

NATIONAL RENEWABLE ENERGY AND ENERGY EFFICIENCY POLICY (NREEEP), 2015

Approved By The Federal Executive Council (FEC)
For the Electricity Sector
April 20, 2015

Simplified Summary

Curated by Clean Tech Incubation and Acceleration Foundation
with the generous support of ALL ON





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EXECUTIVE SUMMARY

The National Renewable Energy and Energy Efficiency Policy (NREEEP) sets out the Nigerian government's blueprint to increasingly harness the country's renewable energy and energy efficiency resources in driving sustainable development across the country. Developed in line with the country's national energy policy, the NREEEP outlines the government's programs and measures for deploying renewable energy and energy efficiency technologies and practices towards facilitating Nigeria's green transition.

This Guide provides a simplified summary of the NREEEP primarily for off-grid renewable energy stakeholders. It provides context to the policy, objectives, targets, incentives, key provisions, key stakeholders, strategies, and related regulations and policies. It also highlights the current implementation status of some of the policy provisions.

CONTEXT

Previous energy sector policies had been limited in their scope with regards to renewable energy and energy efficiency to general issues without a detailed framework that addresses the specific needs of the electricity sector in line with on-going electricity market reforms and the privatization policy.

The National Renewable Energy and Energy Efficiency Policy (NREEEP) was developed in line with objectives of the National Energy Policy, Rural Electrification Strategy and Plan, Millennium Development Goals, and the National Economic and Development Strategy. The national policy is established to remove the key barriers that puts renewable energy and energy efficiency at economic, regulatory or institutional disadvantages relative to other sources of energy in Nigeria.

It is intended that the Renewable Energy Policy (REP) advanced in this document will serve as a blue print for the sustainable development, supply, and utilization of renewable energy resources within the economy for on-grid and off-grid energy solutions.

This document also advances an Energy Efficiency Policy (EEP). It will be implemented through a National Renewable Energy Action Plan (NREAP) and a National Energy Efficiency Action Plan (NEEAP) which will guide the development of future renewable energy and energy efficiency related sectorial policies, as well as the national action plans to achieve renewable energy and energy efficiency targets.

NREEEP was developed by the Inter-Ministerial Committee on Renewable Energy and Energy Efficiency comprised of 18 government ministries, departments, and agencies.

Policy Focus: Hydropower, biomass, solar, wind, geothermal, wave and tidal energy power plants and co-generation plants for energy production, and energy efficiency as an additional source of energy.

LEGAL FOUNDATION

The NREEEP is a policy document approved by the Federal Executive Council (FEC) in 2015 and forms the overarching policy on renewable energy and energy efficiency in Nigeria.



PURPOSE

- Framework for clean energy access.
- National significance of renewable energy and energy efficiency especially for energy security.
- Increase in renewable energy mix in line or above ECOWAS regional policy targets, and set national targets for renewable energy and energy efficiency.
- Integration of renewable energy and energy efficiency into national and state level planning, and creation of the necessary enabling environment.
- Preparation of the National Renewable Energy Action Plan (NREAP) and a National Energy Efficiency Action Plan (NEEAP).
- Mandatory requirement for the Federal Ministry of Power to develop an Integrated Resource Plan (IRP), and ensure continuous review and implementation of the policy provisions.
- Framework development for sustainable financing of renewable energy and energy efficiency projects and programmes.

OBJECTIVES

- The development of Nigeria's energy resources by diversifying the energy mix to achieve national energy security and an efficient energy delivery system.
- Guarantee of adequate, reliable, affordable, equitable and sustainable supply of renewable energy at cost-reflective and appropriate prices, as well as in an environmentally friendly manner.
- Acceleration of the process for acquisition and diffusion of technology, managerial expertise and indigenous participation in the renewable energy and energy efficiency sector.
- Guarantee of efficient, location-specific and cost-effective consumption pattern of renewable energy resources and improved energy efficiency.
- Promotion of investments for the renewable energy and energy efficiency sector.
- Foster international co-operation in trade and project development at the regional, continental and global level.
- Provision of abundant electricity access to Nigerians, including more sustainable provisions for domestic use and cooking.
- Establishment of appropriate financing mechanisms that support private investment in the renewable energy and energy efficiency sub-sectors.
- Effective coordination and collaboration among all key stakeholders in the renewable energy and energy efficiency sub-sectors in Nigeria.

