



POLICY BRIEF:

THE NIGERIAN CLEAN COOKING POLICY ENVIRONMENT

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FOREWORD

This policy brief is a publication of Clean Technology Hub. It was prepared by Precious Esogbue with contributions from Ifeoma Malo and Abel B.S. Gaiya.

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Abbreviations

CBN	Central Bank of Nigeria
CCA	Clean Cooking Alliance
CO	Carbon monoxide
DARE	Development Association for Renewable Energies
ECN	Energy Commission of Nigeria
ESMAP	Energy Sector Management Assistance Programme (World Bank)
ETP	Energy Transition Plan
ESP	Economic Sustainability Plan
EU	European Union
FOTE	Friends of the Environment
FME	Federal Ministry of Environment
FW	Firewood
GACC	Global Alliance for Clean Cookstoves
GHG	Greenhouse Gas
GoN	Government of Nigeria
HAP	Household air pollution
HH	Household
IAP	Indoor air pollution

ICEED	International Centre for Energy, Environment and Development
ICS	Improved Cookstoves
IFC	International Finance Corporation
Kg	Kilogram
LGA	Local Government Area
LPG	Liquefied Petroleum Gas
MCS	Mfamiyen Conservation Society
MFI	Microfinance Institution
MoE	Ministry of Environment
MoF	Ministry of Finance
MoW	Ministry of Women Affairs
NACC	National Alliance for Clean Cookstoves
NCCS	National Clean Cooking Scheme
NCEE	National Centre for Energy & Environment
NCEEC	National Centre for Energy Efficiency and Conservation
NCERD	National Centre for Energy Research and Development
NCHRD	National Centre for Hydropower Research and Development
NDC	Nationally Determined Contribution
NEEAP	National Energy Efficiency Action Plan
NREAP	National Renewable Energy Action Plan
NREEEP	National Renewable Energy and Energy Efficiency Policy
NGN	Naira
NGEP	National Gas Expansion Programme

NGP	National Gas Policy
NCCF	Nigeria Clean Cooking Forum
NLPGEP	National Liquefied Petroleum Gas Expansion Plan
NGO	Non Governmental Organisation
RBF	Results Based Financing
REMP	Rural Electrification Master Plan
RESIP	Rural Electrification Strategy and Implementation Plan
RUWES	Rural Women Energy Security Project
SERC	Sokoto Energy Research Centre
SE4ALL	Sustainable Energy For All
SDG	Sustainable Development Goals
SMEs	Small Medium Scale Enterprise
SSA	Sub-Saharan Africa
UN	United Nations
VAT	Value Added Tax
ToC	Theory of Change
WB	World Bank
WHO	World Health Organisation



Executive Summary

According to the World Health Organisation (WHO), unclean cooking practices lead to an estimated 3.2 million premature deaths per year globally. In Nigeria, 175 million people live without access to modern energy services. Traditional biomass energy, primarily wood and charcoal, plays an important role in the Nigerian economy particularly in the rural areas. The negative effects of traditional cooking methods on health, environmental, and socio-economic conditions, especially of women, have been well-documented, and clean cook stoves provide a promising solution to these issues.

This policy brief explores the impact of clean cooking through three dimensions: socio-economic, health, and environmental outcomes. For example, the adoption and continued use of improved cook stoves has a positive impact on household savings and can enhance economic wellbeing at the community level. Time spent gathering fuel and cooking is reduced.

Clean cooking in Nigeria is a remarkably diverse sector, both across fuel types and across regions. While there is widespread use of wood for cooking across the country, there is significant regional disparity in this practice. States in northern Nigeria are more likely to use wood fuel than States in the south. States like Lagos and Ogun have very low numbers of households that predominantly use wood for cooking. Liquefied Petroleum Gas (LPG) is the most commonly used cooking fuel in the South South and South West geopolitical zones and in major cities where incomes are higher and LPG distribution networks are accessible.

Cooking fuels are very important in the life of every household as most food items must be heated, smoked, dried or cooked before consumption. LPG, Ethanol, Methanol, Improved biomass (briquettes) are a few examples of cooking fuel. Several stakeholders from research institutions and testing centers, fuel and stove suppliers, providers of finance, government agencies/programs, donors, and NGOs exist in the sector. Although clean cooking solutions are a better alternative to traditional biomass, the adoption and diffusion rates remain low; this points to the persistence of significant barriers. In addition to the lack of awareness and understanding of the economic, social and environmental benefits of clean cooking solutions, there is the need for: (i) more intelligent business models (marketing and distribution networks, and accessing finance for working capital); (ii) smarter and holistic policies; and (iii) better understanding of household behaviour change techniques.

Despite the pressing need for smarter and holistic policies, the clean cooking policy environment in Nigeria is a work in progress. There is currently no standalone policy for clean cooking in Nigeria, but plans are already in place to develop a National Clean Cooking Policy. However, there are a number of policy guidelines that affect clean cooking in a number of official documents. A comprehensive review of these documents reveals six key policies covering clean cooking activities in Nigeria. These include: the National Renewable Energy and Energy Efficiency Policy (NREEEP), the Rural Electrification Strategy and Implementation Plan (RESIP), the Sustainable Energy for All Action Agenda (SE4ALLAA), the National Renewable Energy Action Plans (NREAP), the National Energy Efficiency Action Plan (NEEAP), and the Rural Electrification Master Plan (REMP).



Introduction

The lack of access to clean cooking overlays inextricably with poverty, poor health, gender inequality and environmental degradation. According to the World Health Organisation (WHO), unclean cooking practices lead to an estimated 3.2 million premature deaths per year globally.¹ Women, girls, infants, groups living in extreme poverty and displaced populations remain among the most affected. In the last decade, the need for cleaner and efficient energy alternatives to address health and environmental problems associated with continued use of traditional cooking methods has been gaining momentum at national and international levels.² Nigeria is faced with the pressing challenge of expanding access to affordable, reliable and modern energy services. 175 million Nigerians live without access to modern energy services.³ Traditional biomass energy, primarily wood and charcoal, plays an important role in the Nigerian economy particularly in the rural areas. The multifaceted negative implications of traditional biomass energy usage in Nigeria include deforestation, increasing GHG emissions, land degradation and Indoor Air Pollution (IAP), which is linked to an estimated 78,000 deaths (of mainly women and children).⁴

Clean cooking solutions are a better alternative to traditional biomass. Yet the adoption and diffusion rates of clean cooking solutions remain low; this points to the persistence of significant barriers. In addition to the lack of awareness and understanding of the economic, social and environmental benefits of clean cooking solutions, there is the need for: (i) more intelligent business models (marketing and distribution networks, and accessing finance for working capital); (ii) smarter and holistic policies; and (iii) better understanding of household behaviour change techniques.⁵

In order to achieve large-scale adoption and diffusion of clean household solutions, there is a need for recognition of the relevance of clean household energy use to the larger economy, especially in rural areas. The creation of an enabling environment is critical for adoption and diffusion of clean cooking solutions in Nigeria. Such an environment must foster the formulation and implementation of pro-poor economic policies, regulation and institutions

¹ WHO (2022). Household air pollution and health. Assessed October 24, 2022. <https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health>

² ESCAP (2021). Universal access to all: Maximizing the impact of clean cooking. Assessed October 24, 2022. https://www.unescap.org/sites/default/d8files/knowledge-products/Policy_Brief_Clean_Cooking-Final.pdf

³ ESI Africa (2022) Nigeria's energy transition plan takes the lead. Assessed October 30, 2022. <https://www.esi-africa.com/industry-sectors/finance-and-policy/nigerias-energy-transition-plan-takes-the-lead/>

⁴ Biomass Consumption in Nigeria: Trends and Policy Issues

⁵ Benard O. Muok (2018) Policy Environment for the Adoption and Diffusion of Clean Cooking Solutions in Kenya. https://www.african-ctc.net/fileadmin/uploads/actc/Knowledge/Clean_Cooking/East_Africa/POLICY_BRIEF_2.pdf

that remove market barriers, nurture home-grown innovations, facilitate access to finance and credit for the development and upscale of clean cooking initiatives. A conducive policy environment and efficiently functioning institutions play a central role in driving deployment of clean cooking solutions market and require long-term stability, timely and adequate adaptation.⁶

This policy brief provides an overview of the current state of the cooking sector in Nigeria, describes relevant aspects of the policy environment, and identifies major gaps which prevent adoption at scale. It proposes actions and recommendations that will help to address the identified policy gaps. The brief also examines the institutional arrangements around clean cooking solutions and whether it is a catalyst or a barrier to adoption and diffusion of the technology.



