial Mobilization	• The Bill provides the framework for mobilization of finance and other resources necessary for the effective implementation of energy efficiency and conservation measures. • It creates a framework and structure to ensure adequate financing for energy efficiency and conservation initiatives, and its implementation can ensure that proper funding and capital keeps getting infused into projects whenever required.
Monitoring and Evaluation	• The Bill establishes a common framework of Monitoring and Evaluation (M&E) metrics to track progress in implementation. • Implementation of the Bill's M&E provisions ensure compliance with energy conservation strategies and targets through regular M&E.
Awareness and Capacity Building	• The Bill facilitates dissemination of knowledge on energy efficiency and conservation and develops human capital capacities to enable the identification, development, and implementation of energy efficiency and conservation projects. • Implementing these provisions can encourages energy users (designated and others) to save energy through campaigns and awareness workshops.

The implementation plan is designed to guide stakeholders in leveraging the benefits of energy efficiency and conservation. For each sector targeted, it outlines the relevant provisions of the NEE&C Bill alongside existing measures within that sector. The plan extends this analysis into a detailed implementation framework, with timelines for each step categorized into short- and medium-term measures. It also identifies the Ministries, Departments, and Agencies (MDAs) responsible for executing each action item within each sector. **Figure 1** provides an overview of these partner MDAs and their working structure. Together with the Nodal Agency, the Energy Commission of Nigeria, these MDAs form the National Energy Efficiency Committee (NEEC), which is responsible for decision-making on energy efficiency and conservation projects across Nigeria.

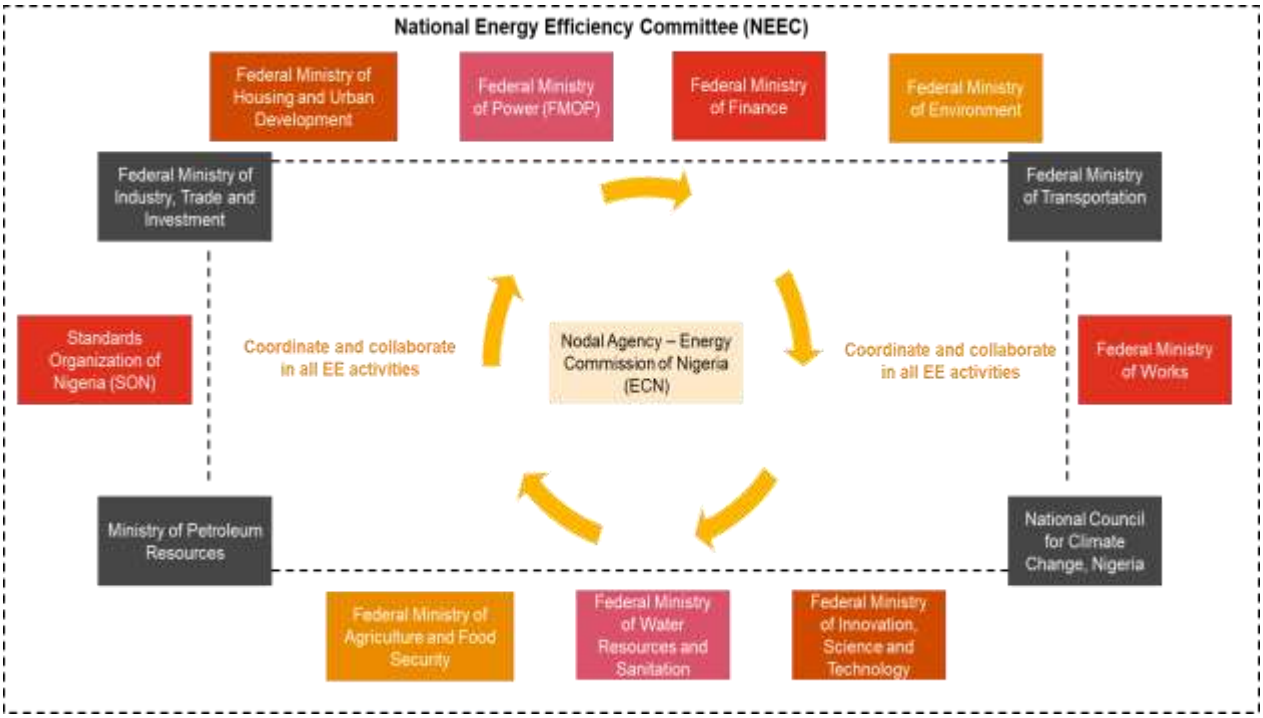

Figure 1: Governance Structure of the NEE&C

2. Sectoral Energy Efficiency Action Plans

Nigeria is a signatory to the 2015 Paris Climate Agreement, with well-defined Nationally Determined Contributions (NDCs). Within these NDCs, the country aims to reduce greenhouse gas emissions to below 20% of the Business-as-usual (BAU) scenario by 2030, with its domestic resources. This target can be increased to 47% for the country with international support, which would include financing, technology transfer and capacity building investments from other countries into Nigeria.[1]

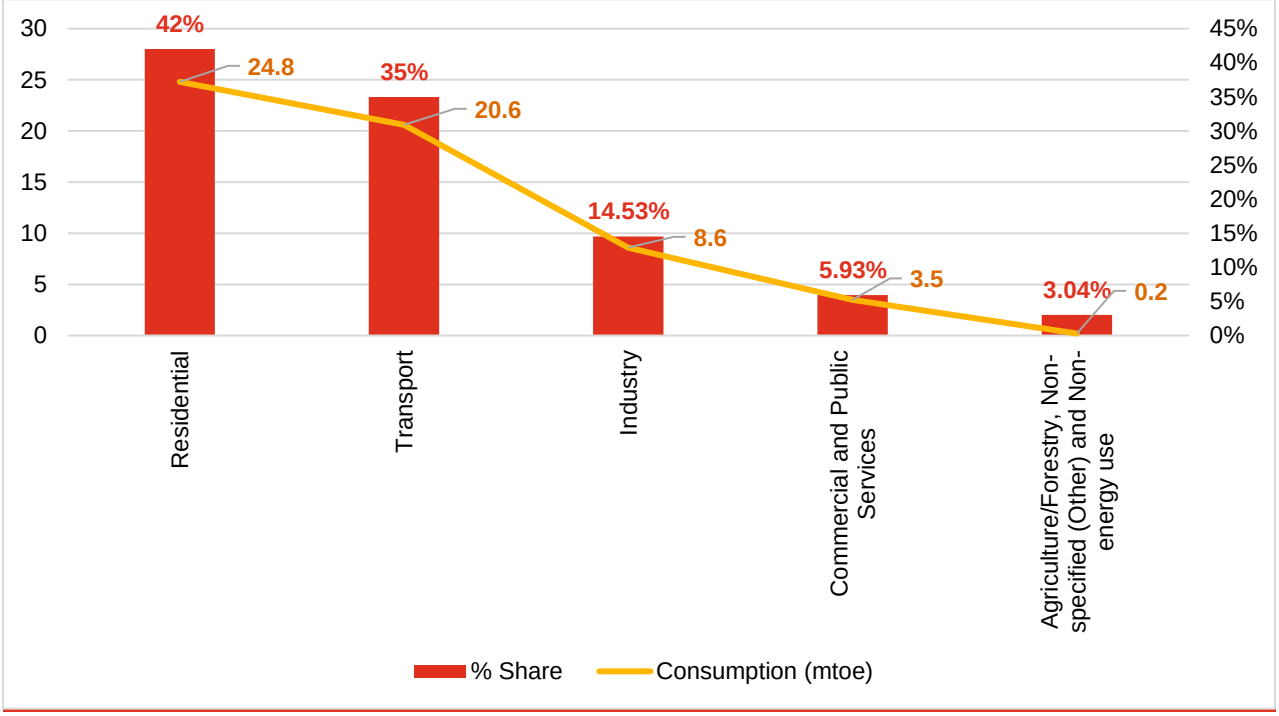

Figure 2: Share of energy use by sector (2022)[2]

Figure 2 indicates the final energy use in sectors covering - households, transportation, industries, commercial and public services and agriculture/forestry, non-specified (other) and non-energy use. Nigeria has established ambitious targets for energy efficiency, aiming to achieve a 20% reduction in energy intensity by 2030 and a 30% reduction by 2040[3]. Additionally, the Nigeria Energy Transition Plan has set a goal for carbon neutrality by 2060. These objectives are part of the government's initiatives to fulfil its commitments under the Paris Agreement on climate change. Enhancing energy management in the building and industrial sectors presents an accessible and immediate opportunity for Nigeria to realize significant benefits in the short term.

