

NIGERIA RESIDENTIAL ENERGY DEMAND-SIDE SURVEY REPORT 2024



AUGUST 2024



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Abbreviations and Acronyms

ATC&C	Aggregate, Technical, Commercial and Collection
CAPI	Computer-Assisted Personal Interviewing
CEO	Chief Executive Officer
CFLs	Compact Fluorescent Lamps
Ckm	Circuit Kilometer
CSPPro	Census and Survey Processing System
DPG	Diesel/Petrol Generator
EAs	Enumeration Areas
ECN	Energy Commission of Nigeria
EU	European Union
FCT	Federal Capital Territory
FMP	Federal Ministry of Power
FSM	Field Services and Methodology
HH	Household
ICLs	Incandescent Lights
IEA	International Energy Agency
Kg	Kilogram
kVA	Kilo-Volt-Amperes
kWh	Kilo Watt Hour
kW	Kilo Watt
LEDs	Light-Emitting Diodes
LFLs	Linear Fluorescent Lights
LPG	Liquefied Petroleum Gas
MDAs	Ministries, Departments and Agencies
MW	Megawatt
NAEESD	National Accounts, Energy and Environment Statistics Department
NBS	National Bureau of Statistics
NERC	Nigerian Electricity Regulatory Commission
NPC	National Population Commission
NREDSS	Nigeria Residential Energy Demand-Side Survey
PAPI	Paper-Assisted Personal Interviewing
RERPA	Renewable Energy and Rural Power Access
SDG	Sustainable Development Goal
SHS	Solar Home System
SMG	Solar Mini-Grid
SPSS	Statistical Package for the Social Sciences
Tj	Terajoules

Concepts and Definitions

Acquisition:	<i>Acquisition refers to energy sources obtained by households through cut/collection, purchase, and other ways such as barter, payment-in-kind, gift, and borrowing.</i>
Bioethanol:	<i>This is a type of alcohol that is obtained from different types of plants rich in cellulose such as sugar cane, sugar beet, or some grains such as corn.</i>
Biogas:	<i>Gases arising from the anaerobic fermentation of biomass and the gasification of solid biomass (including biomass in wastes).</i>
Briquettes:	<i>These are small, compressed block of coal dust or other combustible biomass material (e.g. charcoal, sawdust, wood chips, peat, or paper) used for fuel and kindling to start a fire. The term derives from the French word brique, meaning brick.</i>
Charcoal:	<i>The solid residue from the carbonisation of wood or other vegetal matter through slow pyrolysis.</i>
Coal:	<i>Coal is a combustible black or brownish-black sedimentary rock with a high amount of carbon and hydrocarbons. Coal is classified as a non-renewable energy source because it takes millions of years to form. Coal contains the energy stored by plants that lived hundreds of millions of years ago in swampy forests.</i>
Crop residues:	<i>Crop residues are materials left on cultivated land after the crop has been harvested. They can be used in biofuel production.</i>
Electricity (Captive Diesel/Petrol Generator):	<i>These are power generated from diesel/ petrol generator.</i>
Electricity (Solar Home System/Mini-Grid):	<i>Solar Home System (SHS) is a system whereby solar energy is converted to electricity through a PV module, the converted electricity can be used immediately or stored in a battery for later use in different home appliances, while a mini-grid is a set of small-scale electricity generators and possibly energy storage systems interconnected to a distribution network that supplies electricity to a small, localised group of customers and operates independently from the national transmission grid.</i>
Electricity (National Grid):	<i>This is a network of power generation, transmission, and distribution systems that supplies electricity to homes, businesses, or industries. Nigeria's national power grid connects power generation stations to electrical loads throughout the country.</i>
Fuelwood:	<i>This is derived from cutting and burning wood materials such as logs and twigs. It is a traditional source of energy obtained from natural or managed forests or isolated trees.</i>
Liquefied Petroleum Gas (LPG):	<i>This refers to liquefied propane (C₃H₈) and butane (C₄H₁₀) or mixtures of both. This is widely used for cooking.</i>
Pellet fuels (or pellets):	<i>These are types of solid fuel made from compressed organic material. Pellets can be made from any one of five general categories of biomass: industrial waste and co-products, food waste, agricultural residues, energy crops, and untreated lumber.</i>
Terajoules (TJ):	<i>This is a unit of measurement of energy consumption: a terajoule is equal to one trillion joules.</i>
Terawatts hour (TWh):	<i>This is the unit of energy used for expressing the amount of produced energy, electricity and heat.</i>
Wood chips:	<i>They refer to small pieces of wood cut or chipped from trees or large wood products like boards, plywood, etc. Woodchips may be used as a biomass solid fuel and are raw material for producing wood pulp.</i>

Preface

The drive for sustainable energy in Nigeria is geared towards decarbonisation and the promotion of an efficient energy supply that will support rapid economic growth and development. Nigeria's Energy Transition Plan which aims to achieve net-zero emissions by 2060 as declared at the 2021 UN Climate Change Conference of the parties (COP26) expresses the commitment of the nation to diversify our energy sources. With Nigeria's rising population, the energy demand is undoubtedly increasing across various forms. In recent times, energy statistics have been in high demand to support policies that will promote investment and optimisation of energy in the sector. Nevertheless, inadequate data production remains a major constraint in addressing the challenges that have hampered progress.

To address these challenges, the Bureau in its effort to improve data production has conducted the 2024 Nigeria Residential Energy Demand-Side Survey (NREDSS) in nine (9) states of the Federation in collaboration with key stakeholders such as the Federal Ministry of Power (FMP), Energy Commission of Nigeria (ECN), European Union (EU), and the International Energy Agency (IEA). The survey is aimed at addressing the data gap noticed on the energy demand side. It critically assessed how energy is acquired, used, and sold in various households, the conversion technologies adopted, as well as energy security.

The survey explored different types of traditional and modern bioenergy, and other energy sources used for cooking, heating, lighting, and powering electrical appliances. The data collection was done using structured questionnaire which were divided into several modules, including demographic and socio-economic information, energy acquisition and use, fuel conversion technologies, and energy security. It deployed Computer-Assisted Personal Interviewing (CAPI) for more efficient and quality data production.

Against this background, the information gathered from this exercise is far-reaching and unique, as details of this report include the views of households on the use of energy across different products. It is hoped that the data provided by this survey will inform policy as well as contribute to Nigeria's commitment to achieving Sustainable Development Goal 7 – universal access to affordable, reliable, sustainable, and modern energy by 2030.

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Highlights

Demographics



63,742,899

Total Household Members

48.2%



51.8%

Sex of Household Members



12,734,044

Total Number of Households

Fuelwood

40.7%

of households purchased fuelwood (excluding fuelwood to produce charcoals) in the last 30 days

18.9%

of households acquired fuelwood (through in-kind payment, barter, gift, borrow and other) in the last 30 days

16.7%

of households faced negative consequences due to collection of fuelwood

67.8%

of households have access to fuelwood (any domestic, agricultural, commercial, cultural or religious use)

1.7%

of households sold fuelwood



Charcoal

21.6%

of households purchased charcoal

0.6%

of households acquired charcoal (through in-kind payment, barter, gift, borrow and other) in the last 30 days

22.0%

of households that used charcoal (any domestic, agricultural, commercial, cultural or religious use)

6.7%

of households produces charcoal and experienced negative consequences for production

0.3%

of households produced charcoal

0.7%

of households sold charcoal

Liquefied Petroleum Gas

20.0%

of households purchased LPG in the last 30 days

19.4%

of households used LPG in the last 30 days

Pellets, Briquettes and Improved Fuelwood

0.4%

of households acquired pellets, briquettes and improved fuelwood in the last 30 days

0.5%

of households used pellets, briquettes and improved fuelwood in the last 30 days

Woodchips/sawdust/other industrial by-products (indirect fuelwood)

0.2%

of households purchased wood chips/sawdust/ others in the last 30 days



Agricultural residues and garbage/plastics

0.3%

of households used crop residues/ grass/ straw / shrubs/ animal dungs/plastics in the last 30 days

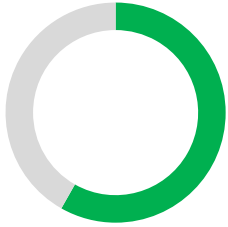
11.3%

of households acquired crop residues/ grass/straw / shrubs /animal dungs/plastics in the last 30 days

10.2%

of households used crop residues/ grass/straw / shrubs /animal dungs/plastics in the last 30 days

Electricity (National Grid)



58.2%
of households are connected to Electricity (National Grid) supply

Solar Home Systems/Solar Mini-Grid (SHS/SMG Electricity)

4.8%
of households have solar home systems/ solar mini-grid supply

2.9%
of households use solar home systems/ solar mini-grid supply

Electricity Captive (Diesel/Petrol, Generator)

4.8%
of households acquired Captive - (diesel/ petrol generator)

3.4%
of households used Captive - (diesel/ petrol generator)

Clean Energy

35.7%
of households have access to clean energy



Executive Summary

The 2024 Nigeria Residential Energy Demand-Side Survey (NREDSS) is the maiden edition of the energy demand survey conducted to provide an understanding of household energy acquisition, usage, and expenditure. The survey canvassed information from households on the acquisition of energy sources such as fuelwood, charcoal, agricultural residues, liquified petroleum gas, etc. It also assessed the hazards from wood collections by households.

The NREDSS was developed to improve the availability of information in the energy sector for evidence-based planning and decision-making. The survey was conducted by the National Bureau of Statistics across nine (9) states of the Federation in collaboration with key stakeholders such as the Federal Ministry of Power (FMP), and Energy Commission of Nigeria (ECN). The states covered were carefully selected across the six geo-political zones of the country, they are: Akwa Ibom, Bauchi, Ekiti, Oyo, Enugu, Kwara, Plateau, Kano, and Sokoto.

The objectives of the survey are to (i) assess household energy consumption (ii) evaluate access to electricity (iii) analyse residential appliances and usage (iv) provide valuable insights for policymakers, industry players and the government.

In the surveyed states, 8,100 households from 540 EAs were sampled across urban and rural areas. A systematic sampling technique was adopted to select 15 households in each EA within the state. Data collection was implemented using structured questionnaires that captured information on household demographic characteristics, energy acquisition and use, fuel conversion technologies etc.

The findings from the survey show that fuelwoods are commonly acquired through purchase. About 41 percent of households reported purchasing fuelwood, closely followed by cutting/collection (39.0 percent), only 18.9 percent of households used other means such as barter, gift, borrowing etc. More than half of the fuelwood cut/collected by households are branches, stems, and trees. The results reveal that 55.3 percent of fuelwood cut/collected were branches, stems and trees, while 67.8 percent of households used fuelwood either for domestic, agricultural, commercial, cultural or religious purposes.

The survey found that one in every five households (22.0 percent) used charcoal during the reference period. Among households using charcoal, 21.6 percent purchased the product, only 0.3 and 0.6 percent acquired it through own production, and other means respectively. Furthermore, the results show that 19.4 percent of households reported using LPG during the reference period. This means that about one in every five households use LPG. The average monthly expenditure on LPG stood at N10,239.7 across the surveyed states.

Over 58 percent of households are connected to the national grid across the nine states surveyed, and 86.6 percent had electricity supply during the reference period. Out of the total households connected to the national grid, 85.2 percent used an estimated billing system while 14.8 percent reported using a pre-paid billing system. In addition, the average monthly expenditure of households on electricity was estimated at N4,155.8 during the reference period.

It is recommended that following the wide use of fuelwood, the government should promote the re-planting of trees and the use of clean energy such as LPG, wind, solar etc, to reduce environmental problems such as air pollution, climate change, water pollution, thermal pollution, and solid waste disposal. In addition, the government should encourage establishment of more LPG stations and local production of gas cylinders and other accessories with added value to lower the end-user's cost; and optimise electricity generation by decentralising the national grid through mini-grids.

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Introduction

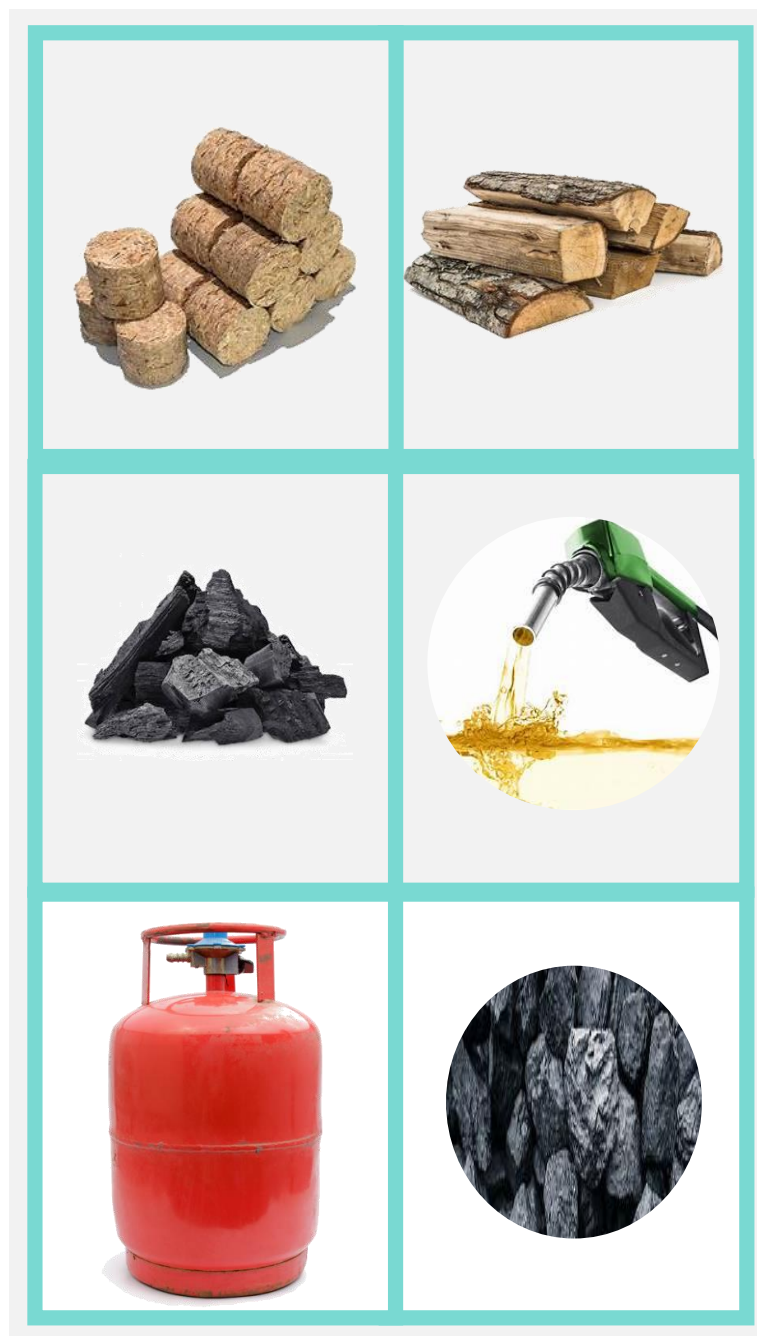
1.1 Background

The provision of adequate, reliable and affordable energy is crucial to the ongoing reforms in Nigeria. Energy is a key source of economic growth because many production and consumption activities involve energy as a basic input. According to the Federal Ministry of Power, over 175 million Nigerians lack access to clean cooking energy, with far-reaching implications for the economy, public health, women's status, deforestation, and climate change. Current power generation stands between 4,000 and 4,500 MW for a population of approximately 220 million individuals. Recognising the shortage in power generation, Nigeria has initiated reforms to allure private investments in renewable energy ventures such as solar, wind power and bio energy. Nevertheless, the potential of this emerging market remains largely untapped with growing energy needs and lots of investment opportunities.

The Nigerian Electricity Regulatory Commission (NERC) First Quarter 2023 Report reveals that 28 grids are connected to generating plants, yet the infrastructure falls short of meeting the peak demand of 32 terawatt hours, leaving approximately 92 million Nigerians unconnected to the national grid. This deficiency is projected to worsen without substantial sectoral investments, inadequate transmission lines result in power outages. As of 2022, the existing generation capacity stood at 25,633Ckm of line length which is expected to rise to 29,226Ckm by 2028. However, this capacity cannot be maximised due to lack of modern transmission lines and equipment, gross mismanagement and poor maintenance of available infrastructure as well as inefficient grid design, among other factors. Distribution companies also face challenges with huge Aggregate, Technical, Commercial, and Collection (ATC&C) losses, and evacuation issues. Despite the potential of off-grid solutions like mini-grids, progress is hindered by limited access to finance and a dearth of skilled workforce. Consequently, Nigeria's vast renewable energy potential remains largely unrealised. As Nigeria faces rapid population growth, urbanization, and other socio-economic factors, understanding residential energy demand is vital for shaping effective energy policies, improving energy access, and ensuring sustainability.

The Nigeria Residential Energy Demand-Side Survey presents an in-depth analysis of the energy consumption patterns and behaviours of households. The survey aims to uncover the intricate dynamics that drive energy consumption in households, offering insights that are crucial for addressing current challenges and planning for future energy needs.

This report is based on extensive data collected from households across the six geopolitical zones with diverse socio-economic backgrounds.



It examines various factors influencing energy use, including economic status, demographic characteristics, and technological adoption. By systematically analysing the data, this report identifies key household energy consumption taste and pattern in the target states, gaps, and opportunities for intervention and decision-making.

The findings of the Nigeria Residential Energy Demand-Side Survey will support the development of targeted strategies to enhance energy efficiency, promote the adoption of renewable energy sources, and improve the overall resilience of the country's energy system. This report underscores the importance of data-driven approaches in addressing the energy challenges faced by households and contributes to the broader goal of achieving sustainable energy for all.

1.2 Data Challenges Stifling Progress

Nigeria's strides towards achieving Sustainable Development Goal 7 (SDG 7) - "To ensure universal access to affordable, reliable, sustainable, and modern energy for all by 2030" requires adequate data. The absence of robust data hinders the assessment of the current situation, optimisation of policies, and tracking of progress.

The country's energy balance is pivotal for energy policy formulation but suffers from incomplete and unreliable data, often necessitating reliance on assumptions. This raises transparency issues and impedes effective planning. Inadequate data has led to insufficient power-generation and unreliable energy services for businesses and citizens.

1.3 Addressing the Data Gap on Household Energy Demand-Side

The dearth of data has impeded progress towards achieving Sustainable Development Goal 7 (SDG 7) which seeks to ensure access to affordable, reliable, clean energy in Nigeria. It is against this backdrop that the National Bureau of Statistics with financial support from the European Union (EU) conducted the Nigeria Residential Energy Demand-Side Survey in collaboration with the Energy Commission of Nigeria (ECN), and Federal Ministry of Power (FMP) with technical support from International Energy Agency (IEA).