Methodology

This brief employs both primary and secondary sources of data. Specifically, the paper draws on empirical research published in scientific literature including peer-reviewed articles, research papers and review papers, grey literature such as policy documents, strategy and actions plans, project reports, consultancy reports, donor reports and documentaries on clean cooking solutions, among others. In addition to the review, the paper relies on expert consultations with clean cooking solutions actors in Nigeria.



Clean Cookstoves and their Impact

Nigeria's economy is energy-constrained. Despite being rich in diverse modern energy resources, biofuels and waste represent 54% of the total primary energy supply.⁷ Others are oil products at 24%, gas at 17% and crude oil at 4%. Renewable energy, including hydro, wind and solar power, constitute not more than 1% of the total energy supply.⁸

“Clean cookstove” is a blanket term that refers to modern cookstoves designed to be less harmful to human health and the environment than traditional cookstoves, both by employing cleaner, less polluting fuels, as well as altering conventional designs to address specific issues.⁹ Such modifications can improve energy efficiency, reduce emissions levels or improve fuel savings and are normally defined in the literature as Improved Cookstoves or ICS.¹⁰

The impact of clean cookstoves is uneven and highly dependent on local contextual factors, including policy and social norms, as well as the design of the cookstoves themselves.¹¹ The adoption of clean cookstoves has the potential to lead to several positive development outcomes that can be classified along economic, environmental, and social dimensions.¹² For instance, the adoption of clean cookstoves reduces indoor air pollution, thus leading to

⁶Precious Onuvae (2021) Fostering an Enabling Policy Environment to Expand Clean-Cooking Access in Nigeria. https://ng.boell.org/sites/default/files/2021-05/FINAL_Fostering%20an%20Enabling.pdf

⁷ Adeola Ijeoma Eleri (2021) Expanding Demand for Clean-Cooking in Nigeria https://ng.boell.org/sites/default/files/2021-05/Expanding%20Demand%20EDITED_Draft%201.pdf

⁸ Ibid

improved health of household members. Similarly, the adoption of clean cookstoves results in savings and reduces the time spent cooking or gathering fuel, which improves individual or economic well being granting more time to spend either on leisure or income-generating activities. Finally, switching to fuel-efficient cookstoves or cookstoves that do not use wood, charcoal, or fossil fuels, reduces the exploitation of natural resources.

This section develops a Theory of Change (ToC) that explains the logic and assumptions linking clean cooking to socio-economic, health, and environmental outcomes. It also presents evidence on the impact of clean cookstoves on these outcomes. This section develops a Theory of Change (ToC) that explains the logic and assumptions linking clean cooking to socio-economic, health, and environmental outcomes. It also presents evidence on the impact of clean cookstoves on these outcomes.



⁹Fabrizio Valenti, Anjani Balu, Arjun Malhotra, Khushboo Gupta, Pallavi Balakrishnan, Prateek Kukreja, Smitha Cunigal et al (2021) “Clean Cookstoves: Impact and Determinants of Adoption and Market Success”. <https://ifmrllead.org/wp-content/uploads/2021/12/Clean-Cookstoves-2021-Report.pdf>

¹⁰ Ibid

¹¹ Ibid

¹² ESMAP (2015). The state of the Global Clean and Improved Cooking Sector. <https://openknowledge.worldbank.org/bitstream/handle/10986/21878/96499.pdf>

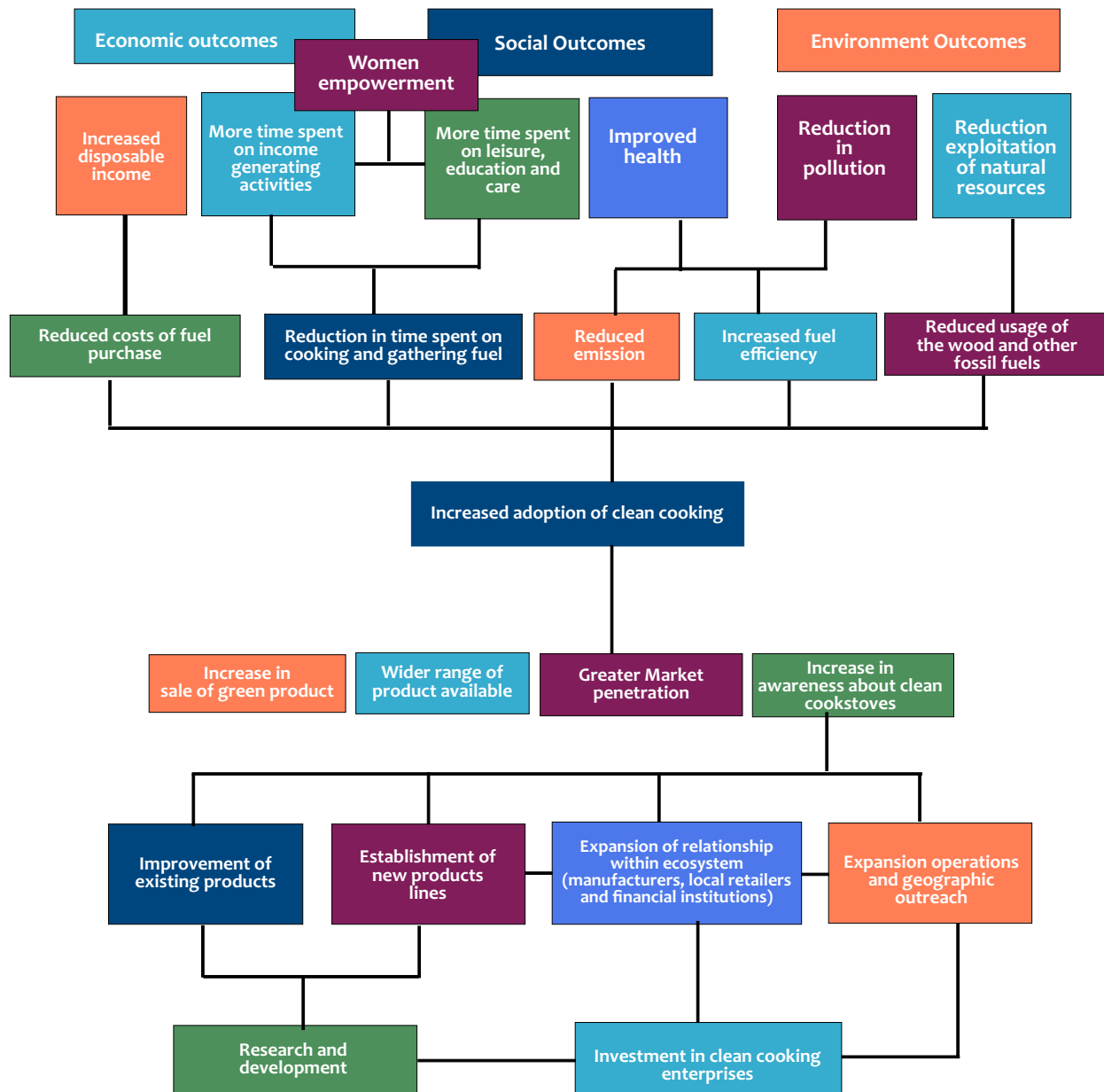


Figure 1: Theory of Change



Economic Outcomes

The adoption of clean cookstoves reduces the time spent by households gathering firewood and saving money on fuel. Following the adoption of a more efficient wood-burning cook stove, households that previously only used fuelwood for traditional cookstoves can make significant financial savings. In addition to cost savings, using clean cookstoves can have other positive effects on the economy. Apart from reducing household expenditures on charcoal and energy, the manufacturing and distribution of cookstoves leads to the creation of full-time long-term jobs. In other words, clean cookstoves have been proven to improve economic outcomes, mostly through increased savings due to fuel-efficiency and by creating local employment and business opportunities if the cookstoves are produced locally.

