

# Case Studies



## II.3 Nigeria

### II.3.1. Country's energy and CC profile

The Federal Republic of Nigeria, known as Nigeria, is located in the Gulf of Guinea in the West coast of the African continent. Although it has one of the largest economies since 2012, it is still a lower middle-income country with more than 200 million people in 2020. With its 36 states plus the Federal capital territory (FCT) of Abuja, the country faces developmental challenges, including the need to reduce the dependency on oil. It also faces serious environmental challenges worsened by climate change and its adverse effects on sectors such as agriculture, water resources, etc.

Nigeria is well endowed with oil, natural gas, and biomass that constitute the main sources of energy. However, around 60% of the population lack access to electricity and the majority of the rural inhabitants remain off-grid. In 2021, the installed power capacity is 12,600 MW but the actual available capacity is only 5,000 MW. At the same time, electricity demand is estimated at around 20 GW<sup>22</sup>.

Indeed, the electricity sector suffers from a lack of production but also from a failure of the transmission and distribution infrastructure. According to the Energy Progress Report 2021 published by The World Bank (WB), the IEA, the International Renewable Energy Agency (IRENA), the United Nations (UN), and the World Health Organization (WHO), Nigeria was ranked as the world's worst country with regards to access to electricity with about 90 million of the total population without power supply, representing about 46% of the total population. On-grid consumers experience frequent power cuts ranging from 4 up to 15 hours per day, with huge losses and pollution for businesses and populations<sup>23</sup>.

22 AMBASSADE DE France au Nigeria.- Les énergies renouvelables au Nigeria. Lagos: Ambassade de France au Nigeria, 2019. 3p.

23 WORLD BANK.- Tracking SDG 7: The Energy Progress Report 2021.- Washington, DC: World Bank, 2021. 234p.

In these circumstances, renewable energies could be an alternative. However, the energy mix remains undiversified, consisting mainly of gas-fired thermal (81% of the electricity mix) and hydro (19%)<sup>24</sup>. Thus, a large part of the population and almost all companies are obliged to equip themselves with means of self-generation of electricity, mainly polluting generators.

In light of these realities, the Nigerian government has set three (3) important and ambitious targets to reach by its electricity sector by 2030: namely, inclusive access to electricity for 90% of the population, renewable energy development with electricity capacity expansion target of 30GW including renewable energy, and GHG emissions reduction through its NDC (see below).

### II.3.2 Existing policies and laws, including the country's NDC and national, regional and local policies and legislation relating to climate change and energy

Nigeria is one of the major exporters of oil and has large reserves of natural gas. It is known to have the second largest proven crude oil reserves in Africa with oil fields located in the south, specifically in the Niger Delta and offshore in the Gulf of Guinea. In spite of all that, it daily suffers of recurrent power supply problems resulting from inefficient power generation and distribution.

Being also endowed with various renewable energy resources such as solar, wind, biomass and hydropower, the country recognizes the importance of using these renewable sources of energy as an alternative to the perennial power deficit. Therefore, in these times of fight against climate change, the Nigerian authorities have introduced a number of policies and laws to encourage the development of renewable energy in Nigeria and contribute to the reduction of greenhouse gas emissions.

24 AMBASSADE DE France au Nigeria, Idem.



## Renewable Energy policies and laws

A few laws provide a legal framework for renewable energy in Nigeria. These include the Electricity Power Sector Reform (EPSR) Act of 2005 which is the main law that governs the power sector in Nigeria. The Nigerian Electricity Regulatory Commission (NERC), the primary regulatory body of the sector has been established under this Act. The NERC has thus established several policies and regulations in relation to renewable energies including:

- Environmental Impact Assessment Act
- Renewable Energy Policy Guidelines 2006
- National Renewable Energy and Energy Efficiency Policy of 2015 (in response to the ECOWAS Renewable Energy and Energy Efficiency Policy (EREP and EEEP));
- NERC Renewable Energy Feed-In Tariff Regulations of 2015;
- NERC Mini-Grid Regulation 2016.

In this context, various plans have been formulated for the exploitation of renewable energies. The key documents that have been developed include the following:

- The National Energy Policy (2003) which emphasizes on the effective use of sustainable energy resources with a focus on solar energy and advocates for the integration of solar energy in the national power supply. Ten years later, this policy was reviewed and replaced by the National Energy Policy of 2013;
- The Renewable Energy Master Plan (REMP) (2006): recommends to increase the share of renewable electricity from 13% of electricity generation - mainly met by large hydro - in 2015, to 23% in 2025 and 36% by 2030. A main driver for such increase is the diversification of the national electricity mix, and attempts to provide an implementation strategy;
- National Energy Efficiency Action Plans 2015-2030 (with the support of the ECOWAS Centre for Renewable Energy and Energy Efficiency).

## Climate change policies and laws

Like most Parties to the UNFCCC, Nigeria regularly submits reports to the Secretariat. Three National Communications have been submitted. In 2021, Nigeria has embarked on the adoption of the National Climate Change Act 2021 which seems to be the first stand-alone comprehensive climate change legislation in West Africa. It has been conceived as a strategic tool for climate change advocacy and a legal foundation for potential climate litigation in the country. It is meant to ensure that climate change policies and actions are integrated with other related policies such renewable energy policies for the promotion of socio-economic development and environmental protection.

This Act is coupled with the National Climate Change Policy 2021-2030 that outlines the country's vision of climate change and aims at promoting low carbon, climate resilient and gender-responsive sustainable socio-economic development.