The Nigerian Energy Efficiency Policy (NEEP) and the National Renewable Energy and Energy Efficiency Policy (NREEEP) form the cornerstone of the nation's energy efficiency initiatives. These policies outline a

[1] https://unfccc.int/sites/default/files/NDC/2022-06/Approved%20Nigeria%27s%20INDC_271115.pdf
[2] IEA Website
[3] https://www.climate-transparency.org/wp-content/uploads/2021/01/Nigeria-CT-2020.pdf

"30:30:30" strategy, which aims to augment the country's power capacity by 30 GW by the year 2030, with renewable energy sources accounting for 30% of the total energy mix.[4]

In 2021, Nigeria unveiled the Energy Transition Plan (ETP), shortly after the COP 26 Summit. This is a home-grown, data-backed, multi-pronged strategy geared towards the country's goal of achieving net-zero by 2060. This plan has identified the **power**, **transport**, **oil and gas**, **cooking** and **industrial** sectors as responsible for 65% of the country's GHG emissions and aims to address the same. This plan aims to transition into clean energy production while driving economic growth for the Nigerian population at the same time, with concepts such as **including gas as a "transitionary fuel"**. Table 2 gives a summary of what this plan has in store for each targeted sector.

Table 2: Nigeria Energy Transition Plan (NETP)[5]

Sector	Overarching goal (2060)
Power	• Transition away from fossil fuel-based generators • Meeting baseline power demand through an initial expansion of gas generation capacity, such that it can be later electrified and integrated with renewables • Ramping up of renewables-based electrification to support decarbonizing sectors such as buildings and industry
Transport	• Reduction of ~97% emissions through EV uptake in passenger cars segment
Oil and gas	• Global transition away from oil and gas in the long run to reduce emissions • Reduce flaring and fugitive emissions
Cooking	• Replace charcoal, kerosene and firewood to accomplish SDG7 by 2030 • Transition into electric cookstoves and biogas post-2030 for further decarbonization
Industry	• Support decarbonization in hard-to-abate sectors such as ammonia and cement to reduce emissions by ~97% • Shift to 100% zero-emission fuels for industrial heating

The following sub-sections – 2.1 to 2.4, present an overview of the current policies for the residential, transport, industrial, and commercial and public services sectors, along with the methodology for setting targets specific to each sector.

[4] https://www.enerdata.net/estore/energy-market/nigeria/
* Other energy-intensive sectors such as agriculture and forestry, sanitation and non-energy use.
[5] https://www.energytransition.gov.ng/

2.1. Residential Building Sector

2.1.1. Sector Overview

Nigeria's residential building sector is pivotal to the country's socio-economic development. The residential building sector serves a rapidly urbanizing population of over 200 million people. The demand for housing and commercial spaces, driven by urbanization and population growth, places immense pressure on energy resources. Currently, the residential sector is a predominant consumer of energy, with biomass (firewood, charcoal, briquettes) being the primary sources, especially for cooking and lighting. The residential sector consumes approximately 24.8 million tonnes of oil equivalent (Mtoe) of energy, accounting for 42%[6] of the total primary energy consumption in Nigeria. Figure 3 shows the total final energy consumption by residential sector

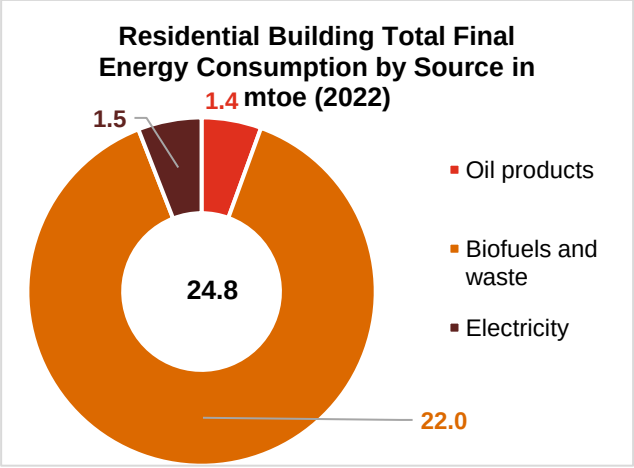

Figure 3: Residential total final consumption by source in mtoe, Nigeria, 2022

Despite the growing energy demand, only 58.2% of households are connected to the national electricity grid. As shown in Figure 4, with 94% of energy used for cooking and 3% for lighting[7], there is a significant opportunity to implement energy-saving interventions. Residential building emissions occur directly (burning fuels for heating, cooking, etc) and indirectly (grid electricity for air conditioning, appliances, etc.).

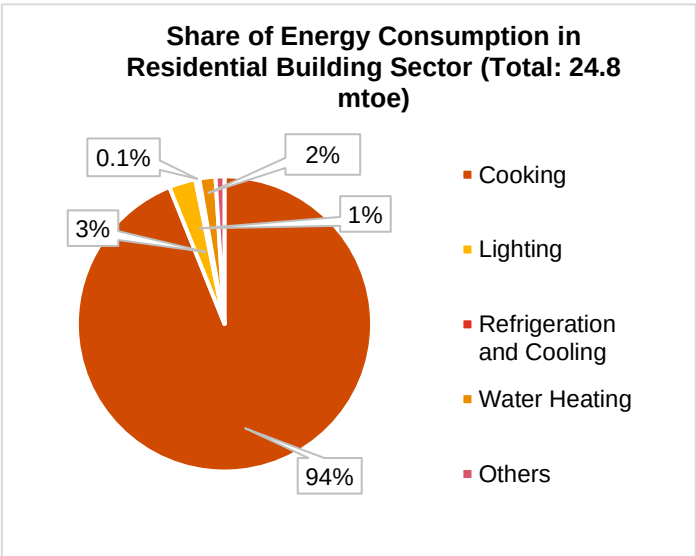

Figure 4: Residential Sector - Share of Energy Consumption (%)

In Nigeria, according to BEEC, the demand for ventilation and the cooling of residential buildings accounts for up to 29% of energy use[8]. As more buildings are being added to the housing stock and, bearing in mind the country's hot climate, the energy efficiency of buildings needs to be thoroughly considered going forward in order to prevent unsustainable energy demands for cooling.

Improving energy efficiency in residential buildings is crucial to reducing energy consumption, lowering greenhouse gas emissions, and alleviating strain on Nigeria's electricity grid.

[6] Nigeria Energy Market Report | Energy Market Research in Nigeria (enerdata.net)
[7] NIGERIA RESIDENTIAL ENERGY DEMAND-SIDE SURVEY REPORT 2024
[8] National Building Energy Efficiency Code (BEEC)

2.1.2. Past and Ongoing Sectoral Interventions

Nigeria's residential building sector is undergoing significant transformation as part of a broader effort to enhance energy efficiency and reduce energy consumption. Recognizing the pressing need to address the high energy usage for cooking and lighting, the government has introduced a series of initiatives aimed at promoting the adoption of energy-efficient technologies and practices. Key policies, such as the National Building Code, National Renewable Energy and Energy Efficiency Policy (NREEEP), and the Building Energy Efficiency Code (BEEC), set standards for energy-efficient building design, construction, and appliance use. These initiatives are designed to improve energy security, reduce greenhouse gas emissions, and support sustainable development across the country. By implementing these measures, Nigeria aims to achieve significant energy savings and foster a culture of energy efficiency in the buildings sector.

Table 3: Energy Efficiency policies and regulations in Residential Sector

Policy Name	Year	Description
National Building Code[9]	2006	The Nigerian government has developed and adopted a National Building Code that incorporates energy efficiency guidelines. This code sets minimum standards for building design, construction practices, and materials to ensure energy-efficient buildings, covering aspects such as insulation, ventilation, and the use of energy-efficient materials. The National Building Code (NBC) of Nigeria includes energy efficiency standards for building design and construction to reduce energy consumption. The code's energy efficiency standards focus on: • Insulation: Adding insulation to roofs • Materials: Using energy-efficient materials • Renewable energy: Integrating renewable energy sources • Lighting: Limiting the maximum lighting power density for residential and office spaces • HVAC: Setting minimum performance for air-conditioning split units • Building envelope: Ensuring proper building envelope performance
National Renewable Energy and Energy Efficiency Policy (NREEEP)	2014	The NREEEP action plan focuses on energy security and climate change mitigation by implementing MEPS for appliances, transitioning to gas for cooking, and integrating renewable energy. The "30:30:30" scheme plans to add 30 GW of power capacity by 2030, with renewables contributing 30% of the country's energy mix. Implementing the NREEEP action plan is expected to result in a 58% energy saving by 2050, considering the year 2010 as the baseline year.
Building Energy Efficiency Guideline[10]	2016	Developed by the Federal Ministry of Power, Works, and Housing[11], this guideline aims to ensure compliance with efficient building codes, which can result in at least 40% energy savings against BAU building designs. It emphasizes the importance of adopting energy-efficient construction practices and technologies in new buildings.

[9] https://epp.lagosstate.gov.ng/regulations/National_Building_Code_of_Nigeria_2006.pdf
[10] https://energypedia.info/images/c/c7/Building_Energy_Efficiency_Guideline_for_Nigeria_2016.pdf
[11] In Nigeria, Federal ministry of Power, Federal ministry of Works and Federal Ministry of Housing and Urban Development are separate agencies as on date.