1.4 Survey Objectives

The survey primary objectives are:

- Assessing household energy consumption
- Evaluating access to electricity
- Analysing residential appliances and usage
- To furnish valuable insights for policymakers, industry players and the government



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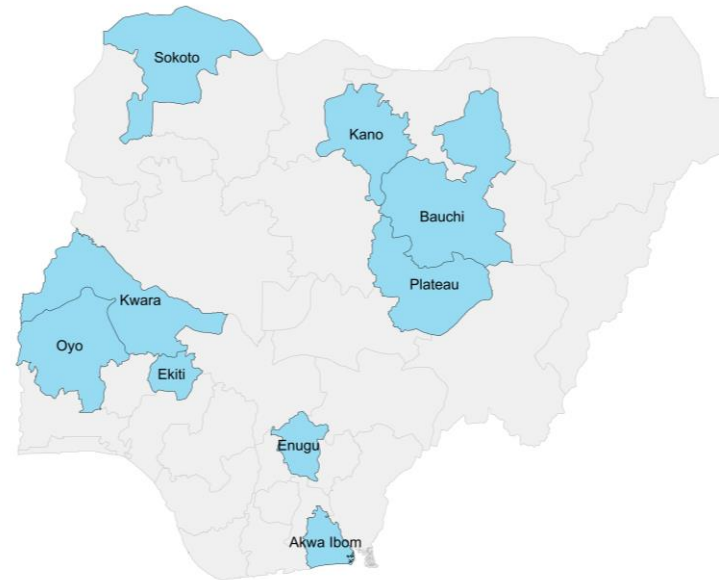
Methodology

2.1 Study Area and Sample Design

The 2024 Nigeria Residential Energy Demand-Side Survey (NREDSS) was carried out to assess the level of household energy acquisition, usage, sales, fuel conversion technologies, and other socio-economic indices. The energy in focus comprises of fuelwood (firewood), charcoal, LPG, kerosene, and modern bioenergy used for cooking, heating, lighting, and other energy types for powering of electrical appliances across nine (9) States, namely: Akwa Ibom, Bauchi, Ekiti, Enugu, Kano, Kwara, Oyo, Plateau, and Sokoto. The sampling frame used for the selection was obtained from newly digitized maps of delineated Enumeration Areas (EAs) by the National Population Commission (NPC).

A two-stage sampling technique was used, the first was the selection of EAs within the strata and the second was the selection of households within each enumeration area. In each of the nine (9) States, sixty (60) EAs were systematically selected with equal sample sizes, giving a total of 540 EAs. A systematic sampling technique was adopted to select 15 households in each EA within the state. The target sample size was 8,100 households in the nine states.

Figure 1: Map Showing States Surveyed



2.2 Questionnaire

The questionnaire used for the survey was organised into the following sections: identification; household demographics; acquisition of the various types of energy and their uses; household fuel for cooking, home-heating, and lighting with their conversion technologies as well as energy security. It is worth noting that the demographic section targeted all household members, while key respondents were the heads of households,

or any adult member aged 18 years and above with knowledge of energy consumption of the household. The energy ‘Section’ was targeted to a household member who is either the ‘main cook’, ‘financing cooking energy’, ‘fire-wood collector’, or ‘charcoal producer’.

Box 1. List of Modules Included in NREDSS Questionnaire

- | | | | |
|----|---|----|---|
| 1 | Demographic Characteristics and Socio-Economic Information | 12 | Crop residues ... Acquisition and Use |
| 2 | Household Building Information | 13 | Electricity (National Grid) Supply and Use |
| 3 | Fuel-wood Acquisition (Purchase and Cut/Collect), Use and Sales | 14 | Electricity (Home System/Mini-Grid) Supply and Use |
| 4 | Charcoal Acquisition (Purchase and Production), Use/Consumption and Sales | 15 | Electricity (Captive: Diesel/Petrol Generator) Generation and Use |
| 5 | LPG Acquisition and Use | 16 | Household Fuel Use for Cooking/Conversion Technologies |
| 6 | Bio-gas Acquisition and Use | 17 | Household Fuel Use for Home-Heating |
| 7 | Kerosene Acquisition and Use | 18 | Household Fuel Use for Lighting |
| 8 | Bio-ethanol Acquisition and Use | 19 | Energy Security |
| 9 | Coal Acquisition and Use | 20 | Identification of Appliance and Energy Consumption |
| 10 | Pellets, Briquettes ... Acquisition and Use | 21 | Lighting Equipment |
| 11 | Wood chips ... Acquisition and Use | | |

2.3 Pilot Survey

A pilot survey is the process of testing all stages of data production to be carried out during the main survey, under actual survey conditions in the field, though on a smaller scale. This helps to finetune all survey instruments as well as to ensure adequate planning for all logistics that will be required for the main survey. The pilot survey was carried out in March 2024 in two States – Delta State in the South-South zone and Gombe in the North-East zone – with a total sample size of 120 households (60 HHs in each state). Respondents for the pilot survey were identified by randomly selecting 4 enumeration areas (EAs) per State, 15 households per EA, and one eligible adult respondent per household. The results of the pilot survey were documented in a technical report and used to improve survey procedures, question formulations, instructions for interviewers in the interviewer guidelines, sampling procedures applied by interviewers and other technical issues.

2.4 Main Survey

2.4.1 Sample design

For the main survey, a total of 7,706 household interviews were conducted across the 9 states (Akwa Ibom, Bauchi, Ekiti, Enugu, Kano, Kwara, Oyo, Plateau, and Sokoto). The sampling methodology adopted was a stratified, two-stage sample design conducted in the 9 states. The first stage entailed the selection of primary sampling units, which in this case were the EAs. A total of 540 EAs were randomly selected.

The second stage involved the selection of secondary sampling units, which were the households (HHs).

At this point, 15 HHs were randomly selected from each of the initially selected EAs, making a total of 900 households that were selected in each state.

2.4.2 Sample Size Determination

The sample design and sample size were determined by the characteristics of the population, and availability of funds for the study. However, the sample size for this study was calculated and adjusted as 8,100 households. Determination of the number of sampled households (denoted as n), generally uses the following formula that is based on several parameters that will affect the precision. The required sample size n is given as:

$$n = \frac{Z^2 * D * P(1 - P)}{e^2}$$

Where:

n = Sample Size

D = Design effect

P = Predicted value of indicator (in target/base population)

Z = Confidence Interval

e = Margin of Error

The sample size was determined using 42% of predicted population of households, design effect of 3.5%, 2% margin of error and 95% Confidence Interval (1.96). Using the formula above, this calculation gave a total number of 900 sampled households per State.



2.5 Training

The first level of preparation – the Training of Trainers (TOT) – was held in Abuja in April 2024, lasted for three days and included Trainers, Monitors and Coordinators. Participants were staff of NBS, ECN, and FMP. The second level training was conducted for the recruited fieldworkers (team leads and teammates) across all

9 states and lasted for four days. Training focused on the efficient administration of the survey instruments, measurement of the fuelwood and its water content in kg, etc., and the seamless deployment of the CAPI device.

2.6 Fieldwork Arrangements

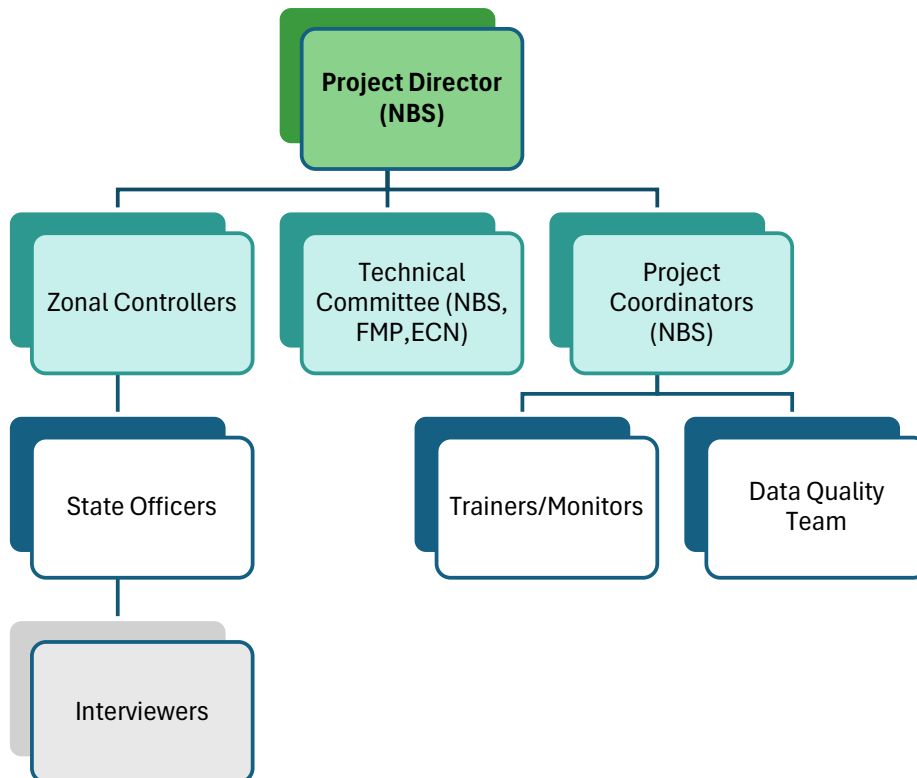
For the field work, four teams were constituted in the 9 states. Each of the teams comprised one team lead and two teammates. Each team was assigned 15 EAs for coverage and the entire fieldwork lasted for 17 days from 19 April to 5 May 2024. In addition to team leads, field monitors, coordinators, state officers and zonal controllers ensured the proper conduct of interviews and quality control.

The use of Computer Assisted Personal Interviewing (CAPI) device was adopted to collect the data from the respondents at the households. Data were transmitted in real-time to NBS central server for effective and efficient data quality control measures that ensure instant corrections and validations before the enumerators leave the EA.

2.7 Survey Constraints

The challenges encountered during the entire survey period in some selected enumeration areas include inaccessibility due to difficult terrain, insecurity, and poor mobile network connectivity which delayed synchronisation of completed interviews.

Figure 2: NREDSS Organisational and Operational Structure



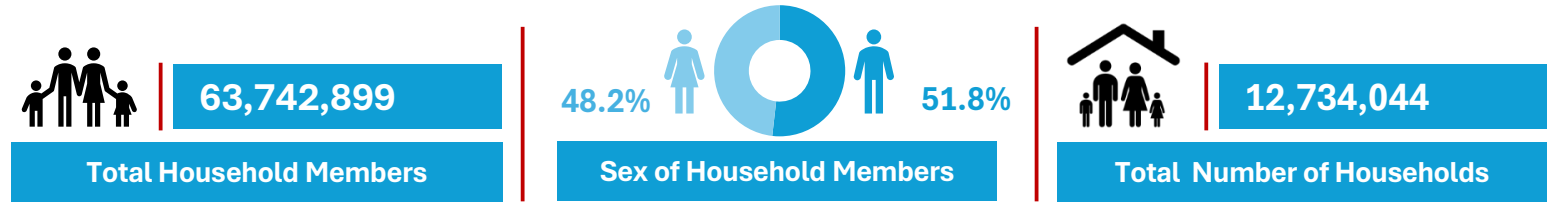
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Survey Findings

3.1 Demographic Characteristics

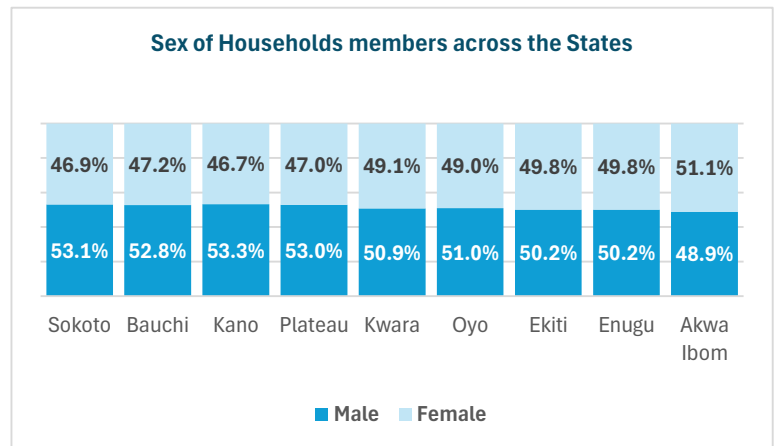
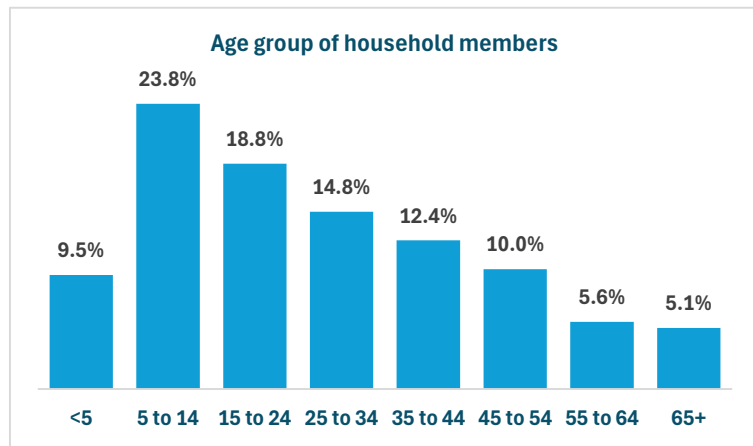
This section provides the demographic and household characteristics of the states surveyed. This includes relationship to the head of household, age group of household members, marital status, type of religion, educational qualification, household average income, type of household building structure and materials used for building.

Sex, Age of Household Members



Disaggregation by sex shows more male members of the household across the surveyed states with 51.8 percent compared to the female counterpart with 48.2 percent. This pattern was observed across all states except in Akwa Ibom state where the female members of the household recorded 51.1 percent and male counterpart had 48.9 percent.

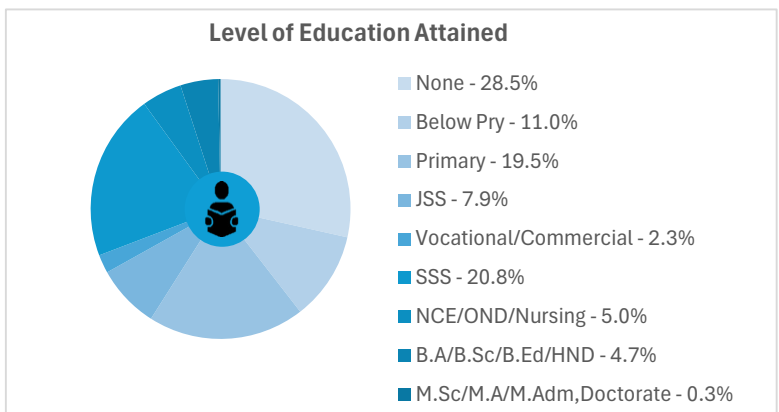
Further disaggregation by age group of household members shows that individuals between age 5-14 years had the highest with 23.8 percent whilst age 65+ recorded the lowest with 5.1 percent.



The overall results show that 58.3 percent of household members are married, followed by those who are not in any union (36.2 percent), widow/widowers (4.4 percent), separated (0.7 percent) and divorced (0.4 percent).

Level of Literacy and Educational Qualifications of Household Members

Further analysis on educational qualification shows that more individuals attained senior secondary school (SSS) with 20.8 percent followed by those with primary school (19.5 percent) and those with Msc/M.A.M.Adm, Ph.D recorded the lowest with 0.3 percent. Also, it was observed that 28.5 percent of respondents reported not having any form of schooling at the interview.





51.5%

of households aged 5 years and above can read and write in English

56.8%

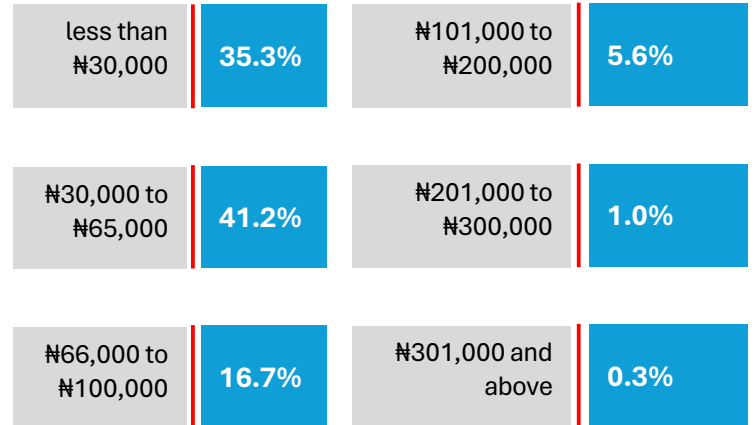
of households aged 5 years and above can read and write in any language



Literacy Level and Average Income

Literacy and educational level of household members were obtained during the survey. The overall result of literacy level across the surveyed states depicts that household members who can read and write in any other language had 56.8 percent compared to those who can read and write in english language (51.5 percent).

Findings on the average monthly income of the households was analysed. The overall results revealed that those households with average income between ₦30,000-₦65,000 had 41.2 percent followed by less than ₦30,000 income earners (35.3 percent), ₦66,000-₦100,000 (16.7 percent), ₦101,000-₦200,000 (5.6 percent), ₦201,000-₦300,000 (1.0 percent) and lowest income is ₦301 and above (0.3 percent).



3.2 Sources of Energy

Fuelwood

Fuelwood Acquisition

The findings from the survey show that 40.7 percent of household purchased fuelwood compared to 39.0 percent who cut or collected while 18.9 percent acquired through other means in the last 30 days.

Sokoto state recorded the highest purchase with 71.2 percent, followed by Kano state with 46.9 percent and the least was from Oyo state with 18.4 percent.

Among those that cut or collected, Bauchi state recorded the highest with 65.4 percent, closely followed by Enugu state with 63.4 percent and the least was Kano state with 11.4 percent. Plateau state recorded the highest fuelwood acquired through other means with 49.1 percent, followed by Sokoto state with 28.6 percent and the least in Oyo state with 3.5 percent.



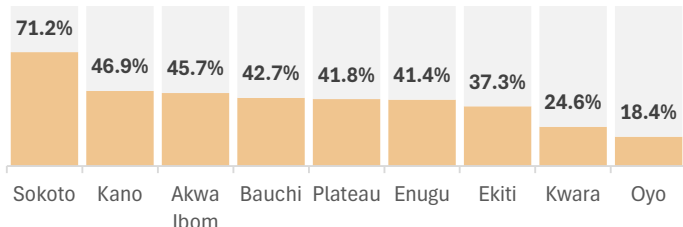
40.7%

of households purchased fuelwood (excluding fuelwood to produce charcoals) in the last 30 days

18.9%

of households acquired fuelwood (through in-kind payment, barter, gift, borrow and other) in the last 30 days

Household that purchased fuelwood in the last 30 days across states



The average fuelwood purchased by households in the past 30 days was 256.3 kg, while those who cut or collected was 474.8 kg.

Disaggregation by state indicates that Plateau state recorded the highest with 346.4 kg, followed by Sokoto state with 329.5 kg and the least was Akwa Ibom state with 121.9 kg. For those who cut and collected fuelwood, Plateau state had the highest with 653.1 kg, followed by Enugu state 615.1 kg and the least was Akwa Ibom 157.8 kg.

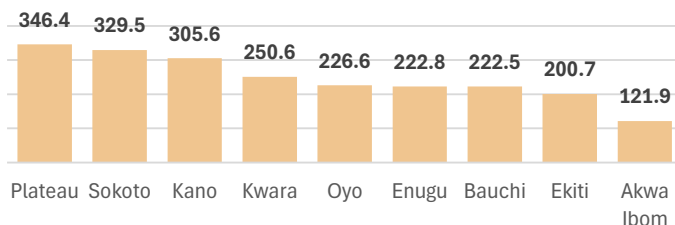
15 days

Average days in the last 30 days households purchased fuelwood

256.3kg

Average total kg of fuelwood purchased by the household in the last 30 days

Average total kg of fuelwood purchased by the household in the last 30 days across states

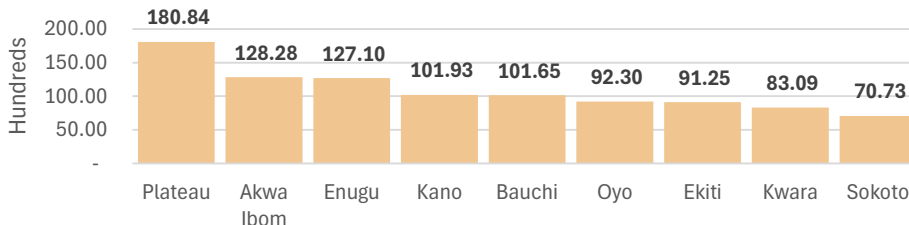


In the past 30 days, the average household expenditure on purchase of fuelwood was ₦10,681.10. On state basis, Plateau state recorded the highest with ₦18,803.7, followed by Akwa Ibom state with ₦12,827.9 and the least was Sokoto state with ₦7,073.1.