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Social Outcomes

The adoption of clean and efficient cookstoves has the potential to improve social and health outcomes. Proponents of the adoption of ICS, such as the Clean Cooking Alliance, posit that the adoption of clean cookstoves or fuels reduces the time and effort spent collecting fuel and cooking.¹³ In turn, this allows people, and especially women, to spend more time on income-generating activities, education or training and rest, thus contributing to enhancing women’s social and economic empowerment (SDG 5).

- Health

Beginning from health-related outcomes, smoke from the burning of solid fuels has a direct influence on health by creating respiratory disorders. According to the World Health Organization (2020), close to 13.2 million deaths per year in 2020, including over 237 000 deaths of children under the age of 5 globally each year.¹⁴ However, the long-term usage of cookstoves and their constant use have a significant impact on the health effects.



- Women’s Empowerment, Time Use, and Education

The use of clean cookstoves reduces the amount of time spent cooking and collecting fuel by household members, particularly women.¹⁵ Additionally, women who used clean cookstoves felt more at ease asking other family members to cook while they finished other tasks, giving them a sense of independence and flexibility.¹⁶ This emphasizes the need of creating improved cookstoves that are seen to be safe



¹³Global Alliance for Clean Cookstoves. (2016). “Measuring Social Impact in the Clean and Efficient Cooking Sector: A How-to Guide”. <https://cleancooking.org/reports-and-tools/measuring-social-impact-in-the-clean-and-efficient-cooking-sector-a-how-to-guide/>

¹⁴ World Health Organisation (2022) “Household Air Pollution and Health”. <https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health#:~:text=Household%20air%20pollution%20was%20responsible,under%20the%20age%20of%205.>

¹⁵Fabrizio Valenti, Anjani Balu, Arjun Malhotra, Khushboo Gupta, Pallavi Balakrishnan, Prateek Kukreja, Smitha Cunigal et al (2021) “Clean Cookstoves: Impact and Determinants of Adoption and Market Success”. <https://ifmrllead.org/wp-content/uploads/2021/12/Clean-Cookstoves-2021-Report.pdf>

¹⁶Global Alliance for Clean Cookstove (2021) “Clean Cookstoves Can Save Lives & Empower Women” <https://cleancooking.org/wp-content/uploads/2021/07/266-1.pdf>

and simple to use. The time previously spent in collecting firewood was now used for income-generating activities – either working on their own farms or selling their produce. Overall, the adoption of clean cookstoves appears to have a positive effect on women’s empowerment, mainly by freeing up their time to either pursue income generating activities, or spend more time on leisure, education, or rest. Either way, both lead to an improvement in their wellbeing

Environmental Outcomes

Key environmental outcomes of clean cooking are reductions in pollution, greenhouse gas emissions and deforestation. The incomplete combustion of biomass fuels during cooking contributes to Indoor Air Pollution (or IAP). Depending on the cookstove's design, the fuel it uses, and other variables, such as how it is used, clean cookstoves produce, on average, less emissions than conventional cookstoves. Among stoves that do not use biomass as their primary fuel, gas stoves, electric stoves, and solar cookers have the highest particulate matter reductions (90-99 percent) followed by ethanol stoves.¹⁷ Biomass cookstoves with energy-efficient improvements use less fuel, which should result in reduced exploitation of natural resources, notably a decrease in deforestation. Overuse of wood and charcoal for cooking in homes can result in significant forest degradation.¹⁸ The continuous harvesting may result in mudslides, watershed damage, and desertification.¹⁹



Cleaner Biomass Cookstoves
| Source: ORNL

¹⁷ESMAP (2014) Clean and Improved Cooking in Sub-Saharan Africa.
<https://documents1.worldbank.org/curated/en/164241468178757464/pdf/98664-REVISED-WP-P146621-PUBLIC-Box393185B.pdf>

¹⁸ Rosenthal, J., Quinn, A., Grieshop, A. P., Pillarisetti, A., & Glass, R. I. (2018). Clean Cooking and the SDGs: Integrated Analytical Approaches to Guide Energy Interventions for Health and Environment Goals. Energy for Sustainable Development. https://www.researchgate.net/publication/322209681_Clean_cooking_and_the_SDGs_Integrated_analytical_approaches_to_guide_energy_interventions_for_health_and_environment_goals

¹⁹ Simon, G. L., Rob Bailis, R., Baumgartner, J., Hyman, J., & Laurent, A. (2014). Current Debates and Future Research Needs in the Clean Cookstove Sector. Energy for Sustainable Development. https://www.researchgate.net/publication/261218753_Current_debates_and_future_research_needs_in_the_clean_cookstove_sector



Overview of the Nigerian Clean Cooking Landscape

Clean cooking in Nigeria is a remarkably diverse sector, both across fuel types and across regions.²⁰ While there is widespread use of wood for cooking across the country, there is significant regional disparity in this practice.²¹ States in northern Nigeria are more likely to use wood fuel than southern ones. States like Lagos and Ogun have very low numbers of households that predominantly use wood for cooking.²² Liquefied Petroleum Gas (LPG) is the most commonly used cooking fuel in the South South and South West geopolitical zones and in major cities where incomes are higher and LPG distribution networks are accessible.²³ Kerosene is the predominant fuel type in South East and South West geopolitical zones.²⁴ Biomass stoves of all varieties are most common in the heavily rural South East, North East, and North West regions. Most households use more than one type of fuel. Rural households primarily depend on charcoal and wood as their primary cooking methods, while some use locally made kerosene cookstoves.²⁵ On the other hand, urban households use both traditional and modern stoves with a diverse array of fuels including purchased wood, charcoal, LPG, and, to a small extent, electricity.²⁶

The clean cooking sector in Nigeria is still in the early stages of development relative to leading African countries like Kenya. Regulatory indicators and levels of both energy access and clean cooking access also remain low.²⁷

Some of the delay in progress can be attributed to uneven support from the government, and the resulting discouragement of donor support. However, in recent times, there has been evidence that the government has begun to take the issue of clean cooking more seriously in order to change this situation. These efforts are expressed in provisions in the Economic Sustainability Plan, the Nationally Determined Contributions (NDC),²⁸ and the Energy Transition Plan. The National LPG Expansion Plan aims to have 30 million homes switch to LPG by 2025 and reach a total consumption volume of 5 million metric tons.²⁹ The LPG plan is built on the 2017 National Gas Policy that introduced other measures such as the removal of 5% value added tax (VAT) on LPG, the establishment of the National LPG Expansion Initiative and the establishment of a Presidential Inter-Ministerial Committee on LPG with its secretariat in the Office of the Vice President.³⁰ As part of the updated NDC, Nigeria has committed to two targets³¹:

²⁰Kelly Carlin, Isahac Esteve, Wayne Omonuwa, James Sherwood (2021) Scaling eCooking in Nigeria: Gap Analysis for Programme Development. <https://meecs.org.uk/wp-content/uploads/2021/07/Scaling-eCooking-in-Nigeria.pdf>

²¹Adeola Ijeoma Eleri (2021) Expanding Demand for Clean-Cooking in Nigeria https://ng.boell.org/sites/default/files/2021-05/Expanding%20Demand%20EDITED_Draft%201.pdf

²² Ibid ²³ Ibid ²⁴ Ibid

²⁵ Oluwakemi A., Sarah J., Mike C., (2017) Culture, tradition, and taboo: Understanding the social shaping of fuel choices and cooking practices in Nigeria. <https://www.sciencedirect.com/science/article/abs/pii/S2214629617304346>

²⁶ Ibid

²⁷ ESMAP (2019) Regulatory Indicators for Sustainable Energy Report. <https://rise.worldbank.org/reports>.