Policy Name	Year	Description
National Energy Efficiency Action Plan (NEEAP)	2016	NEEAP emphasizes the importance of Standards and Labelling (S&L) programs to ensure that appliances meet minimum energy performance standards. Nigeria has drafted minimum energy performance standards (MEPS) for various appliances, such as refrigerators, air conditioners, and lighting. The Standards Organization of Nigeria (SON) is responsible for the development of these MEPS. The enforcement of these standards, however, is overseen by the Energy Commission of Nigeria (ECN). The implementation of MEPS for appliance labeling has the potential to save Nigeria 28% of total final energy compared to the 2020 baseline.
Phasing Out Incandescent Bulbs	NA	Nigeria is working towards phasing out incandescent bulbs to promote energy efficiency and reduce energy consumption. This initiative is part of the broader efforts under the National Energy Efficiency Action Plan (NEEAP). The phase-out aims to replace incandescent bulbs with more energy-efficient alternatives like LED bulbs, which consume less power and have a longer lifespan.
Building Energy Efficiency Code (BEEC)[12]	2017	Introduced in 2017, the BEEC sets minimum energy efficiency requirements for new buildings. It aims to reduce energy consumption and greenhouse gas emissions by promoting the use of energy-efficient materials and technologies. The code provides recommendations for lighting, roofing, air-conditioning (AC), fenestrations, and shading. A 49% energy saving potential is projected from BEEC-compliant buildings, ensuring annual energy savings compared to business-as-usual (BAU) scenarios.
National SLCP Plan	2018	• Increase in population using **modern fuels for cooking** (LPG, electricity, kerosene, biogas, solar cookers): 80% of H/H using modern fuels for cooking in 2030 • Replacement of traditional biomass cookstoves with more **efficient improved biomass stoves:** 20% H/H using improved biomass stoves for cooking in 2030 • **Elimination of kerosene lamps:** All kerosene lighting replaced by solar lamps by 2022 • **Elimination of HFC Consumption**: 10% of HFCs phased out by 2030, 50% by 2040 and 80% by 2045
Efficient Cookstoves and Clean Cooking Initiatives	NA	The Nigerian Alliance for Clean Cookstoves works to distribute clean cookstoves and promote LPG usage. The SEforALL Action Agenda seeks to replace 50% of traditional firewood consumption for cooking with improved cookstoves by 2020 and 80% by 2030. Efforts are also made to provide development funds to support the adoption of clean cookstoves. Programs have been launched to reduce dependency on firewood, partnering with international organizations to support women-owned enterprises and local entrepreneurs in producing and marketing fuel-efficient stoves.

[12] https://engineersforum.com.ng/wp-content/uploads/2021/06/Building-Energy-Efficiency-Code.pdf

2.1.3. Target Setting Approach

Nigeria has set ambitious targets for residential energy efficiency through various national plans and international commitments. These targets set by various existing policies and regulations mentioned below aim to enhance energy access, improve energy efficiency, and mitigate climate change impacts:

1. **Electricity Access**: Increase electricity access to 75% (90% in urban areas and 60% in rural areas) by 2020 and 90% by 2030.

2. **Clean Cooking**: Replace 50% of traditional firewood consumption for cooking with improved cookstoves by 2020 and 80% by 2030. Promote the use of LPG at reasonable costs for Nigerians.

3. **Efficient Lighting**: Expand efficient lighting to almost 100% of households by 2030.

4. **Minimum Energy Performance Standards (MEPS)**: Implement MEPS for appliances such as air conditioners, refrigerators, and lighting. The enforcement of MEPS is projected to yield electricity savings of 34.3% by 2030 compared to the 2020 baseline.

5. **National Renewable Energy and Energy Efficiency Policy (NREEEP)**: The NREEEP action plan focuses on energy security and climate change mitigation by implementing MEPS for building appliances, transitioning to gas for cooking, and integrating renewable energy. The "30:30:30" scheme plans to add 30 GW of power capacity by 2030, with renewables contributing 30% of the country's energy mix. Implementing the NREEEP action plan is expected to result in a 58% energy saving by 2050, considering the year 2010 as the baseline year.

Nigeria's commitment to enhancing energy efficiency in the residential sector is reflected in its ambitious targets and comprehensive policy framework. By increasing electricity access, promoting clean cooking solutions, expanding efficient lighting, and enforcing Minimum Energy Performance Standards (MEPS), the country is on a path to significantly reduce energy consumption and emissions. As Nigeria continues to implement the existing strategies, there is a need to follow a structured approach to set future targets for residential building energy efficiency as illustrated below:

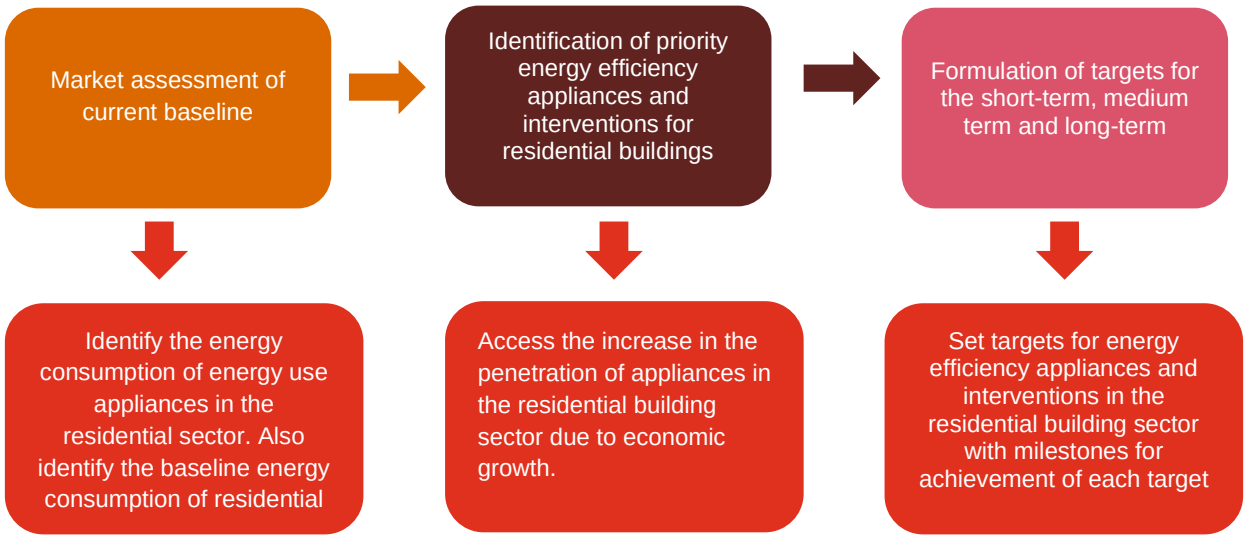

Figure 5 Target Setting Approach For Residential Building Sector

A detailed workplan has been outlined in Chapter 3 to introduce the following policy measures for the residential building sector in line with the NEE&C bill -

- Develop and enforce regulations for Buildings Energy Codes to regulate the design and operational aspects of buildings.
- Develop guidelines for green buildings, including certification and rating mechanisms.
- Mandate energy audits and management practices for high energy-consuming buildings.
- Raise awareness and build capacity for energy efficiency in the residential sector.
- Identify and categorize energy consumers into Designated and Non-Designated Energy Consumers.
- Conduct regular energy audits for designated energy consumers in the buildings sector.
- Develop a Sectoral Energy Efficiency and Conservation Action Plan for the building and residential sector.

2.2. Transport Sector

2.2.1. Sector Overview

Nigeria's transport sector is a critical component of its economy, facilitating trade and mobility across its vast landscape. The sector encompasses various modes, including road, rail, air, and maritime transport. Despite its potential, the transport infrastructure has historically faced challenges such as underfunding, inadequate maintenance, and congestion, particularly in urban areas. Based on the country's current growth trajectory, the transportation demand in the country is expected to more than double by 2050, with a corresponding impact on greenhouse gas emissions.

The Energy Commission of Nigeria (ECN) estimates that the transport sector consumes about **70%** of all fossil fuels used across economic sectors, with 60% of direct CO2 emissions are from transportation out of which passenger vehicles accounts for approximately **72%** of transport emissions in **2020**.Recently, the Nigerian government projected that by 2035, GHG emissions from the transport sector could increase by up to 50%, and by almost 100% by 2050; under the business as usual (BAU) scenario[13].

Road transport is the dominant mode of transportation in Nigeria responsible for over 90% of internal goods and passengers across the country and is the highest contributor to the nation's GDP amongst other sub-sectors. According to data from National Bureau of Statistics, there existed about 11.8 million vehicles in Nigeria in 2018. The number increased to 13 million by April 2021. The vehicle composition includes **57.7% commercial**, **40.98% private**, and **1.32% government and diplomatic** vehicles[14]. With over **60,000 vehicles** imported annually, **85%** of which are used. Many of these vehicles exceed their economic lifespan and exhibit low energy efficiency, contributing to high GHG emissions. The absence of emission standards for vehicles in Nigeria highlights the urgent need for active policies regarding vehicle importation and emissions regulation.