TARGET RENEWABLE ENERGY RESOURCES



Hydro



Biomass



Solar



Wind



Geothermal



Wave



Tidal



Energy Efficiency

TARGETS/MILESTONES AND TIMELINES

Hydropower Programme Target (MW)

	2015	2020	2030
Large Hydropower	2,121	4,549	4,627
Small Hydropower	140	1,607	8,174
Total	2,261	6,156	12,801

Solar Electricity Programme Target (MW)

	2015	2020	2030
Solar (PV and Solar Thermal Systems inclusive)	117	1,343	6,831

Biomass Programme Target (MW)

	2015	2020	2030
Biomass Electricity	5.0	57	292
Biofuel (ML/Day)			
• Bio Ethanol (E10)	5.3	9.7	24.2
• Biodiesel (B20)	2.0	3.4	11.7

Wind Programme Target (MW)

	2015	2020	2030
Wind Electricity	55	631	3,211
Windmill Water Pumping Systems (No.)	20	100	200

Energy Efficiency Targets

- Production of guidelines on all the key components of energy efficiency by 2020.
- Enactment of all relevant legislation required for policy implementation by 2020.
- Attain replacement of 40% (by 2020) of old and inefficient appliances in Nigeria with energy efficient appliances.
- Sustain best energy efficiency practices beyond 2030.

INCENTIVES

For Renewable Energy & Energy Efficiency Companies, Developers and Importers



- Incentives to local entrepreneurs for the production of biomass energy conversion systems, solar energy conversion systems, and the domestic development of energy storage technologies.
- Facilitating allocation or grant of land to manufacturers of energy efficient products and renewable energy projects by federal and state governments.
- Power Production Tax Credit (PTC) to electricity generation companies, aimed at incentivizing the adoption of renewable energy.
- Public Benefits Fund (PBF) which requires that a certain percentage of the tariff be dedicated to supporting on and off grid renewable energy generation projects.
- License waivers for renewable energy plants with less than 1MW at a site.
- Capital grants, tax holidays and exemptions, and other incentives for renewable energy projects
- Appropriate economic instruments to allow generators of renewable energy to obtain preferred pricing rates as they sell

- Tax credits to companies who produce energy efficient appliances and fixtures.
- Provision of soft loans and special low interest loans from power sector development fund for renewable energy supply and energy efficiency projects.
- Market incentives for the deployment of efficient private sector-driven renewable electricity solutions for remote and off-grid areas.
- Simplified licensing procedure for renewable Independent Power Projects (IPPs) selling electricity generated to the grid up 50 MW.
- Feed-in Tariffs (FiT) to incentivize electricity producers through favourable pricing for electricity produced through renewables.
- Tax incentives to manufacturers of renewable energy and energy efficient equipment and accessories including five year tax holiday for manufacturers from date of commencement of manufacturing; and five year tax holiday on dividend income from investment on domestic renewable energy sources.¹
- Exemption from excise duty and sales tax for importers of energy efficient appliances and lighting including 2 - 5 year free custom duty on the importation of equipment and materials used in renewable energy and energy efficiency projects.

¹ A few renewable energy companies have benefitted from tax holidays under the Pioneer Status Incentive. (Further mentioned in the implementation section).

For Consumers

- Incentives including tax credits for home owners to install energy efficient appliances and lighting
- Energy efficiency fund to provide rebates to on-grid customers who implement substantive changes in their equipment to gain efficiency. Fund to be managed by the

- Federal Ministry of Power or its appointed agent.
- Grants to communities to encourage adoption of community-based renewable energy processes.

KEY STRATEGIES & PROVISIONS

Hydropower

- Establishing and maintaining multilateral agreements to monitor and regulate the use of international rivers flowing through the country.
- Promoting and supporting research and development activities for the local adoption of hydropower plant technologies.²
- Ensuring that rural electricity boards incorporate small-scale hydropower plants in their development plans.
- Studies and up-to-date data on the hydro potential of rivers in the country with the identification of all possible dam locations.
- Multi-sectorial framework to be designed and implemented to encourage private sector development of mini and micro hydropower schemes especially for remote and off-grid areas.

- Providing basic engineering infrastructure for the domestic manufacture of components for hydropower plants, equipment and accessories
- Ensuring increased indigenous participation and application of gender mainstreaming in the planning, design and construction of micro, mini and large hydropower stations
- Developing a basic hydro resource assessment; a national hydro prospecting tool; and feasibility analysis of hydropower opportunities across the country.



² This is on-going facilitated by the United Nations Industrial Development Organization (UNIDO)

Biomass

- Developing extension, educational and outreach programmes to facilitate the use of new biomass electricity technologies.
- Promoting research and development in biomass technology and fuels.
- Establishing pilot projects for the production of biomass energy conversion devices and systems.³
- Cultivating fast growing tree species needed to accelerate the regeneration of forests.
- Developing and training skilled manpower for the maintenance of biomass energy conversion systems, and providing basic engineering infrastructure for the local production of components and spare parts for biomass systems.