²⁸ UNFCCC (2022) NDC Registry <https://unfccc.int/NDCREG>

²⁹ Adeola Ijeoma Eleri (2021) Expanding Demand for Clean-Cooking in Nigeria https://ng.boell.org/sites/default/files/2021-05/Expanding%20Demand%20EDITED_Draft%201.pdf

³⁰ Ibid

- Enhanced Ambition Scenario: 44% of the population in 2030 using clean fuels (unconditional).
- Maximum Ambition Scenario: 65% of the population in 2030 using clean fuels (conditional on international support).

The NDC's Maximum Ambition scenario assumes that just under half of the country's population shifts to LPG by 2030, and kerosene is fully phased out. Additionally, there is a sharp rise in the sales of improved biomass stoves, with over 8 million units, or an average of 750,000 per year, added by 2030.³² Furthermore, the Energy Transition Plan for Nigeria envisages a switch to LPG-based cooking first, followed by a longer-term switch to electricity-based cooking.³³

Additionally, the Federal Ministry of Environment through its program the National Clean Cooking Scheme (NCCS) launched in September 2012 is currently collaborating with pot-makers Tower and energy firm Envirofit through its Rural Women Energy Security (RUWES) program to produce and distribute across the country a purpose-designed biomass stove. To further strengthen the scheme, in 2014, the Federal Government approved the sum of NGN 9 billion for the distribution of 750,000 Clean Cookstoves and 18,000 wonder bags to Nigerians, in a bid to curb the depletion of forest resources caused by indiscriminate felling of trees.³⁴ In five years, the NCCS aims to provide 20 million clean cookstoves across the nation and at least four million clean cookstoves in each of the six geopolitical zones.³⁵ The scheme also aims to lessen the continuous felling of trees, which exposes the country to ecological issues like desertification.³⁶ A growing number of non-state actors operate in Nigeria's clean cooking space. The Nigerian LPG Association is currently working with the Federal Government on the LPG Implementation Plan.³⁷ The Nigerian Alliance for Clean Cookstoves, which brings together most of the improved cookstove (ICS) businesses. More local and international ICS companies, like Burn Manufacturing Limited, Envirofit, Nenu Engineering Ltd have entered into the clean cooking market. LPG, improved biomass cookstoves (ICS) and renewable-fuel value chains are also emerging nationwide.

³¹Maria Yetano Roche(2022) Building a Shared Vision for the Clean Cooking Transition.

³² Ibid

³³ Ibid

³⁴ Charlotte Remteng, Muhammad Bello Suleiman, Chiamaka Maureen Asoegwu and Chysom Nnaemeka Emenyonu (2022) Clean Cooking in Nigeria. https://energypedia.info/wiki/Clean_Cooking_in_Nigeria

³⁵ Ibid

³⁶ Ibid

³⁷ Adeola Ijeoma Eleri (2021) Expanding Demand for Clean-Cooking in Nigeria https://ng.boell.org/sites/default/files/2021-05/Expanding%20Demand%20EDITED_Draft%201.pdf



Cooking Fuels and Types

In Nigeria, cooking fuels are very important in the life of every household as most food items must be heated, smoked, dried or cooked before consumption. A household's fuel choice is strongly influenced by the accessibility, affordability and convenience of the fuel, and is dependent on the economic and technical options available to the household, as well as social and cultural context.³⁸ For example, in many households, cooking with woodfuels is so deeply rooted in culture that other fuels have little appeal, although they might provide recognizable health and economic benefits.



Liquefied Petroleum Gas (LPG)

The Liquefied Petroleum Gas (LPG) value chain is quickly becoming firmly rooted in the Nigerian market with the recently launched Nigeria's Energy Transition Plan envisaging LPG as the transition cooking fuel. Nigeria holds the largest proven gas reserves in Africa at over 209 trillion cubic feet, making it the ninth largest in the world and as a result; and it has the fastest growing LPG sector in the world with a projected LPG market size of \$10bn. Currently, 10.5% of Nigeria's population uses LPG as its primary cooking fuel.³⁹

There has been a rapid growth in the market as the domestic demand for LPG increased from over 400,000 metric tonnes in 2016 to 1.04 million metric tonnes in 2021.⁴⁰ This growth could be attributed to increased income, rapidly urbanizing population, and strong government support for LPG. Despite this growth, LPG penetration in Nigeria remains far smaller than it could be. LPG distribution is mostly confined to urban and peri-urban areas. Nigeria's consumption of LPG per capita is among the lowest in Africa at 1.8 kg per capita.⁴¹ This low penetration can be attributed to low cylinder numbers, lack of a branded cylinder re-circulation model, perceived safety concerns, high local production costs and low volume, and inadequate infrastructure.⁴²

³⁸ GIZ HERA (2021) Cooking Energy Compendium: A practical guidebook for Implementers of cooking energy services. https://energypedia.info/wiki/Cooking_Fuels

³⁹ Okechukwu Nnodim (2021) "Nigeria's proven gas reserves worth over \$803.4tn." <https://punchng.com/nigerias-proven-gas-reserves-worth-over-803-4tn-fg/#:~:text=THE%20Federal%20Government%20on%20Thursday,extensive%20gas%20resource%20in%20Africa.>

⁴⁰ Ibid

⁴¹ MarketForces Africa (2022) Nigeria's LPG Production Hits 5 mln Tonnes <https://dmarketforces.com/nigerias-lpg-production-hits-5-mln-tonnes/#:~:text=%E2%80%9CLPG%20adoption%20in%20the%20Nigerian,and%2030%20per%20cent%20kerosene.>

⁴² Kelly Carlin, Isahac Esteve, Wayne Omonuwa, James Sherwood (2021) "Scaling eCooking in Nigeria Gap Analysis for Programme Development" <https://meecs.org.uk/wp-content/uploads/2021/07/Scaling-eCooking-in-Nigeria.pdf>

Despite mixed results, LPG currently receives the bulk of focused government support and leadership in the clean cooking sector. In some quarters, the clean cooking goal of the government has been framed as the “universal use of LPG.”⁴³ The Office of the Vice President is currently anchoring the development and implementation of the National LPG Expansion Programme and has partnered closely with the Nigerian LPG Association, the main advocate for the LPG private sector.⁴⁴ The programme seeks to coordinate efforts to expand access to LPG nationally. It has facilitated the establishment of extra terminals in the ports of Lagos, Warri, Calabar and Port Harcourt. It is coordinating an inter-ministerial effort to achieve the target of 5 million tons of LPG consumption by 2025, including the establishment of a LPG Energy Fund.⁴⁵