[13] Federal Ministry of Environment. National Climate Change Policy for Nigeria 2021–2030. Federal Ministry of Environment; 2021

[14] National Bureau of Statistics. Road Transport Data (2018). National Bureau of Statistics; 2018.

2.2.2. Past and Ongoing Sectoral Interventions

To enhance energy efficiency in Nigeria's transport sector, several measures have been implemented:

Table 4: Energy Efficiency policies and regulations in Transport Sector

Policy Name	Year	Description
National Transport Policy (NTP)	1993	The NTP serves as a comprehensive framework for the development of the transport sector in Nigeria. It aims to create a sustainable, efficient, and integrated transport system that supports economic growth and enhances the quality of life for citizens. The policy emphasizes the need for multi-modal transport solutions, including road, rail, air, and maritime transport**.**
Nigeria Integrated Infrastructure Master Plan (NIIMP)	2014	NIIMP outlines strategic investments in infrastructure, including transport. It aims to address the infrastructure deficit in Nigeria by prioritizing projects that enhance connectivity and support economic activities.
National Action Plan	2018	The National Action Plan includes plans: • Adoption of **CNG Buses** in Nigeria: 25% all Buses converted to CNG by 2030 • **Introduction of low sulphur Diesel and Petrol:** 50 ppm diesel fuel introduced in 2019; 150 ppm petrol introduced in 2021 Euro IV limits met by all vehicles by 2030 • Elimination of high emitting vehicles that do not meet vehicle emission standards • Reduction of vehicle journeys by car through **transport modal shifts:** 500,000 daily journeys shifted from road to rail & waterways
National Vehicular Emission Control Programme (NVECP)[15]	2011 Revised 2021	Nigeria has set ambitious emissions standards for vehicles, requiring all vehicles to meet **EURO III** limits by **2023** and **EURO IV** by **2030**. This regulatory framework is designed to ensure that new vehicles are more environmentally friendly and efficient.
Clean Energy Transport Scheme (CETS)	2023	Clean Energy Transport Scheme in major Nigerian cities involves the introduction of compressed natural gas (CNG) for buses in public transport.
Presidential Compressed Natural Gas Initiative (PCNGI)[16]	2023	This initiative promotes the adoption of compressed natural gas (CNG) in the transport sector, aiming to reduce reliance on traditional fossil fuels.
National Energy Efficiency Action Plan (NEEAP)		While primarily focused on energy efficiency, the NEEAP includes measures relevant to the transport sector, such as promoting energy-efficient vehicles and reducing emissions from transport activities.

[15] https://www.nesrea.gov.ng/official-flag-off-of-ngecp-nvecp/, https://www.nesrea.gov.ng/wp-content/uploads/2020/02/Control_of_Vehicular_Emissions_from_Petrol_and_Diesel_Engines_Regulation%202011%20.pdf

[16] Presidential CNG Initiative | Pi-CNG

2.2.3. Target Setting Approach

Nigeria is committed to decarbonize its transportation sector. Nigeria has set ambitious targets for all new vehicle sales to be zero emissions by **2040**, as part of its broader commitment to achieving carbon neutrality by **2060**. Current targets include[17]:

- Under its updated Nationally Determined Contributions (NDCs), Nigeria aims to reduce emissions by **20%** relative to business-as-usual scenarios by **2030**, with a conditional target of up to **47%**.
- Nigeria's updated NDCs include specific targets for the transport sector, aiming for a **20% reduction** in emissions by **2030** compared to a business-as-usual scenario. This includes a conditional target of up to **47% reduction**, emphasizing the need for substantial changes in transport practices.
- The government is promoting a shift from private car usage to public transport systems. Plans include the introduction of **100,000 additional buses by 2030, with Bus Rapid Transit (BRT)** systems expected to account for **22.1%** of passenger kilometres by **2035.**
- **Compressed Natural Gas (CNG) Adoption**: A significant policy is the push for **25%** of trucks and buses to operate on CNG by **2030**. This transition aims to reduce emissions from heavy-duty vehicles, which are major contributors to air pollution.
- **Deployment of biofuels** with a targeting a 10% biofuel blend rate by 2030 and 30% by 2036.
- **Post-2030,** the plan includes deploying approximately **3,000 EV charging stations** annually aiming for a 1.5% CAGR in the EV market.
- By **2050**, **20%** reduction in km travelled by passenger car through **mode shift to public transport/E2 and 3 wheelers.**
- To meet the growing demand for transportation, Nigeria plans for **60%** of passenger vehicles to be electric by **2050** with **3 billion EVs** and **60,000 EV charging stations**
- By **2060**, **100%** of the passenger vehicles to be **electric.**

Nigeria's commitment to enhancing energy efficiency in the transportation sector is underscored by its ambitious targets and comprehensive policy framework aimed at decarbonizing the sector. The country has set goals such as achieving zero emissions for all new vehicle sales by 2040, aligning with its broader commitment to carbon neutrality by 2060. To facilitate this transition, Nigeria is focused on reducing emissions by promoting public transportation, adopting cleaner fuels, and expanding electric vehicle infrastructure. As the nation implements these strategies, it is essential to adopt a structured approach for setting future targets in transportation energy efficiency as illustrated below:

[17] https://www.energytransition.gov.ng/transport-2-2/

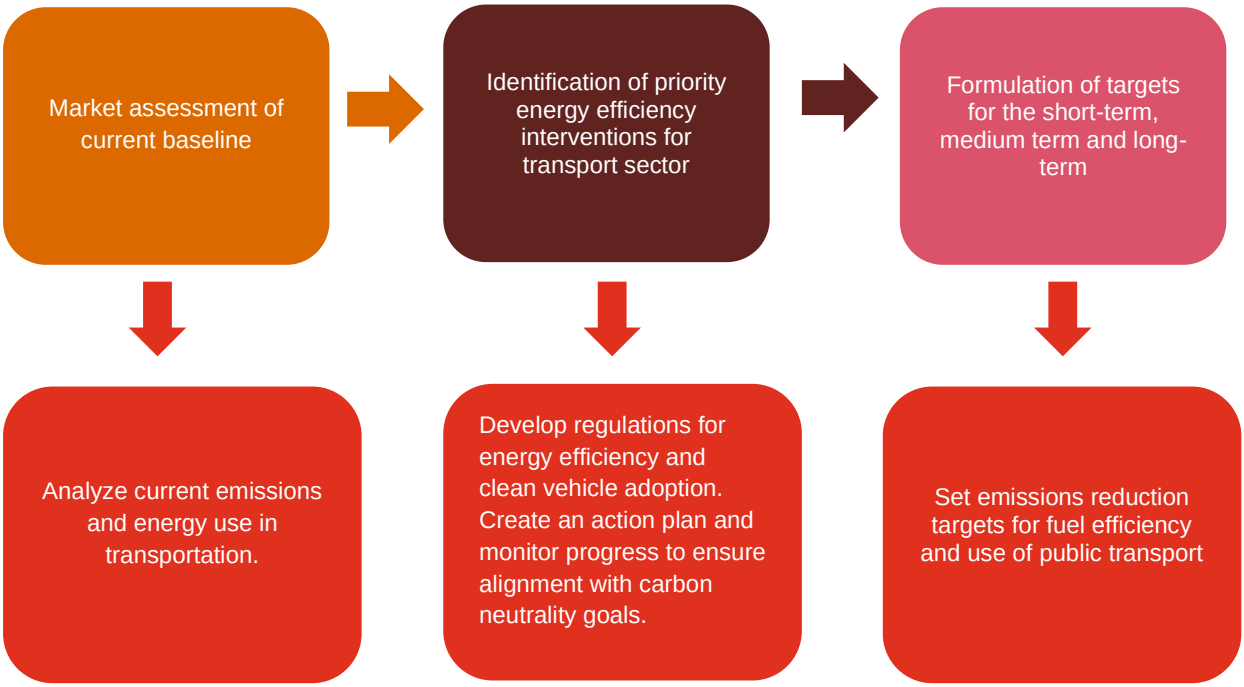

Figure 6 Target Setting Approach for the Transport Sector

A detailed workplan has been outlined in Chapter 3 to introduce the following policy measures for the transport sector in line with the NEE&C bill:

- Develop regulations for vehicle repair and maintenance to ensure energy efficiency.
- Develop policies to encourage adoption of alternate fuel and fuel efficient vehicles.
- Develop a Sectoral Energy Efficiency and Conservation Action Plan for the transportation sector.