- Providing adequate incentives to local entrepreneurs for the production of biomass energy conversion systems
- Developing appropriate technologies for the utilization of alternative energy sources from fuel-wood through the use of improved cookstoves.⁴
- Promoting non-wood fuel biomass especially in rural areas and its usage for remote and off-grid power generation.

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Solar

- Enhancing Nigeria's domestic development of appropriate energy storage technologies and energy efficiency programmes
- Developing extension programmes to facilitate the use of solar home systems especially to rural and remote/off-grid areas
- Promoting research and development in solar energy technology.
- Establishing projects for the production of solar energy conversion devices and systems.



- Implementing a web-based solar prospecting tool that translates solar resources into potential power generation at the local level
- Developing an appropriate pricing structure and feed-in-tariff (FiT) for concentrated solar power or similar projects.
- Increasing the share of solar water heating technologies for social services, and commercial and industrial processes.

³ A few biomass pilot mini-grids have been deployed in communities in Abuja funded by the United States African Development Foundation (USADF) NOT RELEVANT

Solar (Cont'd)

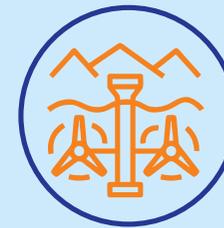
- Increasing the percentage contribution of solar energy to the total energy mix to ensure a minimum electricity contribution of 3% by 2020 and 6% by 2030.
- Training and developing skilled manpower for the maintenance of solar energy conversion systems and providing basic engineering infrastructure for the local production of components and spare parts for solar

- Providing adequate incentives to local entrepreneurs for the production of solar energy conversion systems and the domestic development of energy storage technologies.
- Establishing micro-credit facilities for entrepreneurs, especially women groups, for the establishment and operation of commercial solar energy facilities in remote and off-grid areas.

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Wind

- Ensuring the development of indigenous small scale wind generating devices and energy storage devices.
- Developing extension programmes to facilitate the general use of wind energy technology
- Providing appropriate incentives to producers, developers and consumers of wind power systems
- Developing zoning and regulatory wind energy guidelines
- Intensifying work in wind data acquisition, development of wind maps, and implementation of a web-based wind prospecting tool.
- Developing local capacity in wind energy technology, and encouraging research and development in wind energy utilization.



- Using wind energy for provision to rural areas and remote communities far removed from the national grid, and applying it in areas where it is technically and economically feasible to feed the grid.

OTHER PROVISIONS

Education, Research, Training, & Capacity Development

- Government shall encourage NGOs to support the renewable energy sector by providing competence building tools, assessments, and capacity building trainings.
- Promoting research and development activities in energy conservation and efficiency, including the development and manufacture of energy efficient equipment and machinery.
- Energy efficiency research and outreach program in conjunction with the Energy Commission of Nigeria with seed funds provided for these activities.
- Encouraging data collection and statistical analysis of energy consumption patterns.
- Encouraging result oriented research and development, including information systems and software solutions in the renewable energy and energy efficiency sector by making expenditure on such efforts tax deductible.
- Developing and promoting local capability in the nation's Renewable Energy Centres and Research Institutes for the design and utilization of renewable energy technology.
- Monitoring and assessing international renewable energy and energy efficiency technological developments, and initiating and sustaining local capability for their applications in all sectors of the economy.



- Initiating and promoting renewable energy and energy efficiency educational programs and research activities in tertiary institutions and research institutes.
- Relevant agencies to ensure that data and information relating to renewable energy and energy efficiency resources are obtained through research and development programmes with a view to immediately commence using this resources to provide power supply where ever it is competitive.
- Encourage the local development of renewable energy technology with a view to minimizing the cost input of renewable energy projects in line with the ECOWAS policy and target.
- Federal Government budgetary backing to support the activities of key players in the implementation of a Renewable Energy and Energy Efficiency Policy (REEEP), including research, development and required feasibility studies.

Finance

- Encouraging indigenous participation in order to attract domestic investment through education on renewable energy, and incentivising debt investments to renewable energy projects.⁵
- Declaring energy efficiency as a source of energy that can be bought and sold, including tariff provisions for electricity distribution companies that promote and achieve high efficiency.
- Implementing a framework for the use of Sovereign Guarantees to support appropriate renewable electricity projects.
- Encouraging renewable energy firms to source development funds from the Nigerian capital market.⁶
- Expanding the scope of venture capital financing to embrace investments in the renewable energy sector.⁷



- Increase foreign exchange earnings through export of renewable energy.
- Provision of a 0.5% budget addition for each MDA to facilitate the installation of energy efficient appliances, or mandating each MDA to devote a minimum of 0.5% of their budget to upgrading their equipment and fixtures.
- Establishing guaranteed and dependable repayment schemes for renewable energy project investments.
- Bidding rounds through national renewable energy independent power producer procurement programme.