LPG is the fuel-and-stove value chain that has the greatest potential for growth in the short term, in particular for urban and peri-urban households. Thanks to a number of key policy initiatives – National Gas Policy, National Gas Expansion Programme (NGEP), National LPG Expansion Plan (NLPGE), Economic Sustainability Plan 2020 –, the market has grown very rapidly, particularly in urban areas, such as Lagos State and the Federal Capital Territory.⁴⁶



Traditional Biomass

Biomass is plant based material used as fuel to produce heat or electricity⁴⁷. It comes in various frames. For the purpose of this brief, two major forms will be highlighted: firewood and charcoal. On October 6, during the 2021 Nigeria Clean Cooking Forum held in Abuja, the Minister of State for Environment, Sharon Ikeazor, stated that 60% or more of Nigeria's population rely solely on firewood for heating and cooking activities, and this is very much linked to people living in rural areas.⁴⁸

⁴³World Resources Institute and ICEED, “Report of Clean Cooking Workshop: Clean Cooking in Nigeria’s Revised NDC – ambition, mitigation implications and the way forward,” <https://www.iceednigeria.org/publications.html>

⁴⁴Kelly Carlin, Isahac Esteve, Wayne Omonuwa, James Sherwood (2021) “Scaling eCooking in Nigeria Gap Analysis for Programme Development” <https://mecs.org.uk/wp-content/uploads/2021/07/Scaling-eCooking-in-Nigeria.pdf>

⁴⁵Precious Onuvae (2021) Fostering an Enabling Policy Environment to Expand Clean-Cooking Access in Nigeria https://ng.boell.org/sites/default/files/2021-05/FINAL_Fostering%20an%20Enabling.pdf

⁴⁶Maria Yetano Roche (2021) “Strengthening the Nigerian Clean-Cooking Business Ecosystem” https://iceednigeria.org/press-release/clean-cooking-energy/FINAL_Strengthening%20the%20Nigerian%20Clean-Cooking%20Bus.pdf

⁴⁷Wikipedia (2022) Biomass Explained <https://en.m.wikipedia.org/wiki/Biomass>

⁴⁸Blueprint (2021) Unease as Nigerians resort to firewood, kerosene for cooking. <https://www.blueprint.ng/unease-as-nigerians-resort-to-firewood-kerosene-for-cooking/>

Based on the high cost of LPG, there is an increase in and return to the use of firewood and charcoal in parts of the country.⁴⁹ One of the causes of the hike in the price of these biomass components is its high demand. Insecurity is an additional factor; people are scared of going to the forest to get firewood, thereby causing scarcity and hikes in prices. There are also the price hikes that come with scarcity during rainy seasons.⁵⁰

This situation does not bode well for health and environmental wellbeing. Every day, millions of women and girls around the world breathe in harmful smoke while cooking and spend hours walking far distances to secure cooking fuel. Reliance on polluting, open fires and inefficient fuels leads to health impacts like emphysema, cataracts, cancer, and heart disease.⁵¹

Biomass also has implications for climate and environmental action, from the release of greenhouse gases to the effect it has on deforestation.⁵² Felling of trees from forests and bushes reduces the earth's natural capacity to absorb carbon emissions from the atmosphere. Letting forest growth helps limit atmospheric carbon arising from highly industrialized sectors that are difficult to decarbonize.



Despite a decrease in demand in recent years, kerosene remains the main cooking fuel for a large minority of Nigerian households.⁵³ In 2016, the government of Nigeria phased out a kerosene subsidy that made the fuel affordable for lower-income households, resulting in higher costs for consumers.⁵⁴ This decision was driven by budgetary constraints rather than a conscious strategy to reduce kerosene usage. The dramatic reduction in kerosene use between 2013 and 2018 is attributable, in part, to this change in policy. Despite this reduction in kerosene demand, it is still the major cooking fuel for about 20% of Nigerian households and

⁴⁹Raheem Akingbolu, James Sowole, Victor Ogunje (2021) "Nigerians Revert to Charcoal, Firewood as Domestic LPG Price Increase by 100% Nationwide" <https://www.thisdaylive.com/index.php/2021/11/18/nigerians-revert-to-charcoal-firewood-as-domestic-lpg-price-increase-by-100-nationwide/>

⁵⁰Ibid

⁵¹World Health Organisation (2022) "Household Air Pollution and Health". <https://www.who.int/news-room/fact-sheets/detail/household-air-pollution-and-health#:~:text=Household%20air%20pollution%20was%20responsible,under%20the%20age%20of%205>.

⁵²Environmental Impact Assessment (2022) "Biomass Explained" <https://www.eia.gov/energyexplained/biomass/biomass-and-the-environment.php>

⁵³Maria Yetano Roche (2021) "Strengthening the Nigerian Clean-Cooking Business Ecosystem" https://iceednigeria.org/press-release/clean-cooking-energy/FINAL_Strengthening%20the%20Nigerian%20Clean-Cooking%20Bus.pdf

⁵⁴Kelly Carlin, Isahac Esteve, Wayne Omonuwa, James Sherwood (2021) "Scaling eCooking in Nigeria Gap Analysis for Programme Development" <https://mecs.org.uk/wp-content/uploads/2021/07/Scaling-eCooking-in-Nigeria.pdf>

40% in the case of urban households.⁵⁵ Kerosene was seen as an upgrade from firewood, making cooking less messy than charcoal. It however came with its own downsides such as respiratory problems. Kerosene use is a major source of air pollution in the home and it fumes dangerous toxins like hydrocarbons⁵⁶. It has also accounted for 45% of the pneumonia deaths of children less than the age of 5 and 28% in adults.⁵⁷ Another major harm of kerosene is the negative effect it has on the nervous system.⁵⁸ The main intervention in the kerosene value chain (apart from the removal of subsidy) is the LPG Expansion Plan. The plan aims, among other things, to displace kerosene demand by lowering barriers to LPG adoption.⁵⁹ In this context, the Kerosene to LPG Conversion Programme in Indonesia is widely cited as an example of best practice for large-scale interventions.⁶⁰



Ethanol

Ethanol offers a cheaper alternative for clean cooking. Ethanol burns cleanly without harmful emissions, making it safe for humans and the environment.⁶¹ Studies across Sub-Saharan Africa on ethanol fuel utilisation show a high preference for ethanol-based stoves and fuels over traditional kerosene and charcoal stoves.⁶² In Nigeria, despite the abundance of raw materials for ethanol production such as cassava, palm wine, maize, potato, molasses, sawdust, yam tubers, among others, the production of ethanol on a large scale for cooking has not taken place because the household energy sector is often overlooked by business leaders and policy makers, and it has long been overlooked by ethanol producers.⁶³ Given that the most popular alternative clean cooking solution, which is LPG, has been established to not

⁵⁵Maria Yetano Roche (2021) “Strengthening the Nigerian Clean-Cooking Business Ecosystem” [.https://icednigeria.org/press-release/clean-cooking-energy/FINAL_Strengthening%20the%20Nigerian%20Clean-Cooking%20Bus.pdf](https://icednigeria.org/press-release/clean-cooking-energy/FINAL_Strengthening%20the%20Nigerian%20Clean-Cooking%20Bus.pdf)

⁵⁶Nicholas L., Kirk R., Alison Gauthier, Michael N., (2013). Kerosene: A review of Household Uses and their Hazards in low and middle income countries. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3664014/>

⁵⁷Ibid

⁵⁸Ibid

⁵⁹Maria Yetano Roche (2021) “Strengthening the Nigerian Clean-Cooking Business Ecosystem” [.https://icednigeria.org/press-release/clean-cooking-energy/FINAL_Strengthening%20the%20Nigerian%20Clean-Cooking%20Bus.pdf](https://icednigeria.org/press-release/clean-cooking-energy/FINAL_Strengthening%20the%20Nigerian%20Clean-Cooking%20Bus.pdf)