2.3. Industrial Sector

2.3.1. Sector Overview

The industrial sector in Nigeria is 3rd largest energy consumer sector after residential building and transport sector, representing a significant portion of the nation's total energy demand. The sub-sectors identified as key focus areas in industries include crude petroleum and natural gas, limestone mining, quarrying and other minerals, metal ore mining and milling, cement, food, beverage and tobacco, textile, apparel and footwear, pulp, paper and paper products, basic metal, iron and steel, agricultural and agro-allied, industrial equipment, other manufacturing, wood and wood products, chemical and pharmaceutical products, non-metallic products, plastic and rubber products, electrical and electronics, transportation, and motor vehicles and assembly. According to the Nigeria Energy Transition Plan, cement production, ammonia production, and industrial heating contribute to 93% of the energy-related emissions from the industrial sector in Nigeria. The figure below illustrates energy consumption by various energy sources in industry, with biofuels and waste accounting for the largest share, consuming 176 PJ of energy.

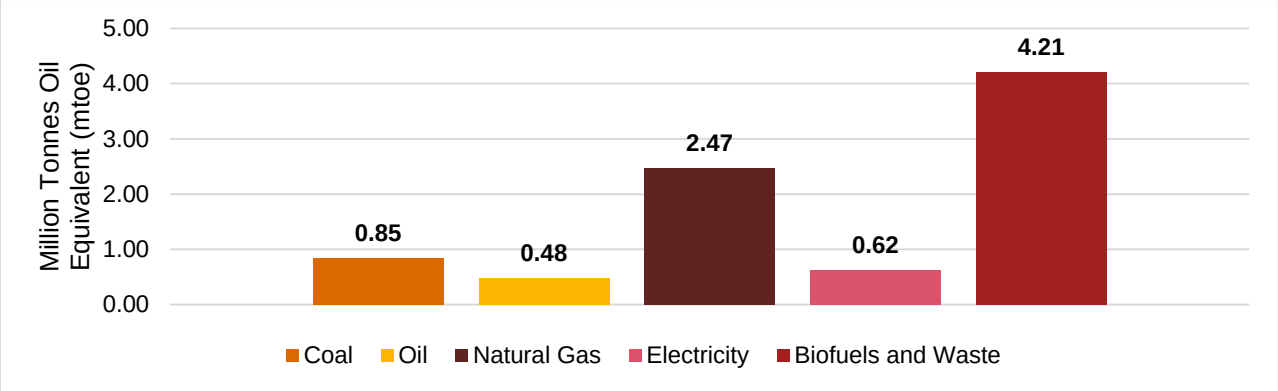

Figure 7: Amount of Energy Consumed from different Sources[18]

The industrial sector currently consumes 8.63 million tonnes of oil equivalent (Mtoe) of energy, representing only 14.5% of Nigeria's total primary energy consumption. Predominantly, energy use in this sector is dedicated to thermal applications in boilers, furnaces, and ovens. Electricity consumption is mainly driven by motor-operated applications, including cooling and refrigeration systems. Most industrial sub-sectors generate their own power onsite, primarily using generators. The table below, which illustrates the share of energy type applications (specifically the distribution of thermal and electrical energy usage within the industry sector in Nigeria), outlines the high share of thermal energy usage in Nigerian industries, which is highly carbon-intensive.

Table 5: Industrial End Use Application

End Use Energy Application	Industry Demand (%)
Thermal	88
Electricity	12

The electrical and thermal energy demand in Nigeria's industrial sector is set to increase in the future. Drivers for this expansion of demand include facility expansion, economic growth, inclusive policies and regulations, and infrastructure development. Adopting energy efficient practices in the industrial sector can reduce this intensity significantly and set the path for Nigeria to meet NETP goals.

[18] https://www.iea.org/countries/nigeria/efficiency-demand

2.3.2. Past and Ongoing Sectoral Interventions

The National Energy Efficiency Action Plan of Nigeria, 2015 – 2030, has outlined a number of policies and tools promoting energy efficiency in the industrial sector. These policies and tools have been given in Table 6.

Table 6: Industrial energy efficiency policies and tools in NEEAP

Policy Name	Target Year	Description

National programs to implement an ISO- compatible Energy Management Standard (EnMS) for Industry (ISO 50001)	March 2015 – March 2017	• Develop and implement a national Energy Management Standard (EnMS) in Nigeria that aligns with ISO 50001.
		  ○ Facilitate national stakeholder consultations to guide the development of an EnMS tailored for the industrial sector.
		• Execute pilot projects focusing on Energy Management Systems and System Optimization within industrial facilities.
		• Create benchmarking and award programs to promote energy management excellence.
		• Establish and implement protocols for measuring and verifying compliance with Energy Management Systems (EnMS).
		  ○ Build capacity within relevant organizations to develop and execute a Measurement and Verification (M&V) program for EnMS compliance.
		  ○ Develop a recognition scheme for EnMS experts and organizations that comply with ISO 50001 standards.
		  ○ Initiate an accreditation program for Energy Management Systems (EnMS) in alignment with ISO 50001.
		  ○ Set up voluntary reporting programs on energy consumption in the industrial sector.
		• Launch best-practice information dissemination and recognition programs to enhance industrial energy efficiency.

Introduce Energy Management Systems Based on ISO 50001 in the Industry Sector in Nigeria (EnMSIN)	March 2015 – August 2017	• Provide advisory services to the Standards Organisation of Nigeria (SON) for the adaptation of ISO 50001 within the industrial sector and enhance the capacity of policymakers in promoting Energy Management Systems (EnMS). • Facilitate the training and certification of ISO 50001 energy managers, selected in collaboration with the Manufacturers Association of Nigeria (MAN), the Nigerian Association of Chambers of Commerce, Industry, Mines,

		and Agriculture (NACCIMA), and the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN). • Achieve ISO 50001 certification for two firms representing distinct industrial sectors, as categorized by the Manufacturers Association of Nigeria (MAN).
Training on ISO 50001 EnMS formulation and implementation for industrial facility / energy managers	March 2013 – June 2017	• Design and develop a comprehensive training schedule. • Create training materials for Energy Management Systems (EnMS) and ISO 50001. • Develop a certification framework for energy managers. • Conduct training sessions for energy managers.
Training on industrial Energy Audits for Engineers	March 2013 – June 2017	• Design and develop a comprehensive training schedule. • Create training materials specifically focused on conducting Energy Audits. • Conduct training sessions for industrial energy auditors.
Advisory services for planning the implementation of energy efficiency networks (EENs) for industrial enterprises in Nigeria	March 2015 – August 2017	• Review and assess learning platform initiatives, particularly the Energy Efficiency Network (EEN), aimed at promoting energy efficiency within the industrial sector in selected emerging economies such as Brazil, India, and South Africa. • Provide advisory services to the Nigeria Energy Support Programme (NESP), the Manufacturers Association of Nigeria (MAN), the Nigerian Association of Chambers of Commerce, Industry, Mines, and Agriculture (NACCIMA), and the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN) to assist in planning activities for the implementation of Energy Efficiency Networks (EENs) in the industrial sector.
Development of two case studies: ISO 50001 implementation and certification at two industrial sites in the manufacturing sector	March 2015 – August 2017	• Formulate and implement ISO 50001-based Energy Management Systems (EnMS) at two industrial facilities. • Provide comprehensive support to accompany the managers of these two sites throughout the entire EnMS implementation and certification process.
Design and disseminate information materials and guidelines for EnMS implementation	March 2015 – August 2017	• Develop a brochure outlining the benefits of ISO 50001 and corresponding Energy Management Systems (EnMS) to promote their adoption. • Create and disseminate information on the design, implementation, and benefits of EnMS. • Provide detailed information on the certification process for ISO 50001.

		• Conduct cost-benefit analyses to illustrate the financial advantages of implementing EnMS. • Utilize both national and international benchmarking standards and best practices where appropriate.
Survey on power and energy consumption in the industrial sector in Nigeria	March 2015 – August 2017	• Provide a comprehensive overview of the industrial energy and production landscape in Nigeria. • Conduct a power demand and energy consumption survey within the industrial sector, utilizing a representative sample from member industries of the Manufacturers Association of Nigeria (MAN), the Nigerian Association of Chambers of Commerce, Industry, Mines, and Agriculture (NACCIMA), and the Small and Medium Enterprises Development Agency of Nigeria (SMEDAN). • Based on the survey results, identify key intervention areas and energy-related priorities in the industrial sector, with a specific focus on the implementation of Energy Management Systems in accordance with ISO 50001 standards.

The table indicates that several pilot interventions were initiated under the National Energy Efficiency Action Plan (NEEAP) for 2015–2030. These include the training of energy auditors within Nigeria and the adoption of ISO-compliant energy management standards. It is essential to evaluate the impact of these initiatives and assess the current status of existing industrial energy efficiency policies. Building on this foundation, further targets and customized energy efficiency interventions must be established for Nigeria's industrial sector, with a particular focus on hard-to-abate industries such as steel, cement, non-ferrous metals, paper, and chemicals.

2.3.3. Target Setting Approach

Building on the sectoral overview, outlined interventions, and the provisions of the Energy Efficiency Bill, a structured target-setting approach is essential for Nigeria's industrial sector. Prioritization of sub-sectors for intervention should be guided by a comprehensive market assessment of the industrial landscape in Nigeria.