Nigeria has also submitted its updated Nationally Determined Contribution (NDC) to the UNFCCC in 2021. In the energy sector, this updated NDC has set (conditional) targets of 30% of electricity generation of on-grid electricity from renewables (12GW of additional large hydro, 3.5 GW small hydro, 6.5 GW solar PV and 3.2 GW wind). Other mitigation measures include 13 GW off-grid renewable energy (i.e, 5.3 GW mini-grids, 2.7 GW solar home systems and street lights, and 5GW self-generation).

### II.3.3 Overview of opportunities and barriers

It appears from the review of documentation as seen above, that a lot of policies and plans have been developed over the years in favour of renewable energy development and use. One of them is the master plan (REMP) for the development of REs which clearly sets goals for different future moments, as well as points out possible external collaborations and partnerships with international summits and programmes like the Paris agreement.



However, the full implementation of those policies and plans is greatly lacking. Many objectives have been defined but the following actions are scarce<sup>25</sup>.

In this context, the opportunities and barriers identified are numerous and include the following:

- Inadequate solar initiative's research,
- Lack of technological know-how,
- Short-term policies,
- Lack of awareness and political instability
- Lack of information and education on renewable energy

Key barriers to solar initiatives in Nigeria<sup>26</sup>

Despite the many benefits that can be accrued from the use of solar energy , its adoption is still very low. The major impediment to the technology adoption are series of barriers which make it hard to implement.

Technical Barriers include:

- Lack of skilled personnel,
- Lack of maintenance and operation,
- Lack of training facilities and entrepreneur's development mechanism,
- Lack of Reliability.

Social; Cultural Behaviour:

- Lack of consumer awareness about the product,
- Lack of understanding of benefit of solar PV and public resistance to new technology
- Proliferation of low quality equipment and unqualified staff

Economic/ Financial Barriers:

- Lack of access to capital, credit to consumers and financial instrument
- Lack of support to R & D,
- High interest rate,

25 MONTELLA, Rosario; GIUSTINO, Vera Domenica.- Barriers to Renewable Energy Development in Nigeria and how to overcome them. Copenhagen Business School, Master's Thesis, 2021, 115p. [https://research-api.cbs.dk/ws/portalfiles/portal/68333846/1113099\\_Final\\_project\\_S133844\\_S133384.pdf](https://research-api.cbs.dk/ws/portalfiles/portal/68333846/1113099_Final_project_S133844_S133384.pdf)

26 ABDULLAHI et al.- Key Barriers to the Implementation of Solar Energy in Nigeria: A Critical Analysis.- In: IOP Conf. Ser.: Earth Environ. 2017, 8p.- Sci. 83 012015.



Institutional/ Legal barriers:

- Institutional barriers, legal framework,
- Regulatory issues, non-integration of energy mix,
- Non-participation of private sector, poor R & D culture and stakeholder's non-interference.
- Poor communication mechanism to reach the institutional policy makers for improvement and Negative perception about the technology

Political/ Policies Issues:

- Lack of long term policies,
- Lack of political will to diversify into clean energy, constantly changing of government and reshuffling of institutions.

Market Distortions Issues:

- Trade barrier for new product,
- Energy sector controlled,
- Lack of access to diversified technology,
- Lack of facilities and backup technology,
- Non-market oriented research for solar energy technology and application

### II.3.4 Points of Action for local civil society organisations

In the collaborative fight to find solutions against climate change in Nigeria, both local and international NGOs and pressure groups have played an important role, providing support to the development of the RE sector through capacity building, provision of financing, and awareness raising<sup>27</sup>. These can be considered as a great opportunity for a more efficient promotion of sustainable energy, to break the constraints the country is facing, increase energy demand through awareness spreading.

CSOs in Nigeria could consider the following actions:

- Awareness raising concerning benefits and advantages of RE to enable its adoption
- Sensitisation and awareness creation on REs and initiatives
- Advocate for the creation of training institutions, for the development of the necessary workforce capacity;
- Establishment of a special fund to facilitate access to RE on the demand side;
- Advocate to subsidise raw materials needed for the installation and production of solar panels;
- Advocate for research as a framework to mitigate challenges: one example is that not many studies have been carried out over the years on wind power. As a consequence, there is hardly any reliable estimation of a nationwide potential analysis for wind-derived energy that could attract the interest of policymakers or investors; on geothermal, most of the accredited data date from a study conducted more than 40 years ago. More recent studies focussing on this source may be very useful for the development of this technology;
- Advocate for long term programmes on specific RETs: such as rooftop solar home systems programme for existing and new buildings.
- Advocate for quality control and testing centres to prevent such barriers as the proliferation of untrustworthy retailers and some other barriers such as inconsistent standards and compliance requirements, policy uncertainty about incentives including feed-in-tariffs, energy buyback scheme.

Partnership between government, NGOs, academia, and the private sector in a cohesive and integrated manner will be the decisive key to take the situation forward, in the same way that the Nigerian Energy Support Programme (NESP) jointly funded by the European Union and the German cooperation agency, GIZ, since 2013 and the International Centre for Energy, Environment and Development (ICEED) are providing evidence on the ground for such a partnership and the need for third entities.

<sup>27</sup> MONTELLA, Rosario; GIUSTINO, Vera Domenica.- Barriers to Renewable Energy Development in Nigeria and how to overcome them. Copenhagen Business School, Master's Thesis, 2021, 115p.