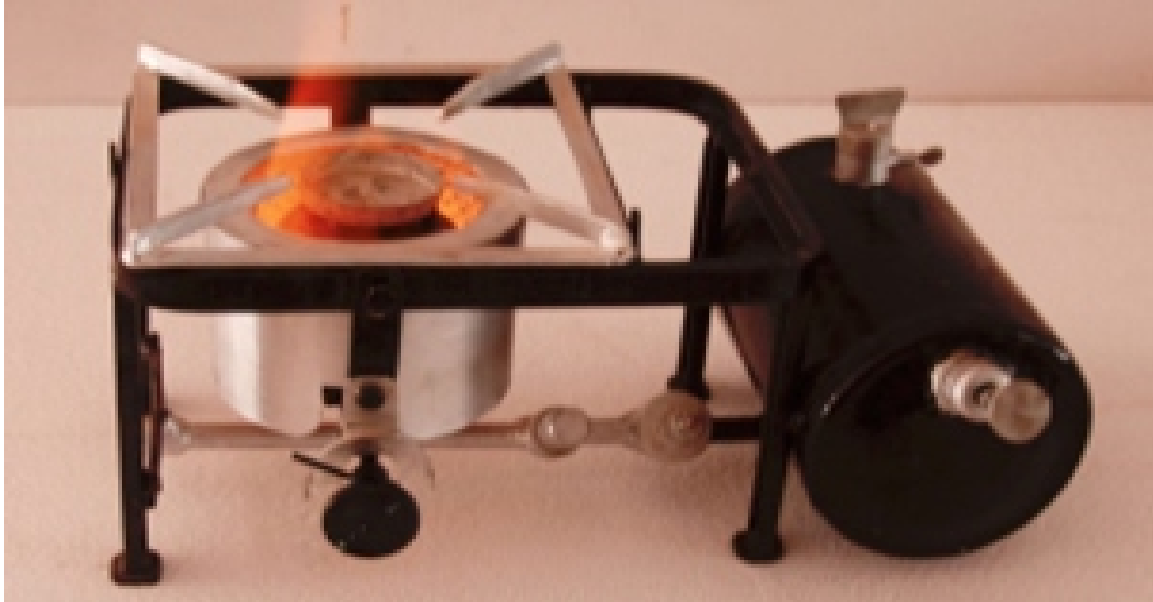
⁶⁰Maria Yetano Roche (2021) “Strengthening the Nigerian Clean-Cooking Business Ecosystem” [.https://icednigeria.org/press-release/clean-cooking-energy/FINAL_Strengthening%20the%20Nigerian%20Clean-Cooking%20Bus.pdf](https://icednigeria.org/press-release/clean-cooking-energy/FINAL_Strengthening%20the%20Nigerian%20Clean-Cooking%20Bus.pdf)

⁶¹Benjamin Boakye, Charles Gyamfi Ofori (2022) “Promoting Ethanol as a Clean Cooking Alternative in Ghana: A Pilot Study”. <https://storage.googleapis.com/stateless-acep-africa/2022/09/Promoting-Ethanol-as-a-Clean-Cooking-Alternative-in-Ghana-A-Pilot-Study-.pdf>

⁶²Ibid

⁶³ECREE (2020) Bioethanol for cooking http://www.ecreee.org/sites/default/files/event-att/project_gaia_ppt_regional_capacity_building_workshop_on_introduction_of_bioethanol_for_clean_cooking.pdf

be the most affordable and accessible mode of clean cooking in the rural areas, a good alternative would be ethanol.⁶⁴



Ethanol Cook-Stoves | Source: Ctc-n.org



Electricity

The lack of grid reliability presents significant challenges to the adoption of eCooking, and may help to explain the extremely low rate of eCooking in the country. Other factors could also be at play, such as a lack of public awareness around the dangers of conventional fuels, a lack of cooking behaviour-appropriate appliances, or insufficient consumer financing to make appliances affordable. However, eCooking is currently rare, but it has a significant role to play in Nigeria's energy transition.

⁶⁴Kelly Carlin, Isahac Esteve, Wayne Omonuwa, James Sherwood (2021) "Scaling eCooking in Nigeria Gap Analysis for Programme Development" <https://meecs.org.uk/wp-content/uploads/2021/07/Scaling-eCooking-in->



The Policy Environment

The clean cooking policy environment in Nigeria is a work in progress. There is no standalone policy for clean cooking in Nigeria but there are policy guidelines that affect clean cooking in a number of official documents. A comprehensive review of these documents reveals six key policies covering clean cooking activities in Nigeria. Although these documents provide some degree of framing for the clean cooking sector, there are no provisions for specific strategies, implementation plans, and funding.

However, during the Nigerian Clean Cooking Forum 2021 organised by the Nigerian Alliance for Clean Cooking (NACC) in collaboration with the Federal Ministry of Environment and other partners, and with support from Heinrich Böll Stiftung (HBS) and Nigeria Energy Support Programme (NESP), the Federal Ministry of Environment pledged to develop a National policy on clean cooking.⁶⁵ A clean cooking subcommittee was inaugurated by the Federal Ministry of Environment in May 2022.⁶⁶ It comprises key stakeholders in the public sector, private institutions, development partners and civil society organisations among others. The clean cooking policy has the potential to improve the overall governance of the clean cooking industry as well as provide consistent, coherent and coordinated measures to strengthen the supply chain, and expand demand for clean cooking fuels and technologies.



Nigeria Clean Cooking forum in Abuja



Key Policies in Clean Cooking

There are six policy documents with the most relevance to Nigeria's clean cooking sector. These include: the National Renewable Energy and Energy Efficiency Policy (NREEEP), the Rural Electrification Strategy and Implementation Plan (RESIP), the Sustainable Energy for All Action Agenda (SE4ALLAA), the National Renewable Energy Action Plans (NREAP), the National Energy Efficiency Action Plan (NEEAP), and the Rural Electrification Master Plan (REMP)

⁶⁵NACC (2021) Press Statement: Nigeria to develop clean cooking policy. <https://naccnigeria.org/press-statement-nigeria-to-develop-clean-cooking-policy>

⁶⁶Oluwatoyin Oladapo (2022) Inauguration of a Government Sponsored National Clean Cooking Committee in Nigeria. <https://www.climatecard.org/2022/08/inauguration-of-a-government-sponsored-national-clean-cooking-committee-in-nigeria/#:~:text=The%20inauguration%20of%20the%20National,universal%20access%20to%20clean%20cooking.>