Figure 6 presents the target-setting approach to be adopted by the partner MDAs and stakeholders under the Bill. It also highlights the expected outputs at each step of the process. Once the targets are defined, the scenarios outlined in this section should be integrated into the short-, medium-, and long-term goals to ensure a cohesive and effective industrial energy efficiency policy for Nigeria.

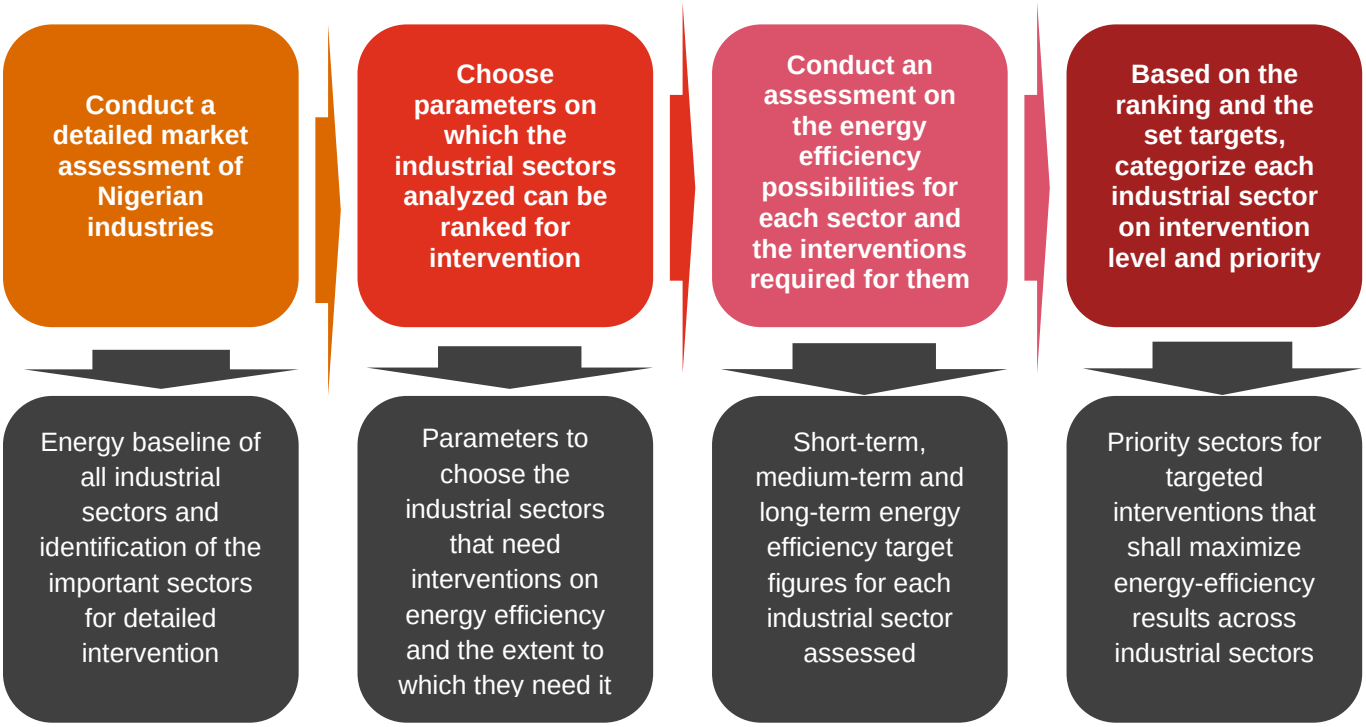

Figure 8: Target Setting Approach for the Industrial Sector

Nigeria's industrial sector holds significant potential for developing specialized energy efficiency targets, as the current targets are relatively broad. Although the NEEAP 2015–2030 outlined some basic targets for the industrial sector, more comprehensive and detailed targets are necessary to encourage wider adoption of energy efficiency practices. The following are the key provisions of the NEE&C Bill specific to the industrial sector:

- Develop and enforce an energy management program to identify opportunities for efficiency upgrades.
- Identify consumers based on energy consumption into Designated and Non-Designated Energy Consumers.

- Enforce regulations for compliance of Designated Energy Consumers with energy management provisions.
- Establish a mechanism for regular energy audits for designated industrial energy consumers.
- Facilitate the transfer of energy-efficient technologies in the industrial sector.
- Specify qualifications and certification procedures for energy auditors/managers.
- Foster financing of energy efficiency upgrades through risk-sharing or loan guarantees.
- Raise awareness and build capacity for energy efficiency in industries.
- Develop a Sectoral Energy Efficiency and Conservation Action Plan for the industrial sector

Chapter 3 presents the roadmap for implementing the targets established by stakeholders. The implementation approach will be guided by these targets, with timelines determined accordingly.

2.4. Commercial and Public Services Sector

2.4.1. Sector Overview

The commercial and public services sector in Nigeria, encompasses healthcare, education, water supply, sanitation, and public transportation. There are several promising opportunities to enhance energy efficiency and reduce the carbon footprint in public services. For instance, public hospitals and healthcare facilities, which are among the largest energy consumers in the public sector, can benefit from green building certifications and the integration of renewable energy systems like solar panels. Studies have shown that energy-efficient hospital designs can reduce energy consumption by up to 30%. In the education sector, schools and universities can adopt similar measures, utilizing energy-efficient lighting, heating, and cooling systems, and incorporating renewable energy sources to reduce reliance on the traditional power grid.

Water supply and sanitation services also present opportunities for sustainable practices. Implementing renewable energy technologies in water treatment and pumping stations can significantly cut down energy use. For example, solar-powered water systems have been successfully deployed in various rural areas, providing a sustainable and reliable water supply while reducing emissions. Public transportation, another major energy consumer, can move towards decarbonization by investing in electric and hybrid buses and expanding mass transit systems to reduce individual car usage. These initiatives not only contribute to lowering greenhouse gas emissions but also enhance the overall resilience and sustainability of Nigeria's commercial and public services sector, aligning with global efforts to combat climate change.

2.4.2. Past and Ongoing Sectoral Interventions

The National Energy Efficiency Action Plan of Nigeria, 2015 – 2030, has outlined a number of policies and tools in the commercial and public services sector. These policies and tools have been given in Table 7. It must be noted that most of the commercial and public services sector policies that currently exist are connected with policies from other sectors, such as buildings (public buildings) and transport (EV charging infrastructure). Hence there is a need for dedicated commercial and public services energy efficiency policies in order to facilitate the implementation of the Bill.

While there are currently no policies in Nigeria for important commercial and public services sector activities such as lighting energy efficiency, there is work currently underway. For instance, CLASP is working with the Nigerian government to facilitate the adoption of energy-efficient public lighting in the country through the formulation of minimum energy performance standards (MEPS) for LED lighting, which can be implemented in public streetlights.[19] It also has work currently underway on green public procurement, through policies such as triple bottom line approaches for social responsibility.[20]

[19] https://www.clasp.ngo/updates/clasp-supports-first-lighting-efficiency-policies-in-nigeria/#:~:text=CLASP%20is%20supporting%20the%20Nigerian,Daniel%20Holman%2C%20Alexia%20Ross

[20] https://www.irejournals.com/formatedpaper/1702994.pdf

Table 7: Commercial and Public services energy efficiency policies and tools in NEEAP

Policy Name	Target Year	Description
Develop and implement a system to award energy performance certificates for public buildings in Nigeria	2013 –2017	• Develop an accreditation process to certify bodies that will issue energy performance certificates. This process should ensure that accredited bodies meet stringent criteria for quality and reliability in assessing and certifying energy performance. • Develop a standard for energy performance certificates that establishes reference values, including minimum energy performance requirements for relevant building categories. This standard will provide a clear and consistent benchmark for evaluating and certifying building energy performance. • Develop and implement a national building energy performance register. This register will require the submission of information contained in energy performance certificates issued for buildings. The pertinent authority will establish and maintain this register, ensuring that data on building energy performance is systematically collected, stored, and accessible for analysis and policy-making.
Design and implementation of Energy Audits and Energy Management in Public Buildings: Case study at the FMPWH Head Quarters	2015 – 2016	To reduce energy consumption in public buildings, it is essential to address both the building's design and its operation, including user behavior. The following measures outline a comprehensive approach to achieving energy efficiency: • Conduct Energy Audits • Implementation of Energy Management • Annual Energy Management and Consumption Reports • Education and Training • Promotion Activities • Requests for Proposals (RFPs)

2.4.3. Target Setting Approach

While existing policies cover many points related to the public buildings, these are largely policies that act in conjunction with the existing policies and plans for energy efficiency in the buildings sector – Commercial and public buildings. Specifically, the 'Public Services Sector' encompasses more elements, such as **public procurement**, **public streetlighting**, **municipal water and wastewater pumping and public transportation and charging infrastructure**.

Figure 9 illustrates the process flow for implementing target-setting activities in the public services sector. Adopting this general approach is expected to deliver significant improvements in energy efficiency for both the commercial and public services sectors.