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Regional and Global Collaborations

- Fostering and strengthening renewable energy and energy efficiency cooperation and integration within ECOWAS.⁸
- Developing a co-coordinated approach to regional and sub-regional renewable energy and energy efficiency planning based on co-operation and consultation among member countries of ECOWAS and the African Union (AU).⁹
- Facilitating the establishment of mechanisms within ECOWAS and other African countries to enhance energy



- trade and interchange of relevant technology and information
- Promoting favourable trading relationships with member countries of ECOWAS and the AU which will ease the financing of renewable energy supply, energy efficiency measures and other energy-related projects.
- Ensuring Nigeria's active membership in renewable energy and energy efficiency related regional and international organizations.

⁵ This is currently on-going and supported by development partners and development finance institutions

⁶ The Nigerian government has issued a sovereign green bond as well as the first Climate Bonds Certified Sovereign Bond and this has been listed on the capital market.

⁷ With a growing influx of impact investors and increased finance facilities from local impact investors such as All On, the scope of venture capital financing for the off-grid energy sector has been on the increase

⁸ On-going through the ECOWAS Regional Off-Grid Electrification Project (ROGEP)

⁹ Ongoing through the ECOWAS Regional Off-Grid Electrification Project (ROGEP)

Regulatory

- Development of the National Renewable Energy Action Plan (NREAP) and the National Energy Efficiency Action Plan (NEEAP).¹⁰
- Mainstreaming energy efficiency in the country's institutional legal and regulatory frameworks.
- Implementation of nationwide energy audit programmes, and enforcement of various standards for efficient energy use.
- Establishing energy planning and implementation units at state government levels and assigning responsibilities for energy related matters at local government levels.
- Developing energy efficiency building codes to ensure and require that buildings be designed to take consideration of climatic conditions to reduce energy consumption.¹¹

- Ensuring that the strategic plans and programmes of the renewable energy and energy efficiency sectors are appropriately appraised with a view to ensuring consistency with the overall national energy policy and plans, and resolving conflicts arising from sub-sectorial plans and programmes.
- Creation of necessary links between the federal and state government for the formulation of renewable energy and energy efficiency policies, frameworks and programmes as well their implementation.
- Development of an updated and revised NREEEP that expands the renewable energy window already provided in this policy as subject to international and local technology developments.

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Planning, Investment and Stakeholder Participation

- Preparation of a 15-20 year integrated energy resource plan (IRP) that will include NREAP and NEEAP components.
- Strengthen existing national electricity information gathering system including but not limited to energy resource inventory, consumption pattern, energy technologies and other relevant socio-economic parameters.
- Encouraging the standardization of renewable energy related plants, renewable energy and energy efficiency machineries and spares and the establishment of

infrastructural facilities within the community for their production and certification.

- Providing institutional arrangements and incentives for the promotion of energy conservation and the use of energy efficient technologies and processes for domestic, industrial use and services, and the transport and urban planning sectors.



¹⁰ This has been done

¹¹ The National Building Code has been revised and updated to take this into account

Planning, Investment and Stakeholder Participation (Cont'd)

- Mandating the deployment of energy saving light fixtures in federal government offices and facilities.
- Local government and community investment in renewable energy projects.

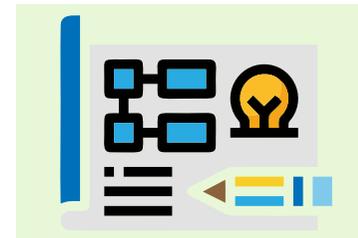
- Conserve non-renewable resources used in electricity generation.
- Active participation of NGOs, CSOs and women groups particularly in helping rural communities implement renewable energy projects.¹²

IMPLEMENTATION

Role of Stakeholders involved in NREEEP Implementation

Federal Ministry of Power

- Overall planning, development, monitoring and implementation of all policies for the electricity sector in all its ramifications.
- Engage all NGOs currently operating in the Nigerian renewable energy sector with the intention of having them articulate their annual renewable energy programs and targets, and ensure close cooperation during the development of renewable energy projects.
- Coordinate activities and support renewable energy project developers to secure land for project development at the state level.
- Assign clear responsibilities for off-grid system development for instance in the context of power purchase agreements, and develop the necessary 'enabling environment' for renewable electricity supply in remote and off-grid location programs.