Summary of Key policy documents related to clean cooking

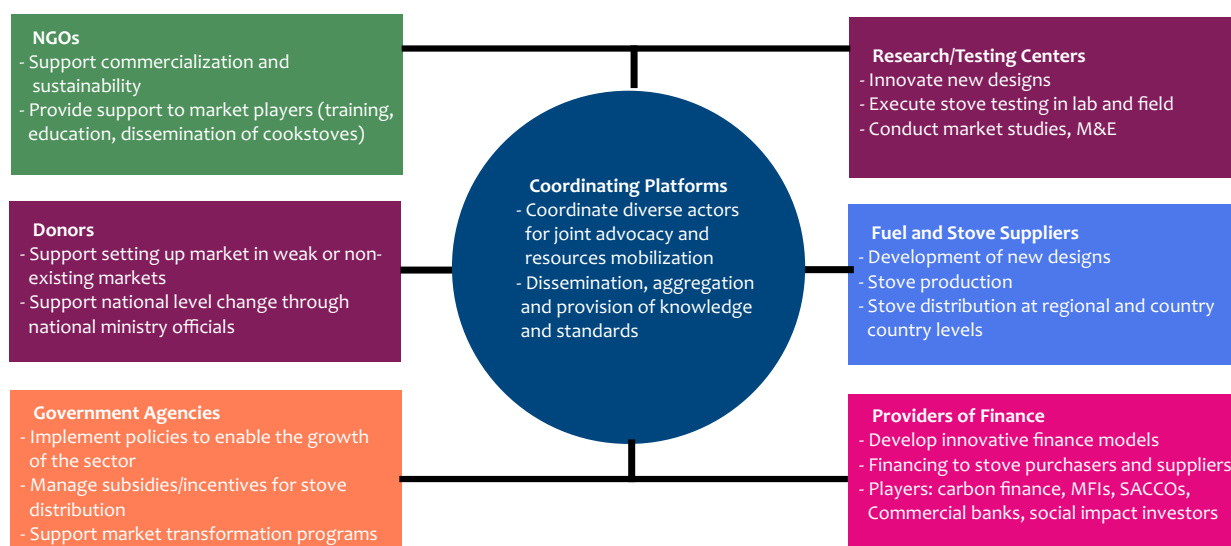
Policy	Coordinating Agency	Impact on Clean Cooking
Rural Electrification Strategy and Implementation Plan (RESIP 2016)	Rural Electrification Agency	There is no particular reference to clean cooking in the RESIP, but the policy aims to use clean energy to enhance living conditions in rural regions through the adoption of clean energy technologies and affordable clean appliances and that indoor air pollution is a significant issue.
National Renewable Energy and Energy Efficiency Policy (NREEEP 2015)	Federal Ministry of Environment	The Ministry of Power emphasizes the significance of transitioning from cooking with wood to modern fuel options. Section 3 sub-section 3.1.3 strategy VI of the policy encourages the production and use of improved and more-efficient cooking stoves.
National Renewable Energy Action Plan (NREAP 2016)	Federal Ministry of Power through its Renewable Energy and Rural Power Access Department (RRD)	Sets specific renewable energy targets by sector and years. Domestic cooking targets include 40% of the population using improved cookstoves by 2020, and 59% by 2030. Charcoal production targets include that 5% should be produced using efficient production techniques by 2020 and 7% by 2030 and modern fuel alternatives for cooking including LPG and ethanol gel fuel(34%).
NEEAP (2016)	Federal Ministry of Power through its Renewable Energy and Rural Power Access Department (RRD)	No specific targets for clean cooking but suggests actions to reduce firewood consumption but it does set more general targets that suggest clean cooking actions, such as reducing firewood demand below supply capacity.It also aligns with the ECOWAS Energy Efficiency Policy (EEEP) which includes targets such as “Achieve Universal access to safe, clean, affordable, efficient and sustainable cooking for the entire population of ECOWAS, by 2030.”

SE4ALLAA (2016)	SE4ALL Secretariat within the Ministry of Power Multi-actor steering committee	Sets energy access, provision, and generation targets linked to sustainable development. It sets the Clean cooking targets thus; 50% replacement of traditional firewood by 2020 and 80% by 2030. The Action Agenda states, “The use of modern cooking fuels as electricity, LPG, kerosene, biogas and solar cookers will increase significantly under the energy access target.”
Renewable Energy Master Plan (REMP 2004 and 2012)	Federal Ministry of Environment	set targets for the use of renewables, especially clean biomass technologies for cooking.

Table 1: Summary of Key policy documents related to clean cooking

Overview of Stakeholders

The major players that enable and support the clean energy ecosystem are divided into seven categories: research institutions and testing centers; fuel and stove suppliers; providers of finance; government agencies/programs; donors; NGOs; and coordinating platforms and initiatives. Numerous players fall under one category. For example, providers of finance include carbon financiers, micro-finance institutions (MFIs), commercial banks, social impact investors, and savings and credit cooperatives. With respect to the NGO sector, these include international, national, and regional organizations. Additionally, fuel and stove suppliers—a sector dominated by private industries—consist of international and domestic manufacturers, importers, and distributors





Government Agencies

The Energy Commission of Nigeria is responsible for overall energy sector planning and policy implementation in Nigeria, while the Ministry of Environment under its Renewable Energy Unit also has a mandate to reduce carbon emissions and mitigate environmental degradation including emissions from unclean energy sources. The Ministry has launched a couple of activities including the Rural Women Energy Security (RUWES) project⁶⁷ and the National Clean Cooking Scheme' (NCCS)⁶⁸ to promote clean cooking energy sources and technologies in Nigeria. Other relevant Ministries are Science and Technology, Health, Women Affairs, Petroleum resources and Education, and Finance. Most national policies and programmes are implemented at state level which implies state governments are also key stakeholders in developing and implementing a national clean Cookstoves programme.



Local and International NGOs

There are a number of NGOs working on promoting clean cookstoves in Nigeria. Some of these organisations include International Centre for Energy, Environment and Development (ICEED), Developmental Association for Renewable Energies (D.A.R.E), Clean Technology Hub, Mfamiyen Conservation Society (MCS), Heinrich Boll Foundation (HBS) CLASP, Wuppertal Institut, Friends of the Environment (FOTE), Project Gaia and the Nigerian Alliance for Clean Cookstoves and Clean Cooking Alliance.



Fuel and Stove suppliers

Nigeria has a high number of clean cook stove designers, manufacturers, distributors, and retailers across fuel types. Yet, most efficient wood and charcoal stoves are mainly imported from the United States, Europe and Asia with the exception of Toyola efficient charcoal stoves, Envirofit charcoal and firewood stoves, Sosai Ecozoom stove which are assembled in Nigeria and Nenu stoves, Methano Green Cookstove, Happy Cookstove which are locally manufactured. Upenergy group, Fonbol Energy, SMEfunds, Midas Cookstoves, Avalanche, Greenland Fatti Gold services are some of the suppliers of efficient wood and charcoal stoves in Nigeria.

⁶⁷Climate and Clean Air Coalition(2022) Rural Women Energy Security
<https://www.ccacoalition.org/en/partners/rural-women-energy-security-ruwes>

⁶⁸Channelstv(2019) National Clean Cooking Scheme (NCCS)<https://www.channelstv.com/tag/national-clean-cooking-scheme-nccs/>



Financing institutions

The following are the most known and active organisations that provide or are interested in injecting financing in one way or another in the supply chain of stoves and fuels. It is likely that other organisations exist that are not mentioned here. In addition there are cooperatives and associations that provide financial services to its members. Some financing institutions include: Alitheia Capital, Bank of Industry, Atmosfair GmbH, DevA Access and Empowerment Int'l Limited, Informal faith/Social/market based Groups.



Donors

Bilateral, multilateral, and UN development agencies have played significant roles in mobilizing global resources for clean cooking solutions and supporting the creation of enabling environments. Some initiatives include the UN's Sustainable Energy for All (SE4ALL), EnDev, World bank/ESMAP, and Shell Foundation.



Universities and Laboratories

There are six Energy Research Centres under the Energy Commission of Nigeria with specific technical/research roles. These are:

- National Centre for Energy Research and Development (NCERD), at the University of Nigeria, Nsukka (responsible for research in solar and renewable energy)
- Sokoto Energy Research Centre (SERC), at Usmanu Danfodiyo University, Sokoto (also responsible for research in solar and renewable energy)
- National Centre for Energy Efficiency and Conservation (NCEEC) at the University of Lagos (responsible for research in energy efficiency and conservation).
- National Centre for Hydropower Research and Development (NCHRD) at the University of Ilorin (responsible for research in hydropower).
- National Centre for Energy & Environment (NCEE) at the University of Benin (responsible for research in energy and environment)
- National Centre for Petroleum Research and Development (NCPRD) at the Abubakar Tafawa Balewa University, Bauchi (responsible for research in petroleum).

Only two of the above mentioned centres i.e. The National Centre for Energy Research and Development (NCERD) and Sokoto Energy Research Centre (SERC) are involved in research on clean cookstoves and fuels.⁶⁹

In addition, a Clean Cookstoves Development and Testing Centre was established at NCERD, University of Nigeria, Nsukka, South East Nigeria with support from the Clean Cooking Alliance formerly the Global Alliance for Clean Cooking. The center combines stove development and testing, research and services and has an Advisory Board made up of representatives from the Standards Organization of Nigeria, Energy Commission of Nigeria, Nigerian Alliance for Clean Cookstoves and ICEED.



Identified Barriers and Opportunities in the clean cooking sector in Nigeria

Several barriers exist in the clean cookstove and fuel markets in Nigeria. These barriers have slowed the uptake of cleaner fuels and technologies for cooking. The most notable gaps in the enabling environment have to do with tax and tariff policies, the infrastructure for cookstove quality testing, regulations on biomass and modern fuels, and access to finance.



Cooking Culture and Resilience

Studies reveal that the kind of cooking energy used is impacted by the cooking culture, traditions, and attitudes of the families, regardless of income, the availability of fuel, and the cost of alternative fuels.⁷⁰ In Nigeria, it's common knowledge that particular fuels make specific meals taste better or cook faster. As a result, two or more fuels are widely utilized in several places, even by people with high incomes. Especially in cases where clean alternatives are most commonly utilized, stacking cooking-energy options is not always an issue. Many admit that households must explore alternatives options due to seasonality and unpredictability in the availability of some fuels. During rainy seasons, where cooking outside the house is a challenge and proper kitchens are not available, alternatives to wood fuel become attractive. Households also frequently take precautions to protect themselves when there are shortages of a specific fuel by making sure alternate cooking fuels are accessible. Therefore, stacking becomes a tactic to increase resistance to adverse weather, price shifts, or supply shortages.



Lack of Awareness on the Value Proposition of Clean Cooking

Most of the time, people are stuck with the choices they know, the traditions they inherit, and their unique situations. Consumers are not always interested in clean biomass cookstoves because they do not understand why there is a need to change the technology when the fuel is still the same. The negative health effects of cooking with wood over the conventional three-stone fire are also not widely known. However, the value proposition that cleaner fuels and technologies do improve family health is not always clear and is not typically a primary concern. It will take effort to increase this awareness. Cooking with dirty fuels has health and financial implications that extend beyond a single household, hence it is both a public health and a public good issue. Dirty cooking is already responsible for the premature death of nearly 100 000 lives annually.⁷¹ The government should prioritize the welfare costs of illness and mortality resulting from this practice. The responsibility is on governments at all levels to encourage behavior-change communication in order to overcome this obstacle.

⁶⁹ ESMAP (2019) "Infrastructure Development Planning in Nigeria"

https://rise.esmap.org/data/files/library/nigeria/Clean%20Cooking/Supporting%20Documentation/Nigeria_NCCM-DP-Program-Documents.docx



Current Policies are Inadequate

Market-expansion policies for LPG are getting clearer and stronger. There is a national target and a road map. Policy recommendations include the elimination of the 5% VAT, the availability of loans from the Bank of Industry with interest rates in the single digits, and the formation of the National LPG Expansion Initiative housed in the Office of the Vice President. In order to improve public-private collaboration, we also have the Presidential Inter-Ministerial Committee on LPG, which includes the Nigeria LPG Association. Beyond general statements on providing efficient wood stoves and LPG to rural areas, there are no concrete steps taken to implement them. Additionally, there are no specific policy initiatives to boost cleaner biomass energy technologies in rural regions. Apart from the Federal Ministry of Environment and the Energy Commission of Nigeria, there are no active voices in government that advocate strong action for clean cooking in rural regions.



Inadequate Sources of Finance

Both urban and rural access-expansion programmes face formidable financial hurdles. Based on a survey administered in a community in Asokoro in 2021, the women stated that the average they can spend on an LPG stove is in the range of N2 000–5 000. Only 2% were willing to spend upto 10 000 on the stoves. In addressing this challenge, a market-based approach is required, using patient capital for the relatively weak SMEs that dominate the provision of ICS.. For users to adopt these new technologies more readily, consumer finance options (such pay-as-you-go) may be necessary. It is also the poor who often avoid making credit-based purchases in order to protect themselves from income uncertainties. However, whichever way access-expansion delivery is modelled – market mechanisms or public-goods approach – funding will be required.



Lack of Standards, Safety and Good Industry Practice

There is a need to ensure the uniform quality of cooking devices. Since there are no cylinder recertification facilities in the LPG industry, the majority of the cylinders in use are old and expired. Some practitioners and consumers have found the ICS available in the market to be of poor quality and this discourages demand. Although a national standard for biomass cookstoves has been adopted, it has not yet been put into effect. With only two testing labs, the National Stove Eligibility Laboratory at the University of Nigeria Nsukka, and at Usmanu Danfodiyo University Sokoto, more labs are needed around the country. The lack of a certification scheme such as that of the International Finance Corporation is also a major barrier to clean-cooking energy expansion.

⁷⁰Onyekuru N.A., Ifejirika C.A., Onuigbo D.M., Mebo R.A., & Eboh E.C. (2020) “Factors Affecting Households’ Choice of Cooking Energy in Enugu State, Nigeria”
<https://www.ajol.info/index.php/as/article/view/2009666/189503>

⁷¹Adeola Ijeoma Eleri (2021) “Expanding Demand for Clean-Cooking in Nigeria”
https://ng.boell.org/sites/default/files/2021-05/Expanding%20Demand%20EDITED_Draft%201.pdf

Recommendations

The current economic situation in the country and the paucity of funds require scaling up innovative financing mechanisms in the clean cooking sector: The government should consider other non-traditional funding mechanisms. The Green Bond is one choice; Nigeria has utilized it for a number of priority initiatives that advance environmental and developmental objectives. Secondly, the proposed Central Bank of Nigeria-backed low-interest facility for LPG should be activated. Along with other promised fiscal measures, this would provide loans through the Bank of Industry at single-digit interest rates. Thirdly, international climate funds will be particularly important in lowering the cost of LPG and/or the outright removal of costs for ICS in semi-urban and rural areas. Finally, it is perhaps time to revisit the controversial issue of cooking-energy subsidies in Nigeria. A number of smart subsidy-delivery systems such as a voucher system, mobile money or the use of geospatial tracking mechanisms could be effective. Suppliers can also be supported through output-based incentive systems that ensure the delivery of clean-cooking solutions prior to the reward.

Increased coordination at the national and local levels with engagement from multi-sectoral stakeholders to produce and maintain holistic policy and programmatic responses: This can be expedited by a national strategy with a central body responsible for planning and implementation. Given the localized nature of clean cooking, governments will have to be engaged across all levels and draw upon the expertise and resources of implementers, research institutions, international donors and local organizations. This will also require a focus on increased capacity-building efforts among all stakeholders involved.

Embed and prioritize the clean cooking agenda into national energy policies and strategies to ensure systematic efforts are undertaken to achieve universal access to clean cooking: Governments should set comprehensive clean cooking targets and provide enabling policies as well as a regulatory environment that is conducive to the development of a self-sustaining market. This can assist in providing an overall direction for the sector, establish rapport for further action, and invite stakeholders from numerous areas including the international community and the financial sector.