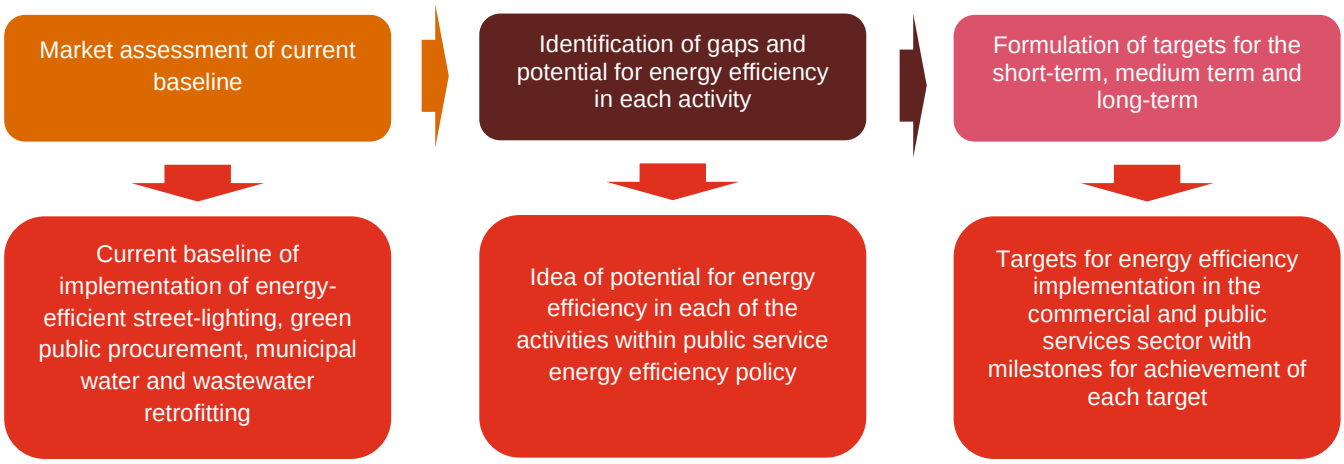

Figure 9: Target-Setting Approach for Commercial and Public Services

A detailed workplan has been outlined in Chapter 3 to introduce the following policy measures for the 'Public Services Sector' in line with the NEE&C bill -

- Develop a policy framework for green public procurement guidelines.
- Develop and enforce a National Lighting Code.
- Retrofit conventional lamps with LED lamps and modernize control systems for public streetlighting.
- Train staff and companies to manage smart lighting systems.
- Retrofit water supply facilities with energy-efficient technologies.
- Develop guidelines for energy-efficient operation and maintenance in public services.
- Develop a Sectoral Energy Efficiency and Conservation Action Plan for the public services sector.

3. Implementation Roadmap

This section outlines the roadmap for implementation of the National Energy Efficiency & Conservation (NEE&C) Bill in the four major end use energy consuming sectors. It outlines the activities that could be undertaken for each sector, laying down broad timelines for them to be implemented. These activities are drawn from the market assessment of Nigeria's end use sectors.

The implementation roadmap defines short-term actions as those planned for the next three years, medium-term actions as those spanning three to five years, and long-term actions as those extending beyond 2030. Notably, only a few activities have been designated for the long-term. In the short term, the focus is on establishing the foundational framework necessary for implementing energy efficiency and conservation initiatives across sectors. Key activities include the promulgation and parliamentary approval of the Bill, setting energy efficiency targets, reviewing existing policies in each sector, and developing structured implementation plans. These plans encompass reporting mechanisms, empanelment of implementing agencies, and the establishment of M&E protocols, along with relevant rules and regulations. The medium-term phase will build upon the baselines established during the short-term, emphasizing activities that can significantly enhance energy efficiency outcomes. This includes introducing targeted interventions and policies for designated consumer industries, which are expected to adhere to stricter energy efficiency standards. For the long term, the focus shifts to advanced interventions aimed at addressing harder-to-abate sectors, such as cement production, and implementing deep decarbonization policies to achieve substantial and enduring energy efficiency and conservation outcomes.

3.1. Work Plan for Implementation

Sector-wise implementation roadmap for energy efficiency and conservation, focusing on the sector-priority policy measures is indicated in Table 8.

Table 8: Energy Efficiency Bill Implementation Work Plan

Sector	Sectoral Policy Measures	Short Term			Medium Term		
		2025	2026	2027	2028	2029	2030
Residential Building	Strengthening and Updating the National Building Code to regulate the design and operational aspects of buildings.						
	Develop a voluntary green building certification program for buildings						
	Conduct Regular Energy Audits for Designated Energy Consumers (High Energy) Consuming Buildings						
	Promoting Standards and Labelling (S&L) Program for energy consuming appliances & equipment with MEPS						
	Establish M&E for S&L program and National Building Code						
Transport	Set targets to promote EV use and EV charging infrastructure						
	Development of regulations for fuel efficiency and use of blended fuel in the transport sector						
	Regulations for use of public transportation						
Industry	Set the targets for energy efficiency implementation in industries through market assessment and sectoral analysis						
	Take stock of the existing energy management standards implemented in NEEAP 2015-2030 and select international energy management standards as a reference for the programme						
	Estimate energy consumption thresholds to categorize industries on the level of effort and conduct consultations between industries and the Nodal Agency						
	Establish data reporting mechanisms and empanel Energy Audit firms to build their capacity for Bill implementation						
	Development of rules and regulations for enforcement of the Bill						
	Empanelment of ESCOs that shall work on-the-ground						

Sector	Sectoral Policy Measures	Short Term			Medium Term		
		2025	2026	2027	2028	2029	2030
	Building M&E systems for energy-efficient technologies						
	Establishment of standards and labelling and MEPS, with different standards based on the industry category						
	Training and capacity building programme for ISO 50001 energy auditor certification						
	Ideation and implementation of schemes specific to higher-emissions industrial sectors						
Public Services	Set the targets for energy efficiency implementation in commercial and public services through market assessment and analysis of interventions under plan (such as lighting MEPS and green public procurement)						
	Establishment of standards and labelling and MEPS for lighting (via a lighting code for Nigeria) and municipal and wastewater pumps						
	Establishment of green public procurement guidelines and their implementation procedures						
	Establishment of smart city plans and integration of energy-efficient street lighting and energy-efficient water and wastewater management						
	Building M&E systems for energy-efficient technologies in all activities						

3.2. Residential Building Sector Implementation Roadmap

Policy Measures	Action Plan	Timeline	Implementing and Partner MDAs
Strengthening and Updating the National Building Code	• Review and revise existing Building NBC to incorporate Building Energy Codes and latest energy efficiency technologies and practices.	Short Term	• Implementing Agency: Federal Ministry of Housing & Urban Development • Partner Agency: Energy Commission of Nigeria
	• Promote awareness and training programs for architects, builders, and engineers on the updated code.		
	• Mandate NBC compliance for all new construction projects.	Medium Term	
	• Implement mandatory compliance checks for all new and renovated buildings.		
	• Develop a M&E system to ensure adherence to the code.	Long Term	
	• Introduce penalties for non-compliance to ensure rigorous enforcement.		
Develop a voluntary green building certification program for buildings	• Establish an institution responsible for the management and operation of the green building certification system	Medium Term	• Implementing Agency: Federal Ministry of Housing & Urban Development • Partner Agency: Energy Commission of Nigeria
	• Develop a voluntary green building certification program for buildings that comply with the Building Energy Efficiency Code (BEEC).		
	• Initiate pilot projects to demonstrate the benefits of green building practices.		
	• Offer incentives such as tax breaks or subsidies to encourage builders and developers to pursue certification		
	• Expand the certification program to include existing buildings and retrofitting projects.	Long Term	
Conduct Regular Energy Audits for Designated Energy Consumers (High Energy) Consuming Buildings in the Buildings Sector	• Identify and list high energy-consuming buildings across sectors.	Short Term	• Implementing Agency: Federal Ministry of Housing & Urban Development • Partner Agency: Energy Commission of Nigeria
	• Develop standardized protocols for conducting energy audits and reporting findings.		
	• Mandate regular energy audits for identified buildings and require implementation of recommended energy-saving measures.	Medium Term	
	• Provide training and resources for building managers on energy management best practices.		
	• Create a database to track energy consumption patterns and improvements.	Long Term	

Policy Measures	Action Plan	Timeline	Implementing and Partner MDAs
	• Use audit data to inform policy adjustments and future energy efficiency initiatives.		
Promoting Standards and Labelling (S&L) Program	• Establish standard operating Procedure which defines the administrative structure for S&L Program and lays out generic procedures for identification and development of MEPS for appliances.	Short Term	• Implementing Agency: Standards Organization of Nigeria • Partner Agency: Energy Commission of Nigeria
	• Set up a technical committee for standards and labelling program		
	• Conduct Technical and Market assessments to develop S&L for identified appliances and equipment		
	• Strengthen the enforcement of MEPS through regular inspections and audits.		
	• Launch public awareness campaigns to educate consumers on the benefits of energy-efficient labelled appliances.		
	• Establish Testing protocol and accreditation of test laboratories for energy performance testing of energy-consuming appliances /equipment under S&L	Medium Term	
	• Introduce S&L program and MEPS for other appliances.	Medium Term	