National Electricity Regulatory Commission (NERC)

- Introduce and develop optimal economic instruments for small hydro schemes not exceeding 30MW, all biomass cogeneration power plants, and solar and wind-based power plants irrespective of their sizes.
- In collaboration with other relevant agencies will work with the Monitoring and Evaluation Watchdog Group to define penalties and modalities, and recommend to the Honourable Minister of Power within its regular tariff review system.
- Develop other tariff related incentives and regulation to support renewable electricity.

¹² NGOs, CSO, and women groups are increasingly becoming involved in the adoption and creation of empowerment opportunities through renewable energy with support from organizations such as a Clean Tech Hub, and Power for All

Role of Stakeholders involved in NREEEP Implementation (Cont'd)

Federal Ministry of Finance to establish a **Special Task Force** within the **Nigerian Customs Service** for the renewable energy and energy efficiency sectors. The role of the Task Force will be such that specific mandate is given to the unit under the direct supervision of the Comptroller General of Customs to fast track screening of renewable energy and energy efficiency components coming into and out of the country.

Rural Electrification Agency (REA) to carry out feasibility studies on using renewable electricity power generation for remote and off-grid areas.

A Monitoring and Evaluation Watchdog Group will be made up of a consortium designated by the Honourable Minister of Power. Sub-committees will include the Renewable Energy Action Committee and the Energy Efficiency Taskforce as well as other members delegated by the Honourable Minister.

NGOs, Development Partners, Civil Society and Donors to liaise/work with the Federal Ministry of Power and fund demonstration renewable energy projects and renewable energy feasibility studies through provision of grants and donations.

Federal Ministry of Foreign Affairs, Federal Ministry of Justice, and other relevant MDAs including shall be involved in the negotiation and implementation of renewable energy and energy efficiency related bilateral and multilateral agreements.

At the **sub-sectorial level**, more specific sub-sectorial planning and policy implementation for the development, exploitation and utilization of particular energy resources, are carried out in the various energy **sub-sectors' Ministries, Departments and Agencies**.

RELATED REGULATORY & POLICY DOCUMENTS

- Energy Commission of Nigeria (ECN) Decree of 1979, 1988 and 1989
- National Energy Policy (NEP), 2003
- Electricity Power Sector Reform Act, 2005
- National Building Code, 2006
- Roadmap for Power Sector Reforms, 2010

- ECOWAS renewable energy policies (EREP), 2015
- ECOWAS energy efficiency policies (EEEEP), 2015
- National Renewable Energy Action Plan (NREAP), 2016
- National Energy Efficiency Action Plan (NEEAP), 2016
- Sustainable Energy for All Action Agenda , 2016

IMPLEMENTATION STATUS OF NATIONAL RENEWABLE ENERGY AND ENERGY EFFICIENCY POLICY

Federal Ministry of Power

- The Federal Ministry of Power has engaged with Civil Society Organizations and other key stakeholders in the sector but prefers to engage with industry bodies and associations.
- The Federal Ministry of Power has supported several renewable energy developers to secure land and fast-tracked the approval of 14 solar independent power plants across the country.
- The NREAP was adopted in 2016 and they have made renewable energy a focus point of the country's Vision 2020.
- They championed the mini-grid regulations before NERC got the buy-in.
- The Monitoring and Evaluation Watchdog has not been created but the ministry is working to create a desk represented by all major stakeholders as well strengthen the capacity of the Inter-Ministerial Committee.

Rural Electrification Agency

The Rural Electrification Agency is conducting feasibility studies on using renewable energy generation for off-grid and remote areas, with the support of the Nigerian Energy Support Program (NESP) of the German International Development Agency (GIZ).

Nigerian Electricity Regulatory Commission (NERC)

- NERC has developed the feed-in tariffs for solar, wind, biomass and hydropower. The feed-in tariffs were due for a review in 2018 which did not take place.
- The cost quotes in the FIT has gone done significantly from the time it was published so it is due for a downward review.
- The FIT regulation includes penalties for DISCOs that fail to comply by refusing to take power from renewable energy developers.
- No FIT tariff project has taken off so far because of the financial challenges currently faced by the DISCOs.
- They will also put a cap on the maximum power that can be bought by the DISCOs so the tariff doesn't skyrocket.
- The incentives are available in the public domain including within the NIPC, which has a dedicated desk office with a list of incentives for the renewable energy sector.
- NERC does not license installers.

Federal Ministry of Finance

The Ministry is yet to establish the Special Task Force within the Customs for renewable energy and energy efficiency.



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