₦10,681.10

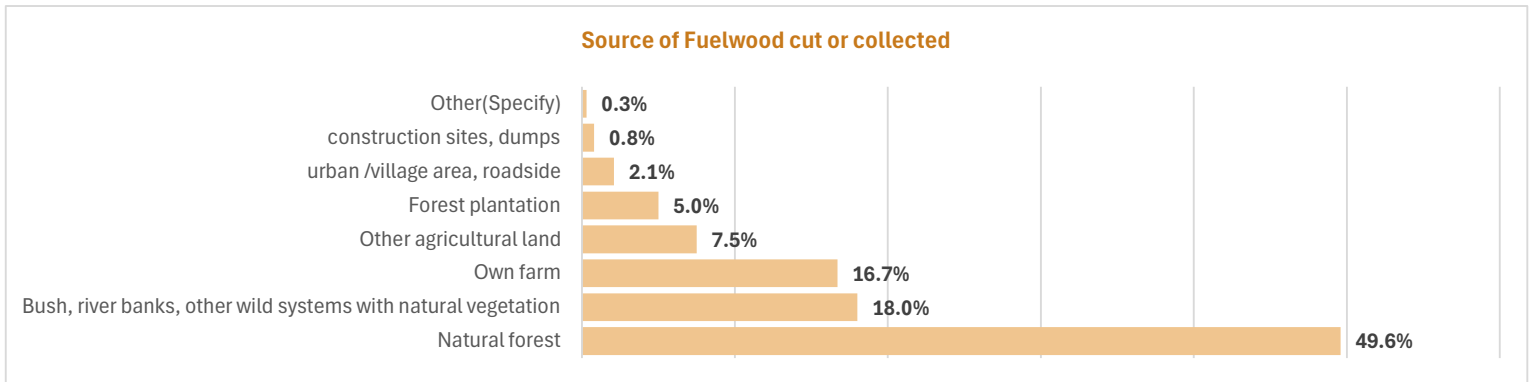
Average usual expenditure on fuelwood in the last 30 days in naira

Average usual expenditure on fuelwood in the last 30 days in naira

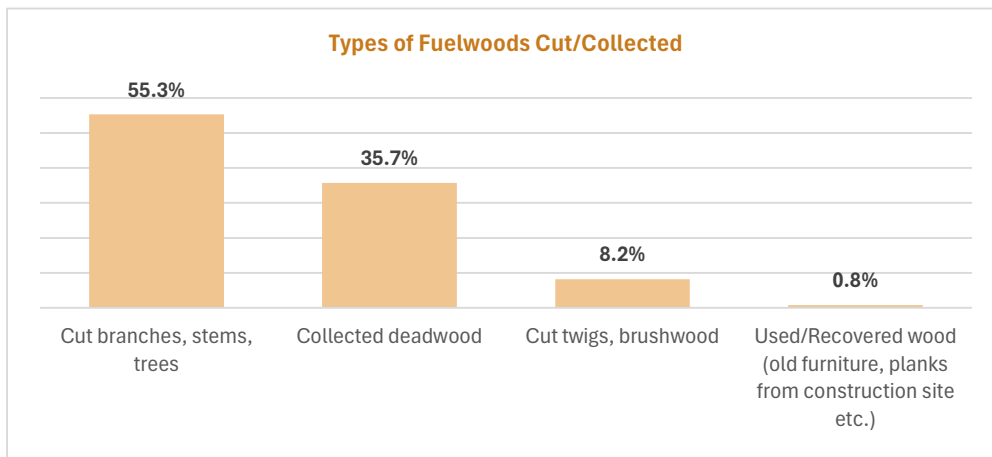


Sources of Fuelwood Cut/Collected

Among several sources of fuelwood collection captured during the survey, Natural Forest recorded 49.6 percent, followed by Bush, riverbanks, other wild systems with natural vegetation with 18.0 percent and Own farm with 16.7 percent.



Types of Fuelwoods Cut/Collected



Overall, cut branches/stems/trees recorded the highest type of fuelwood cut or collected representing 55.3 percent, followed by deadwood with 35.7 percent and used/recovered (old furniture, plank from construction site etc), is the least with 0.8 percent.

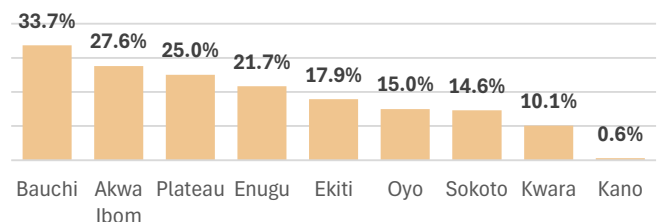
Disaggregation by state shows that Akwa Ibom state had the highest record of cut branches with 89.2 percent, followed by Ekiti state with 71.9 percent and the least was recorded in Kwara state with 22.2 percent.

Consequences of Cutting/Collection of Fuelwood

By negative consequences, we refer to households who experienced the following: missed school/schooling problem, injuries/health, assault/violence, kidnapping and others. An estimated 16.7 percent of households that cut or collected fuelwood experienced negative consequences.

16.7%
of households experienced negative consequences as a result of collecting fuelwood

Proportion of households that faced any negative consequences due to collection of fuelwood

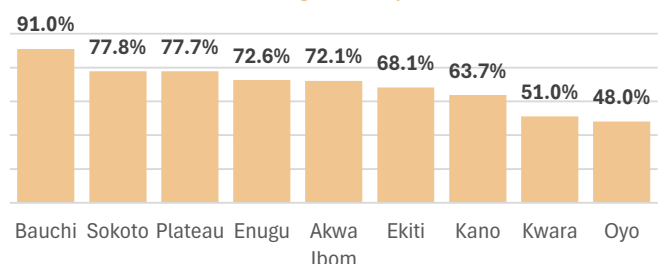


Fuelwood Usage and Sales

The results show that 67.8 percent of households reported using fuelwood either for domestic, agricultural, commercial, cultural or religious purposes. Disaggregation by state indicates that Bauchi state reported the highest with 91.0 percent, followed by Sokoto state with 77.8 percent and the least was Oyo state (48.0 percent).

67.8%
of households have access to fuelwood (any domestic, agricultural, commercial, cultural or religious use)

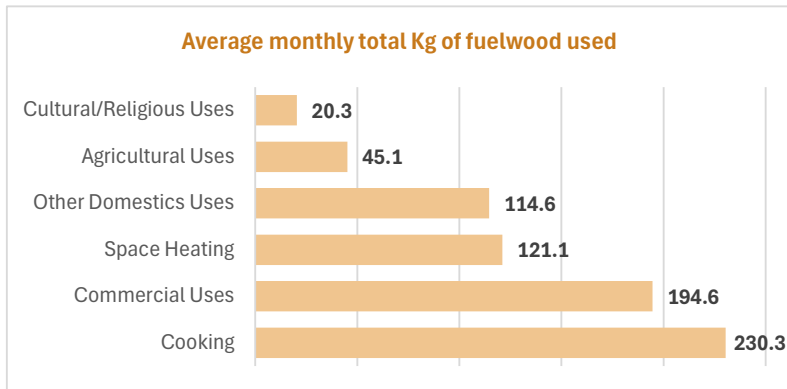
Proportion of households with access to fuelwood (any domestic, agricultural, commercial, cultural or religious use)



Overall, average of 201.6 kg of fuelwood was used by households for different purposes. Further analysis of fuelwood usage shows that 230.3 kg was used for cooking, followed by 194.6 kg for commercial uses, and 20.3 kg was reported as the least for cultural or religious uses.

201.6 kg

Average monthly total Kg of fuelwood used



Out of the total households covered across the nine (9) states, only 1.7 percent engaged in the sales of fuelwood. On state-based analysis, Akwa Ibom state had the highest with 4.2 percent, followed by Plateau state with 3.2 percent and the least was Kwara state with 0.2 percent.

Charcoal

Charcoal Acquisition

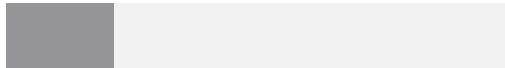
The findings show that 21.6 percent of household purchased charcoal, 0.3 percent reported own production while 0.6 percent acquired charcoal through other means in the past 30 days preceding the day of interview.

Across the nine states, Kwara state recorded the highest purchase with 52.0 percent, followed by Oyo state with 38.2 percent and the least was from Akwa Ibom state with 1.4 percent.

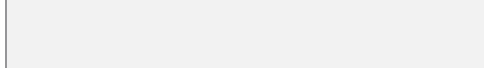
Kwara state recorded the highest with 0.9 percent among those that produced charcoal, closely followed by Ekiti state with 0.7 percent and the lowest was Bauchi and Kano states with 0.1 percent each.



21.6% of households purchased charcoal in the last 30 days



0.6% of households acquired charcoal (through in-kind payment, barter, gift, borrow and other) in the last 30 days



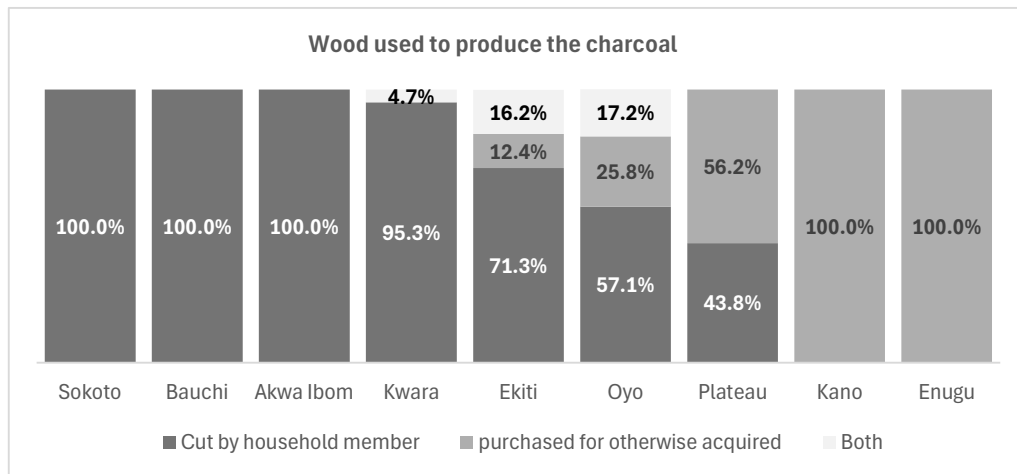
0.3% of households produced charcoal



Methods of acquisition of wood used in charcoal production

The distribution of households who cut wood for charcoal production stood at 64.7 percent, purchase was 27.2 percent, and both cut and purchase recorded 8.1 percent.

On state basis, Sokoto, Bauchi and Akwa Ibom states recorded 100 percent each for cutting of woods, while Kano and Enugu states reported 100 percent each for purchase. In addition, only Oyo state (17.2 percent), Ekiti state (16.2 percent) and Kwara state (4.7 percent) reported both cutting and purchase of wood.



64.7% of households cut the wood used in charcoal production

27.2% of households purchased the wood they used in charcoal production

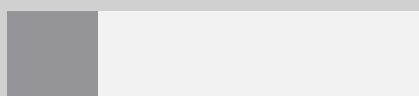
Charcoal Usage and Sales

The survey findings show that 22.0 percent of households reported using 117.0 kg of charcoal for either domestic, agricultural, commercial, cultural or religious purposes across the nine (9) states surveyed.

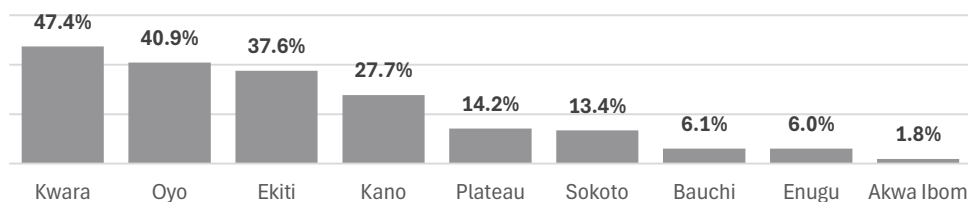
State level analysis shows that Kwara state was 47.4 percent, followed by Oyo state with 40.9 percent and the lowest was Akwa Ibom state with 1.8 percent. In addition, further analysis by quantity reveals that Sokoto state reported the highest with 315.4 kg, followed by Akwa Ibom state with 146.7 kg while the least was reported by Bauchi state (56.0 kg).

22.0%

of households used charcoal (any domestic, agricultural, commercial, cultural or religious use)



Proportion of households that used charcoal (any domestic, agricultural, commercial, cultural or religious use)

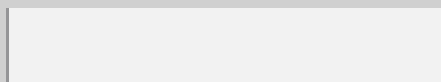


The results show that less than 1.0 percent of the households reported sales of charcoal in the 30 days prior to the day of interview.

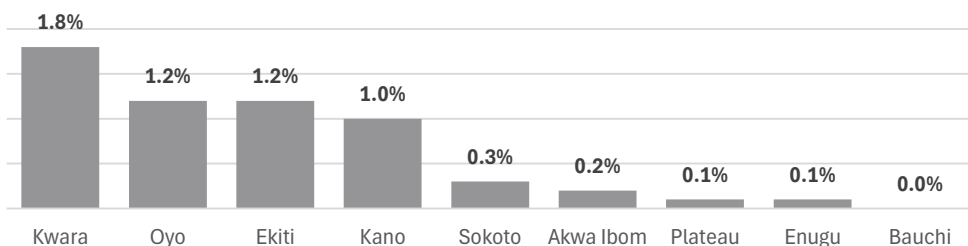
Further analysis across the state reveals that Kwara state had the highest with 1.8 percent, while Plateau and Enugu states reported the lowest with 0.1 percent each.

0.7%

of households sold charcoal in the last 30 days



Proportion of households that sold charcoal across states



Agricultural Residues and Garbage/Plastics

Households that Acquired Agricultural Residues and Garbage/Plastics

Overall, 11.3 percent of household acquired agricultural residues and garbage/plastics during the reference period.

State based analysis shows that Bauchi state recorded the highest with 28.0 percent, followed by Kano state with 22.9 percent and Kwara, Ekiti and Akwa Ibom states reported the lowest with 0.3 percent each.

11.3%

of households acquired crop residues/ grass/straw/ shrubs/animal

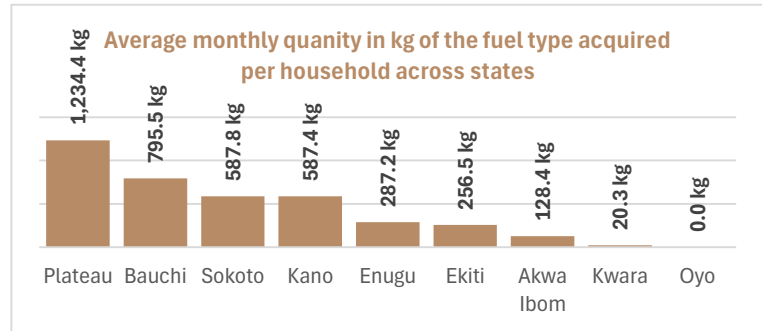


Overall, 702 kg of agricultural residues and garbage/plastics was acquired during the reference period.

Further analysis by state reveals that Plateau state acquired 1,234 kg of agricultural residues and garbage/plastics, followed by Bauchi state with 796 kg, and Kwara state recorded the lowest with 20 kg.

701.6 kg

Average monthly quantity in kg of the fuel type acquired per household



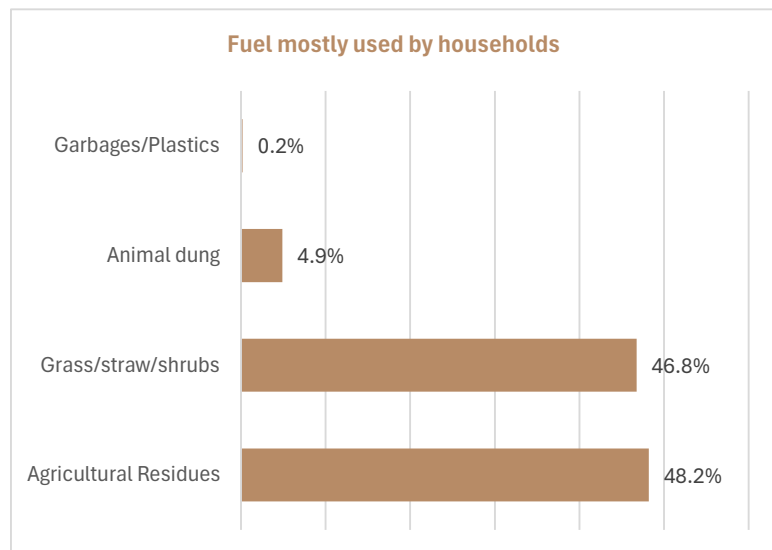
Households that Used Agricultural Residues and Garbage/Plastics

Agricultural residues refer to crop residues/grass/straw/shrubs/ animal dung as captured prior to the survey day. Overall, 10.2 percent of households used agricultural residues and garbage/plastics prior survey day. Out of the various categories of fuel, crop residues were mostly used with 48.2 percent, followed by grass/straw/ shrubs with 46.8 percent, animal dung (4.9 percent), garbage/plastics (0.2 percent).

Disaggregation by state reveals that Bauchi state reported 22.7 percent, closely followed by Kano state with 22.5 percent and Akwa Ibom and Kwara states had the lowest with 0.1 percent each.

10.2%

of households used crop residues/ grass/straw/ shrubs/animal dugs/plastics in the last 30 days

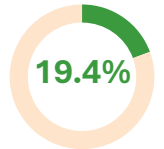
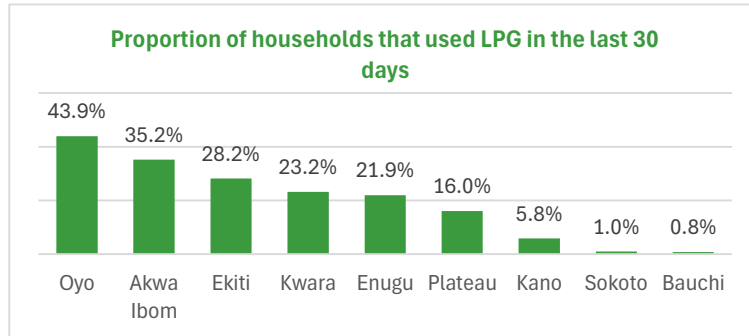


Liquefied Petroleum Gas



LPG Usage

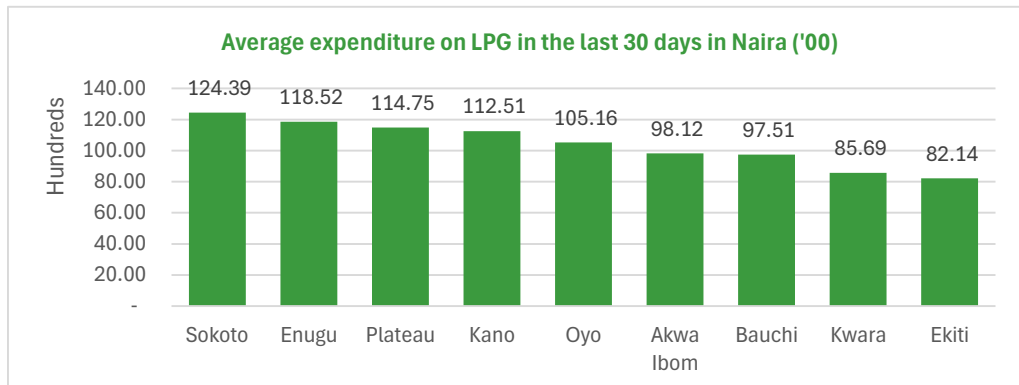
19.4 percent of households reported using LPG during the reference period. Disaggregation by state shows that households in Oyo state reported the highest usage with 43.9 percent, followed by Akwa Ibom with 35.2 percent and Bauchi reported the lowest with 0.8 percent.



of households used LPG in the last 30 days

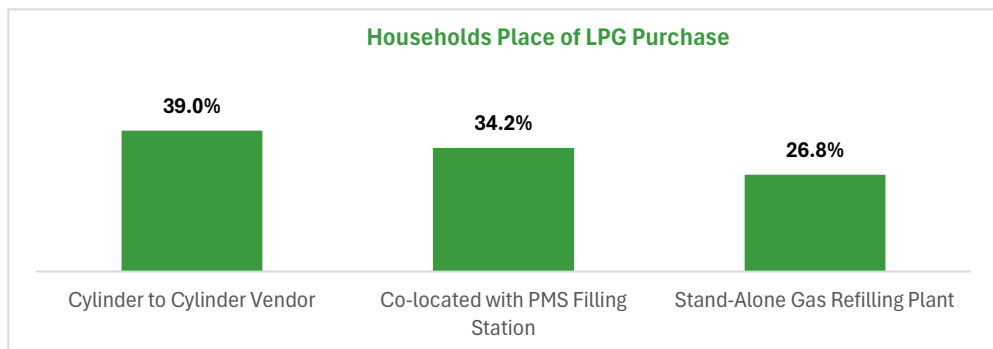
Households' monthly expenditure on LPG in the last 30 days

The average monthly expenditure on LPG across the nine (9) states in the past 30 days prior to the survey day was ₦10,239.7. Analysis across the state indicates that Sokoto state spent the highest amount with ₦12,439.3, followed by Enugu state (₦11,852.2) while Ekiti state spent the lowest amount (₦8,213.5).



Place of LPG Purchase

During the survey, three points of purchase were captured, namely, co-located with PMS filling station, stand alone gas refilling plant and cylinder to cylinder vendor. Overall, cylinder to cylinder vendor recorded the highest with 39.0 percent, followed by co-located with PMS filling station with 34.2 percent and stand-alone gas refilling plant with 26.8 percent.



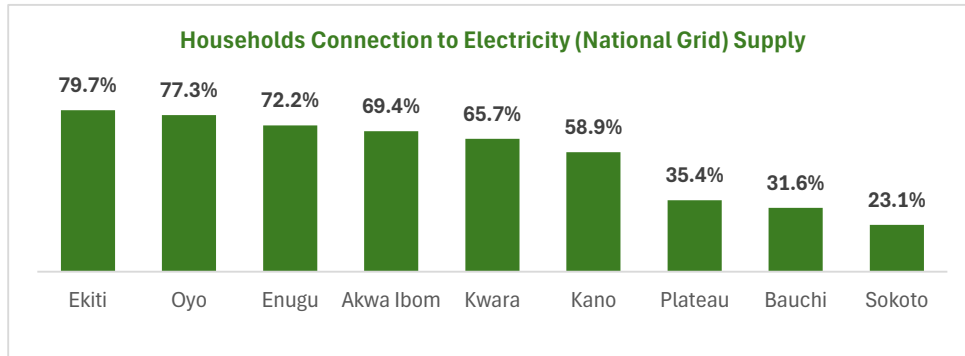
Electricity (National Grid)

Households connected to Electricity National Grid

Overall, 58.2 percent of households from the surveyed states are connected to electricity national grid. 79.7 percent in Ekiti state, and 77.3 percent in Oyo State. About 1 out of every 5 households in Sokoto are connected to the national grid. Households in the southern part of the country are more likely to be connected to the national grid than the northern households.



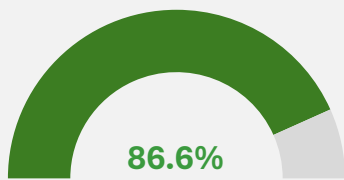
58.2%
of households are
connected to Electricity
(National Grid) supply



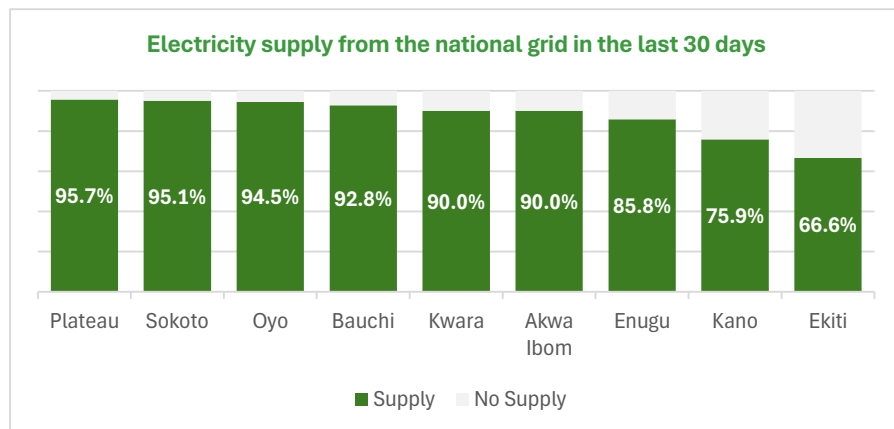
Households with Electricity Supply from the National Grid

Among households connected to the national grid across the nine (9) states covered in this report, 86.6 percent had electricity supply at one point or the other in the last 30 days on an average of 6.6¹ hours per day.

Disaggregation by state shows that Plateau state had the highest electricity supply with 95.7 percent, closely followed by Sokoto state with 95.1 percent, and Ekiti state had the lowest with 66.6 percent.



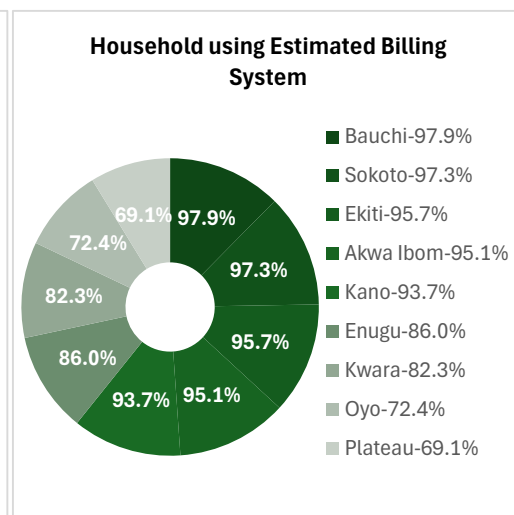
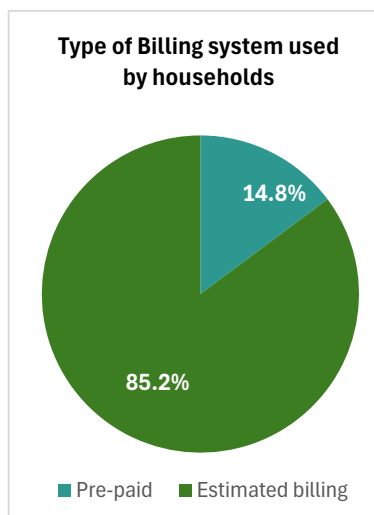
86.6%
Electricity supply from the
national grid in the last 30
days



Households by Electricity Billing System

Overall, 14.8 percent of households reported using pre-paid billing system as against 85.2 percent of those who used estimated billing system during the reference period.

Further analysis by state on estimated billing system reveals that Bauchi state recorded the highest with 97.9 percent, followed by Sokoto state with 97.3 percent and Plateau state had the lowest with 69.1 percent. On the other hand, Plateau state had the highest for pre-paid billing system with 30.9 percent, Oyo state with 27.6 percent, and Bauchi state was the lowest with 2.1 percent.



¹ NBS: General Household Survey Panel(Wave 4-2018/2019)

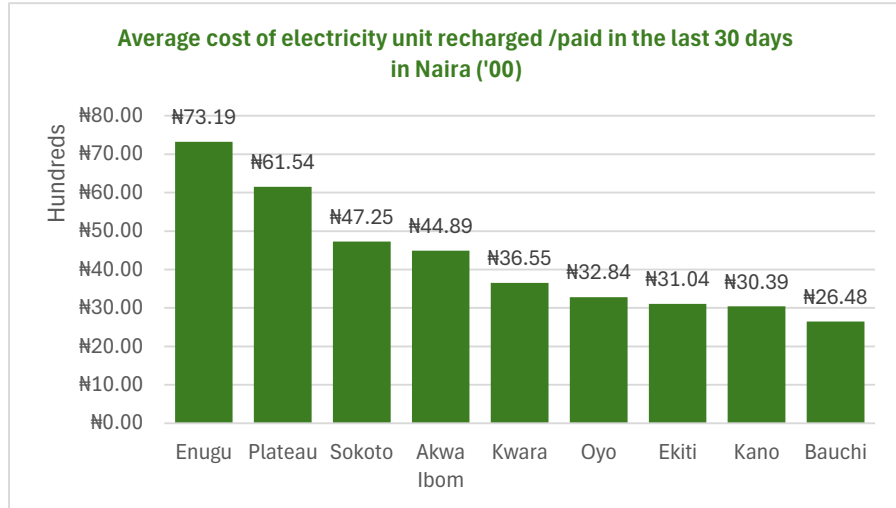
Household average monthly expenditure on electricity

During the reference period of the survey, the average monthly expenditure of households on electricity was estimated at ₦4,155.8.

Disaggregation by state reveals that Enugu state spent the highest on electricity (₦7,319.4), followed by Plateau state (₦6,153.6) and Bauchi state recorded the lowest (₦2,647.7).

₦4,155.79

Average cost of electricity unit recharged /paid in the last 30 days



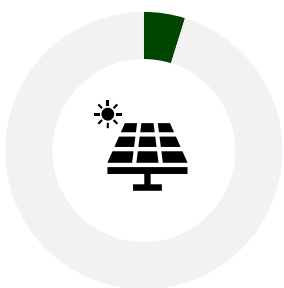
Electricity (Solar Home System/Solar Mini-Grid)

Access To Electricity (Solar Home System/Solar Mini-Grid) & Supply

The findings show that 4.8 percent of households across the surveyed states had access to solar electricity at home. Among those that had access to solar systems in their homes, 90.9 percent of households had solar home systems and 9.1 percent were connected to solar mini-grid with average unit of installed capacity of 33.7 KVA (Kilo Volt Amp) and 66.3 kW (Kilowatts). However, it was observed that overall accessibility to solar electricity supply in the last 30 days prior to the survey was 97.7 percent on the average of 9 hours per day.

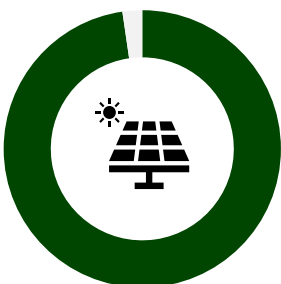
Although, 16.5 percent of households with solar electricity supply reported that they are billed on the average amount of ₦7,037.

Households with access to solar electricity



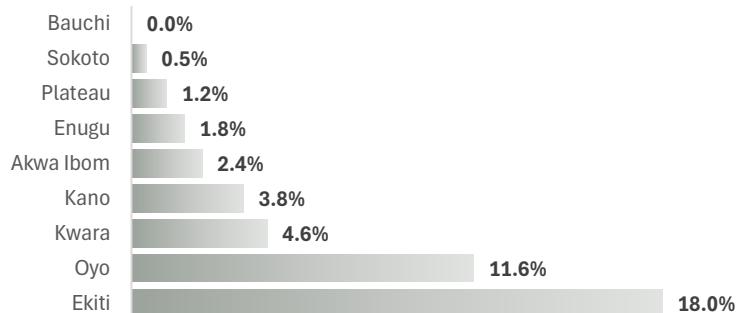
of households have access to solar electricity

Households accessibility to solar electricity supply in the last 30 days



of households accessed solar electricity supply in the last 30 days on the average of 9 hours per day

Households with access to solar electricity by states



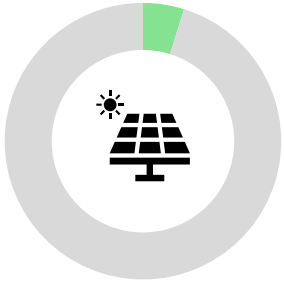
₦7,037

Average amount households pay for the electricity

Electricity (Captive – Diesel/Petrol Generator) Acquisition

The overall result shows that in the last 30 days across the surveyed states, 4.8 percent of households purchased average of 7.38 litre of diesel or petrol on average amount of 763 per litre from either PMS Filling station (86.7 percent) or Petty vendors(13.3 percent). Although, the purchased and usage of diesel or petrol was done within 9 days .

Household acquisition of diesel/petrol in the last 30 days



4.8%
of household purchased diesel/petrol in the last 30 days

7.38 litres

Average total quantity of diesel/petrol purchased each time in litre by households

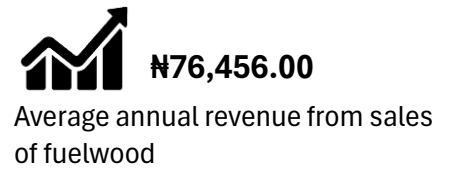
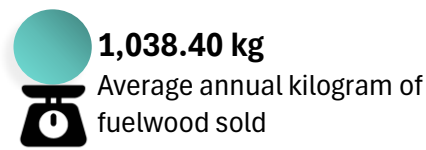
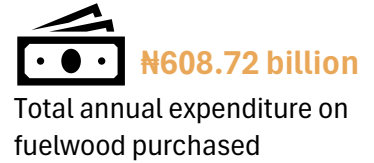
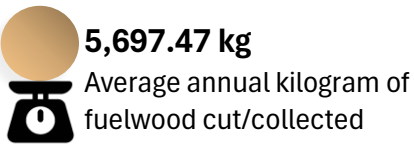
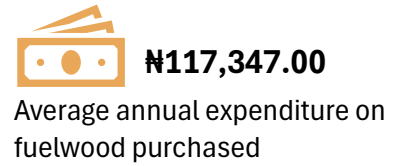
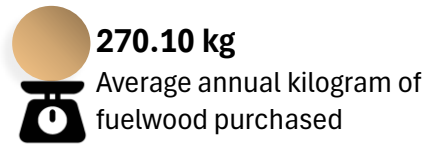
Places where households purchase diesel or petrol



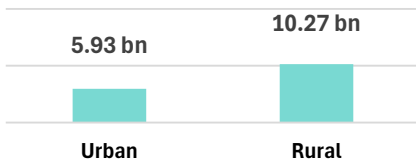
■ PMS Filling Station (86.7%)
■ Petty Vendors (13.3%)

3.3 Expenditure and Quantity of Energy Consumed by Households

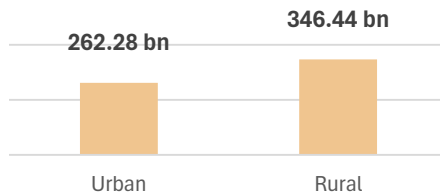
Fuelwood



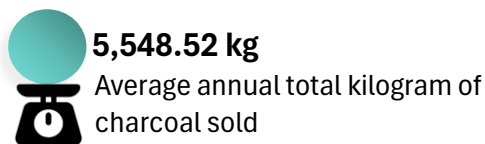
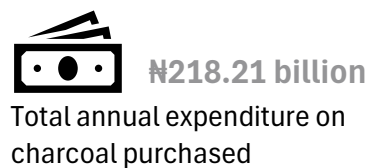
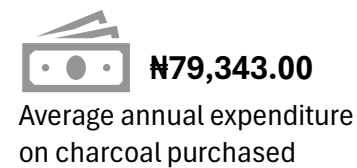
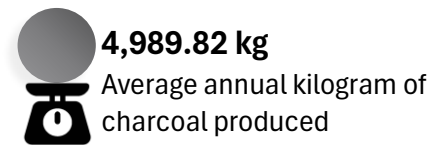
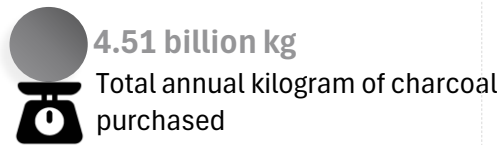
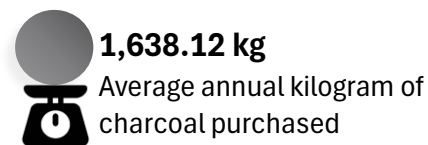
Total annual revenue from sales of fuelwood (naira)



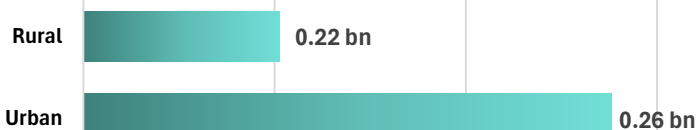
Annual expenditure on fuelwood purchased (naira)



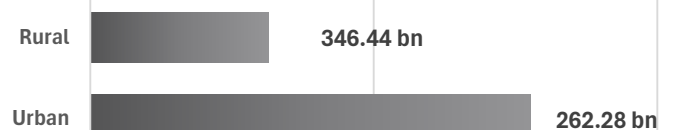
Charcoal



Annual total kilogram of charcoal sold



Annual expenditure on charcoal purchased (naira)



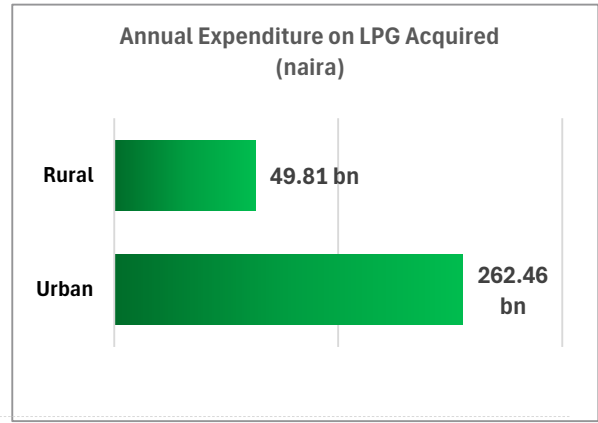
LPG

96.29 kg
Average annual kilogram of LPG acquired

0.24 billion kg
Total annual kilogram of LPG acquired

₦122,876.99
Average annual expenditure on LPG acquired

₦312.27 billion
Total annual expenditure on LPG acquired



Agricultural Residues and Garbage/Plastics

2,931.96 kg
Average annual kilogram of wood chips /sawdust acquired

0.07 billion kg
Total annual kilogram of wood chips /sawdust acquired

₦56,531.00
Average annual expenditure on wood chips /sawdust acquired

8,419.36 kg
Average annual kilogram of residues /grass acquired

12.08 billion kg
Total annual kilogram of residues /grass acquired

₦1.39 billion
Total annual expenditure on wood chips /sawdust acquired

₦38,611.84
Average annual expenditure on crop residues/grass

₦55.39 billion
Total annual expenditure on crop residues/grass



Electricity



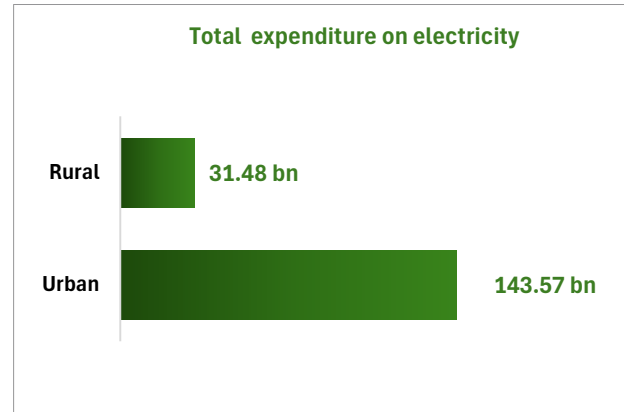
₦49,869.45

Average annual expenditure on electricity



₦175.05 billion

Total annual expenditure on electricity



₦84,445.00

Average annual expenditure on electricity for **households with solar systems**



₦8.35 billion

Total annual expenditure on electricity for **households with solar system**

Petrol/Diesel



₦537,022.00

Average annual expenditure on petrol/diesel



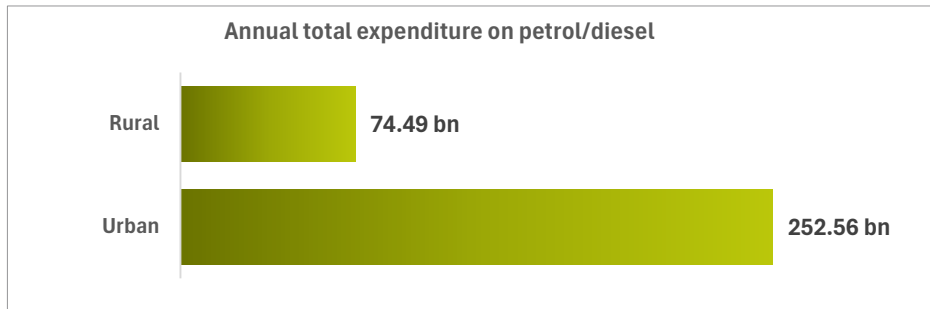
₦327.05 billion

Total annual expenditure on petrol/diesel



733.98 litres

Average annual total quantity of litres of petrol/diesel



0.45 billion litres

Total annual quantity of litres of petrol/diesel

4

Recommendations

Recommendations and Conclusions

Based on the findings from the survey, the following are recommended:

- ❑ Traditional biomass (fuelwood, agricultural residues and dung) remains widely used for cooking and heating in an unsustainable and unsafe manner. Re-planting of trees should be promoted for sustainable production.
- ❑ The government should support the development and distribution of efficient cooking technologies such as improved stoves to reduce fuel consumption and emissions in place of the inefficient three-stone technology commonly used.
- ❑ The government should provide incentives and training programmes for farmers, business people and communities to be aware of the consequences of deforestation and the benefits of reforestation.
- ❑ Penetration of modern biomass is low, so there is a need for more sensitisation across the board about its merits as a cleaner energy.
- ❑ Gas has been identified as a transition fuel in Nigeria. The establishment of more LPG stations is required, particularly in rural areas to increase accessibility. Standardisation of the “roadside/neighbourhood” LPG (cylinder-to-cylinder) vendors is crucial to regulate the cost of the product. Promotion of local production of gas cylinders and other accessories with added value to lower the end-user’s cost and create jobs is desirable.
- ❑ The government should develop and implement incentive schemes to support low-income households in the transition to LPG.
- ❑ The government should optimise electricity generation by decentralising the national grid through mini-grids driven by renewable energy sources to create more access to electricity.

The survey findings show that energies such as kerosine, biogas, ethanol and coal are not commonly used by households, hence, they were not reported. To cover these energy sources, further research is required with a larger sample size. Moreover, there is a need for a National survey that will produce national and sub-national estimates. This will provide comprehensive insight to policymakers, energy planners, and relevant stakeholders about residential energy demand in Nigeria.



Appendices

Table 1: Demographic Characteristics of Household Members

Percentage Distribution of households members by Sex and Age group

	Sex of Members			Age Group of Household members									Estimated number of household members
	Male	Female	Total	<5	4 to 14	15 to 24	25 to 34	35 to 44	45 to 54	55 to 64	65+	Total	
Overall	51.8	48.2	100	9.5	23.8	18.8	14.8	12.4	10.0	5.6	5.1	100	63,742,899
Sector													
Urban	50.7	49.3	100	7.6	20.8	18.4	14.1	13.2	11.9	7.1	6.9	100	27,468,282
Rural	52.7	47.3	100	11.0	26.0	19.0	15.3	11.7	8.6	4.5	3.8	100	36,274,617
State													
Sokoto	53.1	46.9	100	13.1	28.8	18.4	13.2	9.8	8.8	4.6	3.3	100	5,941,587
Bauchi	52.8	47.2	100	13.7	29.4	20.4	15.3	10.1	6.2	2.7	2.2	100	7,944,393
Kano	53.3	46.7	100	11.7	26.6	20.5	16.3	11.0	7.1	3.5	3.2	100	15,805,487
Plateau	53.0	47.0	100	11.1	25.3	21.6	15.2	12.0	8.1	3.9	2.8	100	4,911,061
Kwara	50.9	49.1	100	7.0	23.8	17.3	13.6	13.5	13.2	6.2	5.3	100	3,795,731
Oyo	51.0	49.0	100	7.5	22.5	17.1	13.1	14.3	13.1	6.9	5.4	100	9,528,622
Ekiti	50.2	49.8	100	5.1	16.5	17.4	12.7	13.6	13.0	8.9	12.8	100	3,909,836
Enugu	50.2	49.8	100	2.6	13.9	16.6	14.8	14.8	14.7	11.7	10.8	100	5,243,894
Akwa Ibom	48.9	51.1	100	7.4	18.8	16.5	15.9	14.6	12.2	7.4	7.2	100	6,662,287

Table 2: Demographic Characteristics of Household Members

Percentage distribution of household members aged 12 and above by marital status and type of religion.

	Marital status							Estimated number of household members (12 years above)	Religion					Estimated number of household members	
	Never married	Married	Divorced	Separated	Widow/Widower	Others	Total		Christianity	Islam	Traditional	Others Specify	Non		Total
Overall	36.2	58.3	0.4	0.7	4.4	0.1	100	46,960,401	38.3	60.5	1.1	0.0	0.1	100	63,742,899
Sector															
Urban	39.3	53.2	0.4	1.0	6.1	0.1	100	21,557,051	52.4	46.7	0.9	0.0	0.0	100	27,468,282
Rural	33.7	62.6	0.3	0.4	3.0	0.0	100	25,403,350	27.6	71.0	1.2	0.0	0.1	100	36,274,617
State															
Sokoto	34.1	64.4	0.4	0.2	1.0	0.0	100	3,873,849	0.1	99.8	0.0	0.0	0.0	100	5,941,587
Bauchi	35.6	63.3	0.1	0.0	0.9	0.1	100	5,174,637	8.0	91.2	0.7	0.0	0.1	100	7,944,393
Kano	34.6	63.3	0.4	0.2	1.5	0.0	100	10,865,164	0.7	99.2	0.0	0.0	0.0	100	15,805,487
Plateau	43.3	53.7	0.3	0.3	2.4	0.0	100	3,470,984	70.6	22.7	6.4	0.0	0.3	100	4,911,061
Kwara	34.2	61.3	0.4	1.1	3.0	0.0	100	2,893,758	31.6	68.3	0.0	0.0	0.1	100	3,795,731
Oyo	36.9	58.9	0.4	0.3	3.4	0.1	100	7,360,259	39.2	58.8	2.0	0.0	0.0	100	9,528,622
Ekiti	33.4	53.9	0.7	2.1	10.0	0.0	100	3,273,731	88.3	10.4	1.3	0.0	0.0	100	3,909,836
Enugu	38.7	48.8	0.4	2.2	9.8	0.1	100	4,734,833	98.9	0.2	1.0	0.0	0.0	100	5,243,894
Akwa Ibom	37.0	50.5	0.2	0.9	11.2	0.2	100	5,313,186	99.4	0.2	0.4	0.0	0.1	100	6,662,287

Table 3: Demographic Characteristics of Household Members

Percentage distribution of household members aged 5 years and above by literacy level and educational qualifications.

	Households members aged 5 years above who can read and write in English Language	Households members aged 5 years above who can read and write in any Language	Estimated number households members (5 years above)	Educational Qualification of Members										Estimated number of household members (5 years above)	
				None	Below Pry	Primary	JSS	Vocational/ Commercial	SSS	NCE/OND/ Nursing	B.A/B.Sc/B. Ed/HND	M.Sc/M.A/ M.Adm	Doctorate		Total
Overall	51.5	56.8	57,670,477	28.5	11.0	19.5	7.9	2.3	20.8	5.0	4.7	0.3	0.0	100	60,745,926
Sector															
Urban	72.4	66.4	25,391,738	10.8	10.1	20.4	9.7	1.7	29.8	7.9	8.8	0.7	0.1	100	26,428,018
Rural	35.1	49.3	32,278,739	42.1	11.7	18.8	6.5	2.8	13.9	2.7	1.5	0.1	0.0	100	34,317,908
State															
Sokoto	27.0	65.4	5,164,987	63.3	9.0	12.1	4.4	0.2	8.2	1.9	0.8	0.0	0.0	100	5,555,364
Bauchi	14.7	34.8	6,853,520	63.9	7.3	14.8	3.6	0.1	7.1	2.7	0.5	0.0	0.0	100	7,353,532
Kano	36.7	64.7	13,950,839	25.5	13.0	26.5	6.9	7.7	14.6	3.6	1.8	0.3	0.0	100	14,909,203
Plateau	51.9	45.5	4,367,723	34.9	12.1	14.5	11.9	0.4	18.6	4.3	3.1	0.3	0.1	100	4,652,688
Kwara	62.0	59.8	3,528,554	28.6	9.1	15.3	7.9	0.9	22.3	7.4	7.7	0.8	0.1	100	3,678,522
Oyo	63.4	70.7	8,815,113	17.3	17.0	17.5	8.0	1.0	24.8	5.8	8.4	0.3	0.0	100	9,184,619
Ekiti	71.9	76.8	3,711,160	14.0	7.9	19.5	11.1	0.7	29.2	10.6	6.9	0.1	0.1	100	3,824,348
Enugu	86.6	48.1	5,109,150	4.1	3.8	18.4	10.8	0.9	42.7	7.9	10.4	1.0	0.0	100	5,192,566
Akwa Ibom	81.7	38.2	6,169,431	4.2	11.6	25.1	10.8	0.3	33.9	5.8	7.8	0.3	0.2	100	6,395,084

Table 4: Household Building Information
Percentage distribution of households by the type of building structure and the average number of rooms in the dwelling

	Type of household building structure											Estimated number of Households	Average number of rooms are in dwelling including the living room(s)
	Single room (face-me-face-you)	Self-contained (1 room)	Flat/apartment	Bungalow	Detached house	Semi-detached house	Terrace	High-rise	Skyscraper	Shanty house	Total		
Overall	35.0	8.6	28.4	19.9	3.0	1.4	0.1	0.2	0.0	3.3	100	12,734,044	4.0
Sector													
Urban	30.5	9.9	32.0	23.2	2.3	1.1	0.2	0.4	0.1	0.3	100	5,733,469	4.0
Rural	38.6	7.5	25.4	17.2	3.7	1.6	0.1	0.1	0.0	5.8	100	7,000,575	4.0
State													
Sokoto	55.3	11.2	13.2	18.5	1.1	0.6	0.1	0.0	0.0	0.0	100	1,125,961	3.0
Bauchi	74.9	5.4	12.4	0.4	1.2	1.2	0.0	0.0	0.0	4.6	100	1,477,020	4.0
Kano	9.2	11.4	51.9	21.3	4.0	1.4	0.2	0.1	0.0	0.5	100	2,781,355	4.0
Plateau	27.8	3.9	24.7	7.3	6.3	6.1	0.7	0.0	0.0	23.3	100	943,677	4.0
Kwara	34.8	7.2	19.1	19.2	10.4	2.2	0.1	1.3	0.0	5.7	100	771,984	4.0
Oyo	51.2	8.3	28.8	9.0	1.3	0.0	0.0	0.0	0.0	1.4	100	2,154,144	4.0
Ekiti	56.3	5.5	18.5	15.2	0.4	0.4	0.1	0.0	0.0	3.6	100	823,526	4.0
Enugu	11.8	9.8	23.2	51.8	0.8	0.2	0.0	0.8	0.3	1.3	100	1,176,319	4.0
Akwa Ibom	15.8	9.7	27.8	39.4	4.5	2.1	0.0	0.7	0.0	0.1	100	1,480,057	4.0

Table 5a: Household Building Information
Percentage distribution of households by the type of building materials used and area layout

	Type of material of building								Layout of the area							
	Sandcrete (concrete) block/cast concrete wall	Mud	Wood	Caravan/B amboo	Metal	Glass	Other specify	Total	Estimated number of Households	Planned (urban)	Unplanned (urban)	Planned (peri-urban)	Unplanned (peri-urban)	Rural setting	Total	Estimated number of Households
Overall	53.0	44.8	0.4	1.4	0.0	0.0	0.5	100	12,734,044	13.7	12.4	5.4	13.5	55.0	100	12,734,044
Sector																
Urban	83.5	16.2	0.3	0.0	0.0	0.0	0.1	100	5,733,469	30.4	27.6	12.0	29.9	0.0	100	5,733,469
Rural	28.0	68.2	0.4	2.6	0.0	0.0	0.8	100	7,000,575	0.0	0.0	0.0	0.0	100.0	100	7,000,575
State																
Sokoto	25.5	73.9	0.3	0.0	0.0	0.0	0.3	100	1,125,961	7.9	2.0	8.7	2.0	79.5	100	1,125,961
Bauchi	10.3	78.6	0.9	8.3	0.0	0.1	1.8	100	1,477,020	0.6	1.4	7.3	7.7	83.0	100	1,477,020
Kano	40.7	58.4	0.0	1.0	0.0	0.0	0.0	100	2,781,355	14.2	14.1	1.3	4.5	65.9	100	2,781,355
Plateau	23.7	72.7	1.0	0.0	0.0	0.0	2.6	100	943,677	6.0	1.7	1.3	3.2	87.8	100	943,677
Kwara	75.6	23.0	0.0	1.3	0.0	0.0	0.2	100	771,984	12.6	8.6	4.8	6.4	67.5	100	771,984
Oyo	70.6	28.9	0.1	0.2	0.1	0.0	0.1	100	2,154,144	19.3	14.4	8.2	26.8	31.3	100	2,154,144
Ekiti	66.7	32.2	0.4	0.7	0.0	0.0	0.0	100	823,526	37.3	20.8	3.4	2.6	36.0	100	823,526
Enugu	87.2	12.5	0.2	0.1	0.0	0.0	0.0	100	1,176,319	21.0	28.1	6.7	42.8	1.3	100	1,176,319
Akwa Ibom	86.0	12.5	0.7	0.8	0.0	0.0	0.0	100	1,480,057	8.6	17.1	7.8	18.5	48.0	100	1,480,057

Table 5b: Household Building Information

Percentage distribution of households by population density

	Population density of the area				Estimated number of Households	Main Responsibility of Respondents					Estimated number of Households	
	Low density	Medium density	High density	Total		Main cook	Purchase (finance for cooking energy)	Collection of firewood	Production of charcoal	None		Total
Overall	47.6	40.2	12.3	100	12,734,044	25.1	65.2	6.4	0.1	3.1	100	12,734,044
Sector												
Urban	23.7	53.4	23.0	100	5,733,469	33.5	58.3	5.3	0.1	2.8	100	5,733,469
Rural	67.1	29.3	3.5	100	7,000,575	18.2	70.9	7.4	0.1	3.5	100	7,000,575
State												
Sokoto	58.0	31.0	11.0	100	1,125,961	21.3	77.6	0.2	0.0	0.9	100	1,125,961
Bauchi	60.2	39.6	0.2	100	1,477,020	11.4	56.3	25.4	0.0	6.9	100	1,477,020
Kano	39.3	42.7	18.0	100	2,781,355	2.2	92.2	0.6	0.0	5.1	100	2,781,355
Plateau	71.9	21.3	6.9	100	943,677	26.5	68.6	4.3	0.0	0.7	100	943,677
Kwara	40.5	53.4	6.1	100	771,984	37.6	53.6	7.4	0.0	1.4	100	771,984
Oyo	32.9	51.3	15.8	100	2,154,144	52.1	41.3	3.5	0.2	3.0	100	2,154,144
Ekiti	42.4	55.0	2.5	100	823,526	39.1	59.7	1.1	0.0	0.1	100	823,526
Enugu	54.1	22.0	23.9	100	1,176,319	38.4	35.9	20.0	0.6	5.1	100	1,176,319
Akwa Ibom	49.8	37.9	12.3	100	1,480,057	19.9	79.1	0.6	0.0	0.3	100	1,480,057

FUELWOOD ACQUISITION

Percentage distribution of households by the average daily cost and quantity (in kg) of fuelwood acquired.

	Household purchased fuelwood in past 30 days			Estimated number of households	Average days in last 30 days households purchased fuelwood	Unit of fuelwoods purchased by the household?				Estimated number of households that purchased fuelwood
	Purchased	No purchased	Total			Pieces	Bundles	Logs	Total	
Overall	40.7	59.3	100	12,734,044	15	16.0	78.3	5.7	100	5,190,981
Sector										
Urban	36.8	63.2	100	5,733,469	14	19.3	75.7	5.0	100	2,112,993
Rural	43.9	56.1	100	7,000,575	17	13.6	80.2	6.2	100	3,077,987
State										
Sokoto	71.2	28.8	100	1,125,961	23	1.6	96.8	1.6	100	801,695
Bauchi	42.7	57.3	100	1,477,020	17	22.7	69.7	7.6	100	630,642
Kano	46.9	53.1	100	2,781,355	18	13.0	82.6	4.4	100	1,305,631
Plateau	41.8	58.2	100	943,677	13	26.2	60.2	13.5	100	394,105
Kwara	24.6	75.4	100	771,984	13	29.9	66.6	3.5	100	191,681
Oyo	18.4	81.6	100	2,154,144	14	36.7	59.8	3.5	100	395,602
Ekiti	37.3	62.7	100	823,526	11	5.4	84.8	9.9	100	308,724
Enugu	41.4	58.6	100	1,176,319	9	30.7	61.8	7.5	100	486,925
Akwa Ibom	45.7	54.3	100	1,480,057	10	4.6	89.9	5.6	100	675,976

FUELWOOD ACQUISITION

Percentage distribution of households by the average daily cost and quantity (in kg) of fuelwood acquired.

	Average number units of fuelwoods purchased by the household daily	Average Kg per unit of fuelwood purchased by the household daily	Average total Kg of fuelwood purchased by the household daily	Average total Kg of fuelwood purchased by the household in the last 30 days	Average usual expenditure on fuelwood in the last 30 days in naira	Household cut or collect fuelwood in the last 30 days			Estimated number of households
						Cut or collection	Not cut or collect	Total	
Overall	4.63	5.38	22.51	256.31	₦10,681.10	39.0	61.0	100	12,734,044
Sector									
Urban	4.62	4.89	21.55	218.39	₦11,141.92	25.7	74.3	100	5,733,469
Rural	4.65	5.72	23.16	282.33	₦10,364.82	49.9	50.1	100	7,000,575
State									
Sokoto	3.22	4.62	15.08	329.53	₦7,073.12	28.5	71.5	100	1,125,961
Bauchi	6.15	4.99	21.6	222.49	₦10,165.36	65.4	34.6	100	1,477,020
Kano	4.4	6.74	27.16	305.55	₦10,193.38	11.4	88.6	100	2,781,355
Plateau	7.65	4.66	30.49	346.44	₦18,083.70	55.5	44.5	100	943,677
Kwara	3.43	5.13	17.92	250.58	₦8,309.19	40.8	59.2	100	771,984
Oyo	4.76	4.56	21.03	226.57	₦9,230.45	32.0	68.0	100	2,154,144
Ekiti	3.36	7.03	21.47	200.68	₦9,125.19	42.4	57.6	100	823,526
Enugu	5.83	5.51	32.13	222.81	₦12,709.80	63.4	36.6	100	1,176,319
Akwa Ibom	3.59	4.18	14.23	121.85	₦12,827.78	49.8	50.2	100	1,480,057

FUELWOOD ACQUISITION

Percentage distribution of households by the average daily cost and quantity (in kg) of fuelwood acquired.

	Average number of days households used in collecting fuelwood and/or cutting in last 30 days	Daily unit of fuelwood typically cut or collected by the household.				Total	Average daily number of fuelwoods cut or collected by households per day	Average Kg unit of fuelwood cut or collected by household members	Average usual Daily kg	Average monthly kg
		Pieces	Bundles	Logs						
Overall	13	25.7	69.0	5.3	100	18.37	4.64	43.74	474.79	
Sector										
Urban	12	37.5	57.9	4.5	100	13.33	4.44	36.38	456.8	
Rural	14	20.7	73.6	5.6	100	20.49	4.73	46.84	482.37	
State										
Sokoto	16	7.6	89.3	3.0	100	9.43	5.16	42.47	525.49	
Bauchi	18	13.2	83.1	3.7	100	23.9	3.87	41.74	528.09	
Kano	14	10.9	72.4	16.7	100	12.84	5.95	57.78	513.88	
Plateau	9	38.7	51.4	9.9	100	57.87	3.21	98.53	653.05	
Kwara	14	30.3	67.8	1.8	100	6.49	5.53	26.22	277.4	
Oyo	14	43.9	53.7	2.4	100	11.42	5.64	32.96	440.14	
Ekiti	12	7.5	81.7	10.7	100	8.87	6.41	44.38	592.97	
Enugu	14	53.6	43.6	2.7	100	15.55	3.81	40.18	615.12	
Akwa Ibom	7	8.4	87.0	4.6	100	8.27	4.58	22.79	157.83	

FUELWOOD ACQUISITION

Percentage distribution of households by the average daily cost and quantity (in kg) of fuelwood acquired.

	Sources of fuelwood cutting or collection								Total
	Natural forest	Forest plantation	Bush, river banks, other wild systems with natural	Own farm	Other agricultural land	urban /village area, roadside	construction sites, dumps	Other (Specify)	
Overall	49.6	5.0	18.0	16.7	7.5	2.1	0.8	0.3	100
Sector									
Urban	36.3	7.5	21.6	15.9	11.5	4.0	2.4	0.7	100
Rural	55.2	4.0	16.5	17.0	5.7	1.3	0.2	0.2	100
State									
Sokoto	76.1	5.5	12.8	1.6	0.0	1.5	0.0	2.5	100
Bauchi	66.1	6.1	11.7	10.3	0.2	5.1	0.0	0.5	100
Kano	65.4	2.8	2.3	27.5	0.0	2.0	0.0	0.0	100
Plateau	69.1	0.6	19.7	10.1	0.4	0.2	0.0	0.0	100
Kwara	66.4	0.7	25.2	5.1	0.0	1.6	0.6	0.2	100
Oyo	33.0	0.0	24.9	24.9	12.3	0.8	3.9	0.0	100
Ekiti	33.5	1.6	10.6	46.5	5.9	0.2	0.8	1.0	100
Enugu	32.3	8.8	28.8	13.1	13.6	3.0	0.4	0.0	100
Akwa Ibom	29.1	12.1	17.1	18.2	21.5	1.1	0.9	0.0	100

FUELWOOD ACQUISITION

Percentage distribution of households by the average daily cost and quantity (in kg) of fuelwood acquired.

	Type of fuelwood mainly cut or collected					Main mode of transportation for the collection of fuelwoods						Estimated number of households that cut or collected fuelwood in last 30 days	Average time it takes to go from house to the edge of the main collection	Average minutes it takes to collect fuelwood
	Collected deadwood	Cut twigs, brushwood	Cut trees	Used/Recovered wood (old furniture, planks from construction site etc.)	Total	Foot	Animal	Bicycle/Motorcycle	Vehicle	Boat/canoe	Total			
Overall	35.7	8.2	55.3	0.8	100	82.0	1.6	13.0	2.4	0.9	100	4,965,274	62	53
Sector														
Urban	41.8	6.7	49.3	2.2	100	78.7	0.4	15.8	3.9	1.3	100	1,471,916	51	53
Rural	33.1	8.9	57.8	0.2	100	83.5	2.1	11.9	1.9	0.7	100	3,493,358	66	53
State														
Sokoto	19.1	10.8	70.1	0.0	100	67.8	8.7	22.2	1.2	0.0	100	321,429	95	59
Bauchi	36.7	8.9	54.4	0.0	100	92.0	4.5	3.2	0.3	0.0	100	966,687	76	39
Kano	39.1	4.0	57.0	0.0	100	80.8	2.0	10.5	4.6	2.1	100	317,619	38	38
Plateau	56.1	3.0	40.9	0.0	100	88.5	0.0	8.2	3.3	0.0	100	523,436	97	101
Kwara	57.3	20.2	22.2	0.2	100	71.3	0.0	26.1	2.6	0.0	100	315,145	45	42
Oyo	24.3	18.0	54.9	2.8	100	81.4	0.0	14.9	3.8	0.0	100	689,220	40	34
Ekiti	23.2	3.3	71.9	1.5	100	68.4	0.3	28.6	2.8	0.0	100	349,039	63	44
Enugu	64.2	2.7	32.5	0.6	100	86.4	0.0	9.4	4.1	0.0	100	746,239	43	57
Akwa Ibom	4.3	5.3	89.2	1.2	100	78.2	0.1	15.6	1.1	4.9	100	736,461	60	62

FUELWOOD ACQUISITION THROUGH IN-KIND, BARTER, BORROW AND GIFT

Percentage distribution of households by the average daily acquisition of fuelwood in units and kilograms through in-kind transactions, barter, borrowing, and gifts.

	Average number of days household acquired fuelwood in the last 30 days	Average daily units of fuelwood usually acquired	Average daily Kg per unit of fuelwood usually acquired	Average daily total Kg of fuelwood acquired	Average Monthly total of Kg acquired
Overall	5.0	4.1	3.0	9.3	43.2
Sector					
Urban	6.0	3.3	2.9	8.0	45.9
Rural	3.0	5.1	3.0	11.0	39.9
State					
Sokoto	7.0	2.2	3.8	8.6	88.8
Bauchi	4.0	6.3	2.2	10.6	40.5
Kano	2.0	8.7	4.0	21.2	52.6
Plateau	4.0	7.9	2.7	16.5	60.2
Kwara	4.0	1.7	1.4	2.0	8.6
Oyo	13.0	1.9	2.8	5.5	82.3
Ekiti	1.0	3.3	2.6	6.4	7.4
Enugu	3.0	6.0	2.3	10.0	28.4
Akwa Ibom	3.0	2.2	3.2	6.5	16.7

FUELWOOD USED

Percentage distribution of households by the average daily and monthly usage of fuelwood in units and kilograms

		Average number of days in the last 30 days fuelwood was used by household	Average daily number of unit of Fuelwood used	Average daily Kg per unit of fuelwood used	Average daily total Kg of fuelwood used	Average monthly total Kg of fuelwood used	Average times household cook with fuelwood per day
Overall	Overall	23	4.4	2.8	8.6	201.6	2
	Cooking	26	4.5	2.8	8.7	230.3	3
	Space Heating	15	5.0	1.6	7.4	121.1	.
	Other Domestic Uses	17	4.3	2.2	6.4	114.6	1
	Agricultural Uses	5	3.7	3.8	10.2	45.1	.
	Commercial Uses	20	3.6	3.9	10.0	194.6	1
	Cultural/Religious Uses	2	3.5	3.7	10.8	20.3	.
	Total	23	4.1	2.6	8.0	184.2	2
Urban	Cooking	25	4.3	2.6	8.1	207.6	2
	Space Heating	8	3.5	1.8	5.8	49.0	.
	Other Domestic Uses	16	3.6	2.2	5.7	87.5	2
	Agricultural Uses	4	4.0	3.5	10.0	43.4	.
	Commercial Uses	22	3.1	3.8	9.1	192.8	1
	Cultural/Religious Uses	2	3.6	3.6	10.7	22.0	.
		Total	24	4.5	3.0	8.9	210.4	2
Rural	Cooking	27	4.6	2.9	9.0	242.3	3
	Space Heating	16	5.4	1.6	7.8	138.8	.
	Other Domestic Uses	17	4.6	2.2	6.8	127.9	1
	Agricultural Uses	5	3.5	3.9	10.3	45.9	.
	Commercial Uses	19	3.9	4.0	10.6	195.8	2
	Cultural/Religious Uses	2	3.5	3.8	10.8	19.8	.
		Total	22	2.9	3.9	10.0	212.5	2
Sokoto	Cooking	25	2.8	4.0	9.8	250.8	2
	Space Heating	15	1.8	1.5	3.1	14.4	.
	Other Domestic Uses	15	2.6	1.8	4.2	67.5	1
	Agricultural Uses	.	.	.	.	.	.
	Commercial Uses	21	2.0	4.2	7.5	180.5	1
	Cultural/Religious Uses	2	3.7	3.6	12.3	27.5	.
		Total	21	4.1	2.9	8.4	166.5	3
Bauchi	Cooking	27	4.0	2.9	7.9	213.1	3
	Space Heating	16	4.8	1.6	7.0	94.1	.
	Other Domestic Uses	21	4.8	2.1	7.8	169.7	1
	Agricultural Uses	14	4.0	1.6	6.5	49.9	.
	Commercial Uses	14	5.6	1.9	7.6	93.5	1
	Cultural/Religious Uses	2	3.8	3.4	10.8	16.7	.
		Total	24	3.3	3.3	7.8	195.3	2
Kano	Cooking	27	3.6	3.3	8.4	234.0	3
	Space Heating	2	1.0	2.0	2.0	4.0	.
	Other Domestic Uses	15	2.9	2.3	4.0	51.4	1
	Agricultural Uses	15	1.9	2.5	5.1	81.8	.
	Commercial Uses	27	2.6	4.9	10.5	295.8	1
	Cultural/Religious Uses	2	2.2	5.0	9.6	22.6	.
		Total	26	9.2	2.0	14.1	371.5	2
Plateau	Cooking	27	9.2	2.1	14.3	390.5	3
	Space Heating	21	8.4	1.7	12.1	249.2	.
	Other Domestic Uses	28	9.5	1.5	12.8	367.8	2
	Agricultural Uses	2	9.6	1.3	12.4	34.1	.
	Commercial Uses	6	8.8	2.3	18.9	99.6	4
	Cultural/Religious Uses	2	11.8	2.6	16.7	37.0	.
		Total	25	3.3	2.8	6.6	166.1	2
Kwara	Cooking	26	3.4	2.7	6.6	176.8	2
	Space Heating	22	3.0	0.9	2.6	58.1	.
	Other Domestic Uses	19	3.1	2.4	5.5	93.5	1
	Agricultural Uses	4	2.4	1.7	3.7	18.1	.
	Commercial Uses	27	3.2	5.8	10.4	274.6	2
	Cultural/Religious Uses	1	6.5	2.1	9.9	12.5	.

FUELWOOD USED

Percentage distribution of households by the average daily and monthly usage of fuelwood in units and kilograms

		Average number of days in the last 30 days fuelwood was used by household	Average daily number of unit of Fuelwood used	Average daily Kg per unit of fuelwood used	Average daily total Kg of fuelwood used	Average monthly total Kg of fuelwood used	Average times household cook with fuelwood per day
Oyo	Total	23	4.4	2.3	7.2	164.7	2
	Cooking	24	4.5	2.3	7.2	171.1	2
	Other Domestic Uses	13	4.6	1.9	8.8	105.2	1
	Agricultural Uses	3	4.3	3.0	12.3	35.6	.
	Commercial Uses	21	3.1	3.1	6.3	129.6	1
	Cultural/Religious Uses	1	3.3	3.4	7.9	9.8	.
	Total	26	4.0	3.0	8.2	210.7	2
Ekiti	Cooking	27	4.2	2.9	8.0	218.9	2
	Space Heating	2	9.0	1.3	12.1	24.1	.
	Other Domestic Uses	29	1.2	4.8	5.7	165.0	2
	Agricultural Uses	6	2.8	4.9	13.4	60.1	.
	Commercial Uses	13	4.4	3.5	11.8	167.7	1
	Cultural/Religious Uses	30	2.0	3.0	6.0	180.0	.
	Total	24	5.8	2.2	9.4	231.6	2
Enugu	Cooking	26	5.9	2.1	9.3	247.8	2
	Space Heating	11	2.8	1.5	4.6	54.7	.
	Other Domestic Uses	4	3.6	3.5	8.2	32.0	1
	Agricultural Uses	6	6.9	2.5	12.5	86.1	.
	Commercial Uses	17	3.2	5.0	13.5	200.6	1
	Cultural/Religious Uses	3	4.0	2.1	8.5	28.2	.
	Total	21	4.4	2.7	8.4	178.2	2
Akwa Ibom	Cooking	26	4.5	2.7	8.6	230.5	3
	Space Heating	5	1.0	1.4	1.4	6.3	.
	Other Domestic Uses	14	4.6	2.0	6.9	91.3	2
	Agricultural Uses	4	3.5	4.3	10.4	36.3	.
	Commercial Uses	12	2.3	3.9	8.6	87.6	2
	Cultural/Religious Uses	1	3.6	2.5	10.1	10.1	.

FUELWOOD USED

Percentage distribution of households by the average number of units and kilograms of fuelwood used daily and monthly.

	Energy shared with other households				Type of wood mostly used					Estimated number of households that used fuelwood for cooking only
	Yes, with one household	Yes, more than	None	Total	Collected deadwood	Cut twigs, brushwood	Cut branches, stems, trees	Used/Recovered wood (old furniture, planks from construction site etc.)	Total	
Overall	4.1	1.9	94.0	100	32.6	9.5	56.6	1.3	100	2,453,922
Sector										
Urban	6.2	2.0	91.8	100	30.9	9.1	56.5	3.5	100	842,446
Rural	3.0	1.8	95.2	100	33.5	9.7	56.7	0.1	100	1,611,475
State										
Sokoto	1.4	1.8	96.8	100	22.5	13.2	64.2	0.1	100	196,773
Bauchi	3.1	1.1	95.7	100	36.2	8.2	55.6	0.0	100	271,402
Kano	1.1	0.1	98.8	100	38.1	6.1	55.8	0.0	100	595,580
Plateau	1.0	0.8	98.2	100	48.7	4.5	46.8	0.0	100	196,917
Kwara	3.7	2.0	94.3	100	59.6	21.3	19.0	0.2	100	149,125
Oyo	4.8	3.8	91.4	100	16.3	18.8	58.9	5.9	100	375,785
Ekiti	4.7	1.6	93.8	100	30.9	5.8	61.1	2.2	100	146,860
Enugu	14.3	0.4	85.3	100	62.4	1.6	35.3	0.7	100	195,007
Akwa Ibom	6.9	5.1	88.0	100	5.4	7.7	85.5	1.4	100	326,472

FUELWOOD SOLD

Percentage distribution of households by the average number of units and kilograms of fuelwood sold daily and monthly

	Households engaged in sales of fuelwood in the last 30 days			Estimated Number of households	Units of fuelwood sold in the last 30 days?				Average total number of unit of fuelwood sold in the last 30 days	Average Kg of a unit of fuelwood sold	Average total Kg of fuelwood sold in the last 30 days	Average total income derived by household from fuelwood sales
	Sell	Did not sell	Total		Pieces	Bundles	Logs	Total				
Overall	1.7	98.3	100	12,734,044	19.4	68.6	12.0	100	22.1	4.01	86.5	₦6,371.0
Sector												
Urban	1.4	98.6	100	5,733,469	19.7	70.8	9.5	100	24.0	3.86	76.0	₦6,376.0
Rural	1.9	98.1	100	7,000,575	19.2	67.3	13.5	100	21.0	4.10	92.6	₦6,369.0
State												
Sokoto	3.1	96.9	100	1,125,961	0.0	100.0	0.0	100	17.6	3.60	58.6	₦4,786.0
Bauchi	1.6	98.4	100	1,477,020	15.2	54.3	30.4	100	30.2	5.35	138.6	₦7,825.0
Kano	0.5	99.5	100	2,781,355	0.0	100.0	0.0	100	38.7	2.80	93.0	₦6,376.0
Plateau	3.6	96.4	100	943,677	31.0	66.2	2.8	100	19.4	3.67	72.9	₦5,731.0
Kwara	0.2	99.8	100	771,984	0.0	54.1	45.9	100	6.8	8.74	51.8	₦10,468.0
Oyo	0.5	99.5	100	2,154,144	0.0	100.0	0.0	100	13.4	4.32	61.6	₦9,700.0
Ekiti	0.6	99.4	100	823,526	12.5	87.5	0.0	100	24.8	4.20	159.9	₦6,579.0
Enugu	2.2	97.8	100	1,176,319	32.9	61.9	5.2	100	34.3	3.93	104.6	₦7,411.0
Akwa Ibom	4.2	95.8	100	1,480,057	29.0	46.6	24.4	100	15.6	4.00	80.0	₦5,854.0

FUELWOOD SOLD

Percentage distribution of households by the average number of units and kilograms of fuelwood sold daily and monthly

	To whom did your household mostly sell fuelwood?										Estimated number of households that sell fuelwood in the last 30 days
	Urban households	Peri Urban Households	Rural Households	Industrial plants	commercial activities	Charcoal producers	Transporters, whole sellers	Retailers	Other (Specify)	Total	
Overall	17.0	14.8	48.2	0.0	7.9	0.9	6.2	2.0	3.1	100	211,912
Sector											
Urban	15.0	34.5	20.0	0.0	12.3	0.7	9.0	3.0	5.6	100	77,562
Rural	18.2	3.3	64.5	0.0	5.3	1.0	4.5	1.4	1.6	100	134,350
State											
Sokoto	16.6	4.0	72.2	0.0	0.0	0.0	7.2	0.0	0.0	100	34,504
Bauchi	30.1	6.4	50.7	0.0	0.0	0.0	3.7	0.0	9.2	100	23,966
Kano	0.0	20.3	79.7	0.0	0.0	0.0	0.0	0.0	0.0	100	14,405
Plateau	11.6	6.0	59.5	0.0	5.0	4.0	8.1	5.7	0.0	100	33,511
Kwara	45.9	0.0	54.1	0.0	0.0	0.0	0.0	0.0	0.0	100	1,865
Oyo	40.0	60.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100	11,216
Ekiti	50.8	49.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100	4,849
Enugu	0.0	33.2	0.0	0.0	27.0	2.2	26.7	8.9	2.2	100	26,063
Akwa Ibom	18.6	9.2	53.1	0.0	12.9	0.0	0.0	0.0	6.1	100	61,532

CHARCOAL ACQUISITION AND PRODUCTION

Percentage distribution of households by the average daily acquisition and production of coal in units and kilograms

	Households that purchased charcoal in the last 30 days			Estimated Number of Households	Average number of day in last 30 days charcoal was purchased	Unit of Charcoal purchased by the household				Estimated number of households that purchased charcoal in the last 30 days
	Purchased	Not Purchased	Total			Sack	Bowl/ Bucket	Plastics Bags	Total	
Overall	21.6	78.4	100	12,734,044	15	19.2	13.4	67.3	100	2,750,164
Sector										
Urban	33.9	66.1	100	5,733,469	15	17.9	12.2	69.9	100	1,946,126
Rural	11.5	88.5	100	7,000,575	13	22.5	16.4	61.2	100	804,037
Sector										
Sokoto	12.1	87.9	100	1,125,961	21	13.1	18.4	68.6	100	136,628
Bauchi	6.9	93.1	100	1,477,020	6	22.7	17.0	60.4	100	101,798
Kano	27.5	72.5	100	2,781,355	17	10.7	15.2	74.1	100	764,253
Plateau	13.7	86.3	100	943,677	11	34.5	22.7	42.8	100	129,534
Kwara	52.0	48.0	100	771,984	18	17.4	13.5	69.2	100	401,366
Oyo	38.2	61.8	100	2,154,144	13	19.8	6.8	73.4	100	823,212
Ekiti	37.1	62.9	100	823,526	11	38.2	13.9	47.9	100	305,900
Enugu	5.7	94.3	100	1,176,319	8	11.8	23.1	65.1	100	67,171
Akwa Ibom	1.4	98.6	100	1,480,057	5	19.0	65.9	15.1	100	20,302

CHARCOAL ACQUISITION AND PRODUCTION
Percentage

	Average number of unit of charcoal purchased by the household daily	Average Kg per unit of charcoal purchased by the household daily	Average total Kg of charcoal purchased by the household daily	Average total Kg of charcoal purchased by the household in the last 30 days	Average expenditure household used on purchase of charcoal per day	Household members produced charcoal			Estimated Number of Households
						Produced	Not produced	Total	
Overall	2.3	7.8	14.2	136.5	₦1,024.0	0.3	99.7	100	12,734,044
Sector									
Urban	2.4	7.2	14.5	147.1	₦999.6	0.2	99.8	100	5,733,469
Rural	2.2	9.3	13.5	110.9	₦1,083.2	0.4	99.6	100	7,000,575
Sector									
Sokoto	2.9	5.9	16.2	270.9	₦568.5	0.0	100.0	100	1,125,961
Bauchi	1.9	5.5	14.1	40.3	₦1,653.7	0.1	99.9	100	1,477,020
Kano	2.4	4.0	9.2	140.8	₦630.9	0.1	99.9	100	2,781,355
Plateau	2.8	12.0	22.5	248.5	₦1,776.3	0.2	99.8	100	943,677
Kwara	3.0	10.6	16.5	190.6	₦903.5	0.9	99.1	100	771,984
Oyo	1.9	7.3	9.6	74.0	₦987.4	0.4	99.6	100	2,154,144
Ekiti	2.1	15.1	25.3	138.0	₦1,891.1	0.7	99.3	100	823,526
Enugu	3.6	7.5	42.7	208.1	₦1,086.9	0.2	99.8	100	1,176,319
Akwa Ibom	3.2	4.0	20.1	45.1	₦1,527.8	0.3	99.7	100	1,480,057

CHARCOAL ACQUISITION AND PRODUCTION

Percentage distribution of households by the average daily acquisition and production of coal in units and kilograms

	Type of technology used by households in production of charcoal				Wood used to produce the charcoal						
	Eath Kilns	Bricks Kilns	Metal Kilns	Total	Average total number of sacks of charcoal produced in the last 30 day	Average Kg of Sack of Charcoal produced	Average total Kg of charcoal produced in the last 30 days	Cut by household member	purchased for otherwise acquired	Both	Total
Overall	86.8	13.2	0.0	100	10.0	33.9	415.8	64.7	27.2	8.1	100
Sector											
Urban	90.7	9.3	0.0	100	3.0	23.8	66.3	75.8	24.2	0.0	100
Rural	85.2	14.8	0.0	100	12.0	37.8	551.1	60.4	28.4	11.2	100
Sector											
Sokoto	100.0	0.0	0.0	100	1.0	50.0	50.0	100.0	0.0	0.0	100
Bauchi	100.0	0.0	0.0	100	5.0	25.0	125.0	100.0	0.0	0.0	100
Kano	100.0	0.0	0.0	100	2.0	20.6	48.0	0.0	100.0	0.0	100
Plateau	100.0	0.0	0.0	100	15.0	36.1	716.7	43.8	56.2	0.0	100
Kwara	94.6	5.4	0.0	100	23.0	49.7	1302.0	95.3	0.0	4.7	100
Oyo	60.1	39.9	0.0	100	11.0	36.6	323.9	57.1	25.8	17.2	100
Ekiti	90.4	9.6	0.0	100	5.0	24.1	92.3	71.3	12.4	16.2	100
Enugu	100.0	0.0	0.0	100	4.0	51.6	171.4	0.0	100.0	0.0	100
Akwa Ibom	100.0	0.0	0.0	100	1.0	15.0	18.8	100.0	0.0	0.0	100

CHARCOAL ACQUISITION AND PRODUCTION

Percentage

	Wood used to produce charcoal mainly cut					Estimated number of households that produced charcoal in the last 30 days	Households that acquired charcoal in the last 30 days			Average total quantity of Charcoal in Kg acquired through other ways in the last 30 days	Estimated number of households
	Natural forest	forest plantation	Dot't know	others specify	Total		Acquired	Not Acquired	Total		
Overall	78.6	13.7	4.6	3.1	100	36,176	0.6	99.4	100	98.8	12,734,044
Sector											
Urban	63.4	32.7	0.0	3.8	100	10,093	1.1	98.9	100	78.5	5,733,469
Rural	84.5	6.4	6.3	2.8	100	26,083	0.2	99.8	100	172.4	7,000,575
Sector											
Sokoto	100.0	0.0	0.0	0.0	100	448	1.1	98.9	100	289.4	1,125,961
Bauchi	0.0	100.0	0.0	0.0	100	1,665	0.0	100.0	100	.	1,477,020
Kano	100.0	0.0	0.0	0.0	100	3,271	0.1	99.9	100	5.0	2,781,355
Plateau	56.2	0.0	0.0	43.8	100	1,646	1.0	99.0	100	158.3	943,677
Kwara	94.6	0.0	0.0	5.4	100	7,158	0.3	99.7	100	674.6	771,984
Oyo	100.0	0.0	0.0	0.0	100	9,655	2.0	98.0	100	11.9	2,154,144
Ekiti	56.4	15.0	28.7	0.0	100	5,768	0.3	99.7	100	14.1	823,526
Enugu	0.0	100.0	0.0	0.0	100	2,441	0.2	99.8	100	8.0	1,176,319
Akwa Ibom	100.0	0.0	0.0	0.0	100	4,125	0.3	99.7	100	185.8	1,480,057

CHARCOAL ACQUISITION THROUGH IN-KIND, BARTER, BORROW AND GIFT

Percentage distribution of households by the average daily acquisition of charcoal in units and kilograms through in-kind transactions, barter, borrowing, and gifts.

	Average number of days acquired charcoal	Average daily number of unit of Charcoal	Average daily Kg per unit of Charcoal	Average daily Kg of charcoal	Average monthly Kg of charcoal
Overall	9	2.1	14.1	41.7	149.2
Sector					
Urban	9	2.4	12.4	47.9	133.5
Rural	7	1.5	18.8	24.1	193.5
State					
Sokoto	19	2.3	7.3	14.7	345.0
Bauchi	0	0.0	0.0	0.0	0.0
Kano	1	2.0	2.5	5.0	5.0
Plateau	6	1.4	13.5	20.2	189.6
Kwara	1	3.0	127.5	627.5	627.5
Oyo	7	2.5	1.0	3.4	11.1
Ekiti	2	1.0	17.5	17.5	18.3
Enugu	2	2.0	2.0	4.0	8.0
Akwa Ibom	5	1.5	50.9	51.7	161.9

CHARCOAL USED
Percentage distribution of households by the average daily and monthly usage of charcoal in units and kilograms

		Average number of days in the last 30 days charcoal was used	Average daily number (units) of Charcoal used	Average daily Kg per unit used of Charcoal	Average daily Kg amount of charcoal used	Average monthly total Kg of Charcoal used
Overall	Overall	19	2.21	3.23	6.27	116.95
	Cooking	20	2.2	3.1	5.9	122.0
	Space Heating	8	1.3	6.9	7.3	33.3
	Other Domestic Uses	16	1.6	3.6	5.6	86.6
	Agricultural Uses	5	1.8	1.6	2.5	14.2
	Commercial Uses	23	2.2	5.5	14.5	283.0
	Cultural/Religious Uses	3	3.6	4.6	13.1	37.8
Urban	Total	20	2.29	3.18	6.6	123.5
	Cooking	21	2.3	2.9	6.1	129.1
	Space Heating	10	1.6	1.5	2.3	24.9
	Other Domestic Uses	15	1.6	4.1	6.3	95.3
	Agricultural Uses	6	1.5	1.3	2.1	17.5
	Commercial Uses	23	2.4	6.3	18.0	346.9
	Cultural/Religious Uses	3	3.7	4.6	13.4	38.9
Rural	Total	18	2.03	3.35	5.5	101.79
	Cooking	19	2.1	3.4	5.7	107.2
	Space Heating	7	1.0	13.6	13.6	43.9
	Other Domestic Uses	17	1.6	1.7	3.1	55.2
	Agricultural Uses	4	2.0	1.9	2.8	10.9
	Commercial Uses	24	1.7	3.1	4.6	100.6
	Cultural/Religious Uses	2	2.0	3.3	6.8	15.4
Sokoto	Total	19	3.2	4.5	16.2	315.41
	Cooking	23	3.4	4.2	16.8	382.4
	Other Domestic Uses	6	1.0	2.8	2.8	11.7
	Commercial Uses	30	2.0	1.5	3.0	90.0
	Cultural/Religious Uses	3	2.8	7.4	18.8	60.7
Bauchi	Total	13	1.54	2.06	3.18	56.03
	Cooking	12	1.3	2.1	3.0	52.9
	Other Domestic Uses	22	3.6	1.1	4.2	100.2
	Cultural/Religious Uses	1	1.5	3.5	4.5	4.5
Kano	Total	19	2.22	3.71	4.78	84.75
	Cooking	24	2.1	3.8	3.6	89.0
	Other Domestic Uses	14	1.7	4.0	5.1	94.2
	Agricultural Uses	6	3.0	0.9	2.6	15.8
	Commercial Uses	25	2.7	1.7	5.9	152.4
	Cultural/Religious Uses	3	4.1	3.2	10.6	27.7
	Total	19	2.61	2.69	6.51	111.04
Plateau	Cooking	18	2.8	2.8	6.9	116.7
	Space Heating	20	1.0	1.0	1.0	20.8
	Other Domestic Uses	24	1.8	1.9	4.0	71.4
	Commercial Uses	30	2.0	5.0	10.0	300.0
	Total	21	2.42	3.39	6.7	135.4
Kwara	Cooking	22	2.6	3.2	6.4	137.7
	Space Heating	10	2.0	1.7	3.3	33.2
	Other Domestic Uses	16	1.2	3.9	6.2	98.0
	Agricultural Uses	10	2.0	1.7	3.3	33.2
	Commercial Uses	18	2.0	11.1	27.7	342.7
	Total	19	1.78	2.74	4.22	92.34
Oyo	Cooking	19	1.8	2.7	3.9	84.7
	Other Domestic Uses	5	1.0	1.0	1.0	4.3
	Agricultural Uses	2	1.0	3.0	3.0	6.0
	Commercial Uses	25	2.0	5.6	15.7	415.6
	Total	19	1.69	2.16	3.42	70.38
Ekiti	Cooking	19	1.7	2.2	3.4	70.6
	Space Heating	2	1.3	1.5	1.7	2.5
	Other Domestic Uses	21	1.5	2.4	3.7	82.2
	Commercial Uses	4	2.0	1.0	2.0	8.0

CHARCOAL USED

Percentage distribution of households by the average daily and monthly usage of charcoal in units and kilograms

		Average number of days in a in the last 30 days charcoal was used	Average daily number units of Charcoal used	Average daily Kg per unit used of Charcoal	Average daily Kg amount of charcoal used	Average monthly total Kg of Charcoal used
Enugu	Total	13	2.9	4.62	14.71	118.71
	Cooking	14	2.8	4.1	12.5	117.7
	Other Domestic Uses	1	5.0	12.0	51.0	74.3
	Commercial Uses	30	2.0	5.0	10.0	300.0
Akwa Ibom	Total	12	2.91	10.85	15.04	146.67
	Cooking	13	3.8	11.5	17.7	203.5
	Space Heating	13	1.3	17.8	18.1	78.7
	Other Domestic Uses	6	1.5	1.6	2.7	8.5
	Agricultural Uses	2	1.0	0.9	0.9	1.8

CHARCOAL SOLD

Percentage distribution of households by the average number of units and kilograms of charcoal sold daily and monthly

	Households that sell Charcoal in the last 30 days			Average unit of Charcoal sold by the household					Average total number of units charcoal sold in the last 30 days	Average kg per unit of charcoal sold in the last 30 days	Average total Kg of charcoal sold in the last 30 days	Average total income derived by your household from Charcoal sales in Naira	Where household mostly sell charcoal										Estimated number of households that sold charcoal in the last 30 days
	Sell	Not Sell	Total	Estimated number of households	Sack	Bow/ Bucket	Plastics Bag	Total					Urban households	Peri Urban Households	Rural Households	Industrial plants	commercial activities	Charcoal producers	Transp orters, whole sellers	Retailers	Other (Specify)	Total	
Overall	0.7	99.3	100	12,734,044	72.3	4.9	22.8	100	23.3	28.7	462.4	₦25,828	36.3	13.0	38.5	0.0	6.4	0.0	5.8	0.0	0.0	100	85,753
Sector																							
Urban	0.6	99.4	100	5,733,469	64.7	3.1	32.2	100	35.8	26.4	579.0	₦27,422	60.8	26.5	0.0	0.0	11.2	0.0	1.4	0.0	0.0	100	36,742
Rural	0.7	99.3	100	7,000,575	77.9	6.3	15.8	100	14.0	30.5	375.0	₦24,634	17.9	2.8	67.4	0.0	2.8	0.0	9.1	0.0	0.0	100	49,011
State																							
Sokoto	0.3	99.7	100	1,125,961	100.0	0.0	0.0	100	5.0	50.0	250.0	₦5,000	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100	2,819
Bauchi	0.0	100.0	100	1,477,020	0.0	0.0	0.0	0	.	.	.	.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0	-
Kano	1.0	99.0	100	2,781,355	70.6	0.0	29.4	100	24.3	24.5	425.8	₦20,452	54.2	0.0	30.8	0.0	15.0	0.0	0.0	0.0	0.0	100	27,547
Plateau	0.1	99.9	100	943,677	100.0	0.0	0.0	100	10.0	50.3	502.5	₦30,000	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100	722
Kwara	1.8	98.2	100	771,984	70.0	8.3	21.7	100	27.9	31.5	1056.5	₦39,536	35.7	22.3	22.7	0.0	10.2	0.0	9.1	0.0	0.0	100	13,610
Oyo	1.2	98.8	100	2,154,144	75.5	11.4	13.0	100	12.8	26.2	241.5	₦16,229	23.6	10.9	56.3	0.0	0.0	0.0	9.2	0.0	0.0	100	26,918
Ekiti	1.2	98.8	100	823,526	50.3	0.0	49.7	100	56.1	18.4	450.2	₦41,988	37.2	51.2	6.5	0.0	0.0	0.0	5.1	0.0	0.0	100	10,121
Enugu	0.1	99.9	100	1,176,319	100.0	0.0	0.0	100	1.5	10.5	15.8	₦16,500	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100	1,221
Akwa Ibom	0.2	99.8	100	1,480,057	100.0	0.0	0.0	100	5.0	100.0	500.0	₦70,000	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	100	2,796

ELECTRICITY (NATIONAL GRID) SUPPLY

Percentage distribution of households by access to electricity supply services , billing and payment methods

	Dwelling connected to National grid			Electricity supply from the national grid in the last 30 days				Type of Billing system used			Household recharged / paid in last 30 days			Estimated number of households with power supply	
	Connected	Not connected	Total	Estimated number of households	Supply			Estimated	Total	recharged /paid	Not recharge				
					Supply	No Supply	Total				/paid	/paid	Total		
Overall	58.2	41.8	100	12,734,044	86.6	13.4	100	7,411,214	14.8	85.2	100	84.5	15.5	100	6,418,111
Sector															
Urban	87.3	12.8	100	5,733,469	90.0	10.0	100	5,002,452	17.4	82.6	100	82.0	18.0	100	4,502,207
Rural	34.3	65.7	100	7,000,575	77.2	22.8	100	2,401,897	6.5	93.5	100	92.6	7.4	100	1,854,265
State															
Sokoto	23.1	76.9	100	1,125,961	95.1	4.9	100	260,322	2.7	97.3	100	97.8	2.2	100	247,566
Bauchi	31.6	68.5	100	1,477,020	92.8	7.2	100	466,000	2.1	97.9	100	94.0	6.0	100	432,448
Kano	58.9	41.1	100	2,781,355	75.9	24.1	100	1,639,053	6.3	93.7	100	97.2	2.8	100	1,244,041
Plateau	35.4	64.7	100	943,677	95.7	4.3	100	333,590	30.9	69.1	100	92.3	7.7	100	319,245
Kwara	65.7	34.3	100	771,984	90.0	10.0	100	506,885	17.7	82.3	100	97.5	2.5	100	456,196
Oyo	77.3	22.7	100	2,154,144	94.5	5.5	100	1,665,369	27.6	72.4	100	61.1	38.9	100	1,573,773
Ekiti	79.7	20.3	100	823,526	66.6	33.4	100	656,597	4.3	95.7	100	90.7	9.3	100	437,294
Enugu	72.2	27.8	100	1,176,319	85.8	14.2	100	849,655	14	86	100	90.7	9.3	100	729,004
Akwa Ibom	69.4	30.6	100	1,480,057	90.0	10.0	100	1,027,308	4.9	95.1	100	90.1	9.9	100	924,577

ELECTRICITY (NATIONAL GRID) SUPPLY

Percentage distribution of households by access to electricity supply services , billing and payment methods

	Places where households buy / paid the electricity unit					Estimated number of households that recharged / paid	Average number of times household recharged electricity in last 30 days?	Average total of electricity unit recharged/paid in last 30 days by the households	Average total cost of electricity unit recharged /paid in last 30 days	Average electricity units recharged by households
	Estimated number of households with power supply	Vendor at the Disco Office	Online vendor	POS vendors and others	Total					
Overall	6,418,111	92.2	5.7	2.1	100	5,423,304	2	1,307	₦4,156	26
Sector										
Urban	4,502,207	90.6	7.1	2.3	100	3,691,809	2	1,305	₦4,582	26
Rural	1,854,265	96.7	1.7	1.6	100	1,717,049	2	1,318	₦2,918	26
State										
Sokoto	247,566	100	0.0	0.0	100	242,120	2	657	₦4,725	10
Bauchi	432,448	99.4	0.6	0.0	100	406,501	1	6,730	₦2,648	7
Kano	1,244,041	98.6	1.2	0.3	100	1,209,208	2	1,948	₦3,039	25
Plateau	319,245	78.3	8.3	13.5	100	294,664	3	1,058	₦6,154	25
Kwara	456,196	89.5	3.5	7.0	100	444,791	2	1,149	₦3,655	28
Oyo	1,573,773	82.7	16.1	1.2	100	961,576	2	123	₦3,284	26
Ekiti	437,294	99.2	0.0	0.8	100	396,625	1	1,209	₦3,104	26
Enugu	729,004	89.8	8.5	1.7	100	661,207	2	3,755	₦7,319	27
Akwa Ibom	924,577	97.9	1.9	0.3	100	833,044	3	5,270	₦4,489	26

ELECTRICITY (NATIONAL GRID) USE
Percentage distribution of households by average electricity used and purpose of usage

		Average number of days in the last 30 days electricity was used	Average daily usage of electricity Per day in minutes	Average daily usage of electricity Per month in Minutes	Average hot/induction plates used at a time	Average power rating of the hot/induction plates	Average times (minutes) household cook with electricity in a day
Overall	Overall	11	58	730	1	703	1
	Cooking	13	53	777	1	703	2
	Space Heating	5	69	435	1	637	1
	Other Domestic Uses	11	58	711	1	702	1
	Agricultural Uses	2	72	120	1	761	1
	Commercial Uses	17	85	1626	1	721	2
	Cultural/Religious Uses	3	76	211	1	731	1
Urban	Total	11	54	659	1	703	1
	Cooking	14	51	810	1	700	2
	Space Heating	5	69	435	1	637	1
	Other Domestic Uses	10	54	617	1	703	1
	Agricultural Uses	2	72	120	1	761	1
	Commercial Uses	17	81	1575	1	730	3
	Cultural/Religious Uses	3	76	210	1	730	1
Rural	Total	13	73	1018	1	702	1
	Cooking	10	65	600	1	717	1
	Other Domestic Uses	13	74	1068	1	700	1
	Commercial Uses	17	99	1812	1	692	1
	Cultural/Religious Uses	4	60	240	1	800	1
Sokoto	Total	15	71	1135	1	679	2
	Cooking	13	52	693	1	674	2
	Other Domestic Uses	15	74	1158	2	685	1
	Commercial Uses	27	90	2340	1	600	1
Bauchi	Total	12	48	702	1	695	1
	Cooking	4	30	120	1	600	1
	Space Heating	2	30	60	1	600	2
	Other Domestic Uses	12	54	836	1	708	1
	Commercial Uses	30	30	900	1	800	2
Kano	Total	14	52	854	1	708	1
	Cooking	11	41	512	1	731	2
	Other Domestic Uses	15	51	912	1	706	1
	Commercial Uses	30	120	3600	2	600	1
	Cultural/Religious Uses	3	73	208	1	725	1
Plateau	Total	16	69	1074	1	715	2
	Cooking	15	74	1071	1	726	2
	Space Heating	5	120	600	1	600	2
	Other Domestic Uses	22	51	1150	1	699	1
Kwara	Total	12	70	920	1	701	1
	Cooking	12	61	802	1	720	1
	Other Domestic Uses	12	72	928	1	696	1
	Agricultural Uses	1	120	120	1	800	1
	Commercial Uses	16	93	1548	1	700	2
	Cultural/Religious Uses	4	60	240	1	800	1
Oyo	Total	8	47	440	1	699	1
	Cooking	12	59	820	1	659	2
	Other Domestic Uses	8	46	379	1	701	1
	Commercial Uses	15	81	1727	1	800	2
Ekiti	Total	9	81	736	1	706	1
	Cooking	11	55	631	1	711	2
	Space Heating	10	120	1200	1	800	1
	Other Domestic Uses	8	84	743	1	705	1
Enugu	Total	15	59	949	1	708	2
	Cooking	17	36	674	1	702	2
	Space Heating	5	30	154	1	600	1
	Other Domestic Uses	15	73	1193	1	711	2
	Agricultural Uses	2	54	119	1	746	1
	Commercial Uses	17	99	1362	1	741	5
	Cultural/Religious Uses	2	120	240	2	800	2
Akwa Ibom	Total	12	56	736	1	704	2
	Cooking	11	54	881	1	700	1
	Other Domestic Uses	12	57	676	1	707	2
	Commercial Uses	9	54	636	1	600	2

ELECTRICITY (SOLAR HOME SYSTEM/SOLAR MINI-GRID) SUPPLY

Percentage distribution of households by access to Solar home systems, installed capacity and electricity supply

	Access to solar electricity at home			Type of solar electricity households have access to			Electricity supply from the solar system in the last 30 days			Estimated number of households with access to electricity supply from solar systems	Average hours per day households had solar electricity supply	
	Access	No access	Total	Estimated number of households	Solar home system	Solar Mini Grid	Total	Access	No Access			Total
Overall	4.8	95.2	100	12,734,044	90.9	9.1	100	97.7	2.3	100	614,790	9
Sector												
Urban	7.5	92.5	100	5,733,469	91.5	8.5	100	97.7	2.3	100	431,290	9
Rural	2.6	97.4	100	7,000,575	89.6	10.4	100	97.6	2.4	100	183,500	9
State												
Sokoto	0.5	99.5	100	1,125,961	76.7	23.3	100	69.3	30.7	100	6,027	17
Bauchi	0.0	100.0	100	1,477,020	0	100	100	0	100	100	673	.
Kano	3.8	96.2	100	2,781,355	100	0	100	100	0	100	105,690	15
Plateau	1.2	98.8	100	943,677	86.1	13.9	100	94.9	5.1	100	11,524	10
Kwara	4.6	95.4	100	771,984	76.7	23.3	100	93.2	6.8	100	35,604	13
Oyo	11.6	88.4	100	2,154,144	92.2	7.8	100	100	0	100	250,091	7
Ekiti	18.0	82.0	100	823,526	85.4	14.6	100	97.7	2.3	100	148,144	8
Enugu	1.8	98.2	100	1,176,319	93.2	6.8	100	73.8	26.2	100	20,917	10
Akwa Ibom	2.4	97.6	100	1,480,057	97.1	2.9	100	100	0	100	36,120	8

ELECTRICITY (SOLAR HOME SYSTEM/SOLAR MINI-GRID) SUPPLY

Percentage distribution of households by access to Solar home systems, installed capacity and electricity supply

	Household or any member pay bill for electricity in last 30 days			Average amount households pay for the electricity	Any established tariff for solar energy			Estimated number of households that have access to electricity supply from solar in last 30 days	Type of tariff regime			Estimated number of households with established tariff
	Bill was paid	Not paid	Total		Established tarriff	No established tariff	Total		Flat rate	kWh (Kilowatt hour) rate	Total	
Overall	16.5	83.5	100	₦7,037	9.8	90.2	100	600,351	82.9	17.1	100	58,648
Sector												
Urban	17.3	82.7	100	₦5,696	9.0	91.0	100	421,306	83.0	17.0	100	37,861
Rural	14.6	85.4	100	₦10,775	11.6	88.4	100	179,045	82.7	17.3	100	20,787
State												
Sokoto	0.0	100.0	100	.	33.6	66.4	100	4,177	0.0	100.0	100	1,402
Bauchi	0.0	0.0	0	.	0.0	0.0	0	-	0.0	0.0	0	-
Kano	3.3	96.7	100	₦5,000	0.0	100.0	100	105,690	0.0	0.0	0	-
Plateau	18.1	81.9	100	₦7,932	3.7	96.3	100	10,937	0.0	100.0	100	406
Kwara	18.4	81.6	100	₦4,442	10.1	89.9	100	33,168	51.5	48.5	100	3,360
Oyo	25.0	75.0	100	₦6,355	13.6	86.4	100	250,091	86.5	13.5	100	33,892
Ekiti	12.3	87.7	100	₦11,205	12.8	87.2	100	144,728	94.9	5.1	100	18,533
Enugu	24.4	75.6	100	₦5,465	0.0	100.0	100	15,440	0.0	0.0	0	-
Akwa Ibom	9.1	90.9	100	₦5,610	2.9	97.1	100	36,120	0.0	100.0	100	1,054

ELECTRICITY (SOLAR HOME SYSTEM/SOLAR MINI-GRID) SUPPLY

Percentage distribution of households by access to Solar home systems, installed capacity and electricity supply

	Average amount of tariff rate paid in the last 30 days?	Average unit of installed capacity of households solar system			Estimated number of households that have access to electricity supply from solar in last 30 days	Average installed capacity of households solar system	Average installed capacity of household solar system in Kilowats (kW)	Average number of hours households use solar in the last 30 days	Average consumption of the household in kWh
		KVA (KiloVolt Amp)	kW (Kilowatts)	Total					
Overall	₦5,971	33.7	66.3	100	600,351	374.8	335.2	105	30,701.4
Sector									
Urban	₦6,296	25.8	74.2	100	421,306	369.0	331.7	105	36,163.1
Rural	₦5,379	52.4	47.6	100	179,045	388.6	343.3	105	17,849.7
State									
Sokoto	₦910	77.1	22.9	100	4,177	446.5	357.5	17	6,461.0
Bauchi	.	0.0	0.0	0	-	.	.	.	.
Kano	.	59.7	40.3	100	105,690	100.0	81.5	153	11,753.6
Plateau	₦4,500	78.8	21.2	100	10,937	672.3	572.8	77	47,223.0
Kwara	₦9,372	8.1	91.9	100	33,168	962.7	880.7	35	15,887.7
Oyo	₦5,655	31.6	68.4	100	250,091	313.2	275.0	76	6,241.1
Ekiti	₦6,545	19.9	80.1	100	144,728	293.6	248.1	146	65,480.4
Enugu	.	66.2	33.8	100	15,440	18.2	17.6	10	125.0
Akwa Ibom	₦2,500	19.2	80.8	100	36,120	1445.8	1403.3	116	140,624.6

ELECTRICITY (SOLAR HOME SYSTEM/SOLAR MINI-GRID) USE

Percentage distribution of households by average electricity from solar home system used and purpose of usage

		Average number of days in the last 30 days solar was used	Average amount Per day minutes	Average amount per month Minutes	Average number of hot/induction plates used by households at a time	Average power rating of the hot/induction plates used	Average number of times households cook with electricity in a day
Overall	Total	27	18	487	1	703	1
	Cooking	18	10	180	1	800	1
	Other Domestic Uses	27	18	493	1	702	1
	Commercial Uses	19	12	222	1	700	2
Urban	Total	27	18	482	1	716	1
	Cooking	18	10	180	1	800	1
	Other Domestic Uses	27	18	489	1	714	1
	Commercial Uses	7	12	84	1	800	1
Rural	Total	28	18	500	1	668	1
	Other Domestic Uses	28	18	504	1	670	1
	Commercial Uses	30	12	360	1	600	3
Sokoto	Total	29	13	377	1	600	1
	Other Domestic Uses	29	13	377	1	600	1
Kano	Total	29	18	529	2	650	2
	Other Domestic Uses	29	19	538	2	653	1
	Commercial Uses	30	12	360	1	600	3
Kwara	Total	23	18	399	1	727	2
	Other Domestic Uses	23	18	399	1	727	2
Oyo	Total	26	19	495	2	713	1
	Other Domestic Uses	27	19	509	2	710	1
	Commercial Uses	7	12	84	1	800	1
Ekiti	Total	28	18	507	1	706	1
	Other Domestic Uses	28	18	507	1	706	1
Akwa Ibom	Total	18	10	180	1	800	1
	Cooking	18	10	180	1	800	1

ELECTRICITY (CAPTIVE – DIESEL/PETROL GENERATOR) ACQUISITION

Percentage distribution of households by level of acquisition of diesel/ petrol, quantity and cost

	Household purchased diesel/petrol in the last 30 days			Estimated number of households	Average number of days in the last 30 days households purchased diesel/petrol	Average total quantity of diesel/petrol purchased each time in litre by households	Average quantity of diesel/petrol purchased per month by households	Average amount used by households to purchased diesel/petrol per litre each time	Average total expenditure on diesel/petrol per month in Naira by households	Average number of days normally use the diesel/petrol purchased by households	Places where households purchase diesel or petrol			Estimated number of households that purchased Diesel/petrol in the last 30 days
	Purchased	Not Purchased	Total								PMS Filling Station	Petty Vendors	Total	
Overall	4.8	95.2	100	12,734,044	9	7.38	61.2	763	₦44,752	9	86.7	13.3	100	609,008
Sector														
Urban	8.0	92.0	100	5,733,469	9	7.77	62.9	757	₦45,683	9	89.0	11.0	100	460,710
Rural	2.1	97.9	100	7,000,575	10	6.17	55.7	785	₦41,858	9	79.5	20.5	100	148,298
State														
Sokoto	0.4	99.6	100	1,125,961	22	4.42	96.3	744	₦71,572	12	76.1	23.9	100	3,998
Bauchi	0.7	99.3	100	1,477,020	5	4.45	17.3	738	₦13,281	9	30.0	70.0	100	9,670
Kano	1.6	98.4	100	2,781,355	12	8.72	89.8	694	₦61,364	5	100.0	0.0	100	44,763
Plateau	1.4	98.6	100	943,677	10	6.9	59.5	801	₦48,422	7	53.1	46.9	100	12,832
Kwara	6.5	93.5	100	771,984	12	5.06	63.9	692	₦44,745	5	100.0	0.0	100	50,172
Oyo	5.3	94.7	100	2,154,144	11	7.88	82.4	677	₦55,932	13	100.0	0.0	100	115,242
Ekiti	4.7	95.3	100	823,526	14	5.19	69.8	740	₦50,952	7	97.4	2.6	100	38,848
Enugu	8.1	91.9	100	1,176,319	7	9.57	55.8	824	₦44,364	6	65.5	34.5	100	94,785
Akwa Ibom	16.1	83.9	100	1,480,057	8	7.06	47.0	812	₦36,014	11	85.8	14.2	100	238,699

ELECTRICITY (CAPTIVE – DIESEL/PETROL GENERATOR) USE

Percentage distribution of households by average litres and power rating of households electronics/generator

		Average number of days in the last 30 days diesel/petrol was used	Average number of daily per min	Average monthly per Min	Average number of power rating of household electric cooker/stove	Average power rating of households diesel generator?
Overall	Total	14	93	2865	722	2592
	Cooking	19	47	958	640	1060
	Other Domestic Uses	13	96	2338	727	2737
	Commercial Uses	21	93	8381	729	1924
	Cultural/Religious Uses	2	78	113	600	2500
Urban	Total	14	94	2692	720	2763
	Cooking	23	44	1138	650	950
	Other Domestic Uses	13	97	2467	728	2845
	Commercial Uses	25	86	9108	680	2810
	Cultural/Religious Uses	2	78	113	600	2500
Rural	Total	13	90	3360	728	2101
	Cooking	4	60	240	600	1500
	Other Domestic Uses	11	89	1882	723	2355
	Commercial Uses	18	96	7977	756	1432
	Cultural/Religious Uses	3	35	105	600	1500
Kano	Total	12	42	2529	680	2425
	Other Domestic Uses	11	36	2826	657	2500
	Commercial Uses	22	66	2700	800	2625
	Cultural/Religious Uses	3	35	105	600	1500
Plateau	Total	16	108	12924	680	1620
	Cooking	4	60	240	600	1500
	Commercial Uses	19	120	16095	700	1650
Kwara	Total	13	105	2779	739	2875
	Other Domestic Uses	12	104	2309	739	2988
	Commercial Uses	21	120	7960	733	1633
Oyo	Total	12	95	1467	743	3119
	Other Domestic Uses	12	97	1519	740	3085
	Commercial Uses	7	60	420	800	3800
Ekiti	Total	17	94	3605	713	2362
	Other Domestic Uses	16	98	3293	717	2423
	Commercial Uses	30	48	7350	667	1630
Enugu	Total	16	90	1611	733	2883
	Cooking	30	50	1500	667	933
	Other Domestic Uses	8	110	1667	767	3858
Akwa Ibom	Total	9	91	1177	716	2147
	Cooking	2	25	50	600	1000
	Other Domestic Uses	10	92	1312	725	2175
	Commercial Uses	10	120	1200	800	1500
	Cultural/Religious Uses	1	120	120	600	3500

HOUSEHOLD FUEL USE FOR HOME-HEATING

Percentage distribution of households by type of conversion methods used for home heating

	Location			Presence of device for removal			Conversion technologies in order of frequency of use										Estimation number households that used fuel for home heating
	In the living area	In a dedicated room	Total	Hood	Windows	Total	Most frequently used,	Frequently used,	Barely used,	Custom/Habits	Income	Fear/Risk	Price	Fast and Easy	Others Specify	Total	
Overall	32.2	67.8	100	2.9	97.1	100	43.4	24.8	31.8	44.8	15.1	1.3	10.8	24.1	4.1	100	68,328
Electricity National grid	0.0	100.0	100	0	100	100	0.0	77.8	22.2	0.0	0.0	0.0	100.0	0.0	0.0	100	4,980
Electricity generator	0.0	100.0	100	0	100	100	100.0	0.0	0.0	60.1	0.0	0.0	39.9	0.0	0.0	100	1,570
LPG (cylinder)	50.0	50.0	100	0	100	100	0.0	100.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0	100	4,909
Charcoal	17.6	82.4	100	0	100	100	40.9	0.0	59.1	70.7	0.0	5.5	17.9	5.9	0.0	100	15,564
Firewood	50.4	49.6	100	6.7	93.3	100	70.3	16.9	12.8	51.8	31.1	0.0	2.4	12.2	2.4	100	29,274
Crop residues/grass/straw/shrubs	23.7	76.3	100	0	100	100	0.0	47.4	52.6	47.4	23.7	0.0	0.0	28.9	0.0	100	4,943
Animal dung/waste	0.0	100.0	100	0	100	100	100.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	100	1,131
Sawdust	0.0	100.0	100	0	100	100	0.0	0.0	100.0	0.0	0.0	100.0	0.0	0.0	0.0	100	3,874
Others	43.8	56.3	100	0	100	100	0.0	43.8	56.3	0.0	0.0	0.0	0.0	100.0	0.0	100	2,083

APPLIANCE AND ENERGY CONSUMPTION

Percentage distribution of households by type of appliances used by households and energy consumption

Electrical Appliance	Average Power rating (W)	Functional status			Status at purchase			age of the appliances					Average daily usage per hour	Average calculated energy consumption	Estimated number of households that uses electrical appliances
		Functional	Not Functioning	Total	Brand New	Second Hand	Total	3 years and below	4 to 6 years	7 to 9 years	10 years and above	Total			
Air Conditioner	1,229	91.5	8.5	100	94.6	5.4	100	56.4	19.4	15.7	8.5	100	3.18	7.52	47,941
Freezer	219	94.5	5.5	100	85.1	14.9	100	37.7	38.4	15.7	8.3	100	3.03	7.37	256,841
Refrigerator	343	