3.3. Transport Sector Implementation Roadmap

Policy Measures	Action Plan	Timeline	Implementing and Partner MDAs
Set targets to promote EV use and EV charging infrastructure	• Prepare proposals to amend the relevant provisions to encourage the use of EV	Short Term	• Implementing Agency: Federal Ministry of Transportation, Nigeria • Partner Agency: Federal Ministry of Power, Energy Commission of Nigeria
	• Conduct assessment studies to prepare recommendations for amendments to the regulations on the designation of parking lots and building code to establish regulations governing the charging infrastructure for EV. Establish strategic locations for EV charging stations, particularly in urban centres and along major transport corridors.	Medium Term	

Policy Measures	Action Plan	Timeline	Implementing and Partner MDAs
	• Conduct assessment studies to prepare recommendations on electricity tariff structure for public charging infrastructure and licensing requirements for the electric vehicle charging business		
	• Provide incentives for private sector investment in charging infrastructure.		
Regulations to promote fuel efficient and alternate fuel vehicles	• Establish a comprehensive database to collect and analyse data on vehicle emissions, fuel consumption, and transport patterns. Use this data to set baselines and track progress towards the 20% emission reduction target by 2030.	Short Term	• Implementing Agency: Federal Ministry of Transportation, Nigeria • Partner Agency: Energy Commission of Nigeria
	• Enact regulations for introducing fuel efficiency standards for Internal Combustion Engine vehicles in road transport		
	• Introduce vehicle scrapping schemes for Internal Combustion Engine vehicles with incentives to promote early retirement of old vehicles	Medium Term	
	• Implement vehicle inspection to ensure compliance with these standards.		
Regulations for use of public transportation	• Implement pilot projects in major cities to introduce energy-efficient buses, such as hybrid or CNG buses, into the public transport fleet.	Short Term	• Implementing Agency: Federal Ministry of Transportation, Nigeria • Partner Agency: Energy Commission of Nigeria
	• Launch nationwide campaigns to raise awareness about energy efficiency in transport, promoting the use of public transport and EV vehicles.	Medium Term	
	• Introduce incentives such as reduced fares, employer-subsidized transit passes for individuals who consistently use public transport.		

3.4. Industrial Sector Implementation Roadmap

Policy Measures	Action Plan	Timeline	Implementing and Partner MDAs
Establishment of Energy Efficiency Program for Industrial Sectors	• Set the targets for energy efficiency implementation in industries through market assessment and sectoral analysis	Short Term	• Implementing Agency: Federal Ministry of Industry, Trade and Investment
	• Take stock of the existing energy management standards implemented in NEEAP 2015-2030		

Policy Measures	Action Plan	Timeline	Implementing and Partner MDAs
	• Select international energy management standards as a reference for the program		• Partner Agency: Energy Commission of Nigeria, Federal Ministry of Power (FMOP),
	• Estimate energy consumption thresholds to categorize industries as designated industries		
	• Conduct consultations between industries and the Nodal Agency		
	• Establish data reporting mechanisms		
	• Empanel Energy Audit firms to build their capacity for Bill implementation		
Development of rules and regulations for Bill enforcement	• Preparation and appraisal of draft legal documents	Short Term	• Implementing Agency: Federal Ministry of Industry, Trade and Investment • Partner Agency: Energy Commission of Nigeria, Federal Ministry of Power (FMOP),
	• Promulgation and publication of legal documents		
Empanelment of ESCOs and energy audit firms	• Establishment of empanelment criteria for ESCOs	Short Term	• Implementing Agency: Federal Ministry of Industry, Trade and Investment • Partner Agency: Energy Commission of Nigeria, Federal Ministry of Power (FMOP),
	• Preparation of a database of operating ESCOs in Nigeria at national and regional levels		
	• ESCO applications submission, assessment and evaluation		
	• Finalizing the list of empanelled ESCOs and publication of ESCO ratings through an independent assessment		
Build and establish M&V systems	• Identification of energy-efficient technologies to be implemented across each industry in Nigeria	Short Term	• Implementing Agency: Federal Ministry of Industry, Trade and Investment • Partner Agency: Energy Commission of Nigeria, Federal Ministry of Power (FMOP)
	• Setting up the M&V systems for all industries, with specific focus on designated consumer industries	Medium Term	

Policy Measures	Action Plan	Timeline	Implementing and Partner MDAs
Establishment of S&L and MEPS for industrial equipment	• Establish standard operating Procedure which defines the administrative structure for S&L Program and lays out generic procedures for identification and development of MEPS for industrial equipment.	Short Term	• Implementing Agency: Federal Ministry of Industry, Trade and Investment • Partner Agency: Energy Commission of Nigeria, Federal Ministry of Power (FMOP), Standards Organization of Nigeria (SON)
	• Conduct technical and market assessments to develop S&L for identified industrial equipment		
	• Strengthen the enforcement of MEPS through regular inspections and audits, especially for designated consumer industries		
	• Launch public awareness campaigns to educate consumers on the benefits of energy-efficient labelled industrial equipment		
	• Establish Testing protocol and accreditation of test laboratories for energy performance testing of energy-consuming industrial equipment under S&L	Medium Term	
	• Introduce S&L program and MEPS for other industrial equipment not covered in the previous steps		
Training and capacity building for energy auditors	• Cross-check existing legal basis for energy audits, with an examination of ISO 50001 certifications and the existing gaps within this system	Short Term	• Implementing Agency: Federal Ministry of Industry, Trade and Investment • Partner Agency: Energy Commission of Nigeria,
	• Establish the administrative structures on which the ISO 50001 certification will be built into a larger energy auditor training program		
	• Preparation of the curriculum for energy auditor training programmes for larger-scale implementation, along with the timelines to cover this curriculum		
Designated Energy Consumer industry policies and enhanced industrial energy efficiency	• Conduct detailed market assessment on industries to identify and rank each industry on energy consumption and energy efficiency potential, and choose the designated energy consumer industries	Short Term	• Implementing Agency: Federal Ministry of Industry, Trade and Investment • Partner Agency: Energy Commission of Nigeria,
	• Ideate and devise regulatory mechanisms and schemes (including mandates and penalties) specific to these industrial sectors tailored to more ambitious energy efficiency outcomes	Medium Term	

Policy Measures	Action Plan	Timeline	Implementing and Partner MDAs
	• Continue monitoring the schemes created and expand upon them through further ideation to transition into larger energy efficiency and decarbonization policies	Long Term	National Council for Climate Change, Nigeria

3.5. Public Services Sector Implementation Roadmap

Policy Measures	Action Plan	Timeline	Implementing and Partner MDAs
Establishment of Energy Efficiency Program for Commercial and Public Services Sector	• Take stock of the existing public services sector energy efficiency interventions under plan, such as MEPS for streetlighting and green public procurement	Short Term	• Implementing Agency: Federal Ministry of Works • Partner Agency: Energy Commission of Nigeria, Standards Organization of Nigeria
	• Set the targets for energy efficiency implementation in public services through market assessment		
	• Empanel Energy Audit firms to build their capacity for Bill implementation		
Establishment of National Lighting Code and Public Streetlight Harmonization	• Take stock of the status of Nigeria lighting MEPS and streamline the existing work to facilitate a national lighting code	Short Term	• Implementing Agency: Federal Ministry of Works • Partner Agency: Energy Commission of Nigeria, Standards Organization of Nigeria
	• Harmonize these standards created with international standards for public lighting		
	• Issue the National Code for Public Lighting after its creation		
	• Set up lighting and technology specific M&E for public lighting		
	• Integration of energy-efficient and smart LED lighting with larger smart city policies and programs to expand into more advanced commercial and public services sector energy efficiency goals	Medium Term	
Establishment of Energy Efficiency Standards for	• Prepare standards for municipal pumps for water and wastewater pumping	Short Term	• Implementing Agency: Federal Ministry of Works

Policy Measures	Action Plan	Timeline	Implementing and Partner MDAs
municipal wastewater and water infrastructure	• Set up technology specific M&E systems for municipal water pumping infrastructure		• Partner Agency: Energy Commission of Nigeria, Standards Organization of Nigeria
	• Explore the integration of renewable energy systems into these water and wastewater management infrastructure	Medium Term	
	• Integration of energy-efficient water management infrastructure with larger smart city policies and programs to expand into more advanced commercial and public services sector energy efficiency goals		
Establishment of Green Public Procurement policies	• Take stock of the status of current interventions being taken towards green public procurement in Nigeria and expedite the same	Short Term	• Implementing Agency: Federal Ministry of Works • Partner Agency: Energy Commission of Nigeria,
	• Issue the Green Public Procurement policy guidelines once the policy has been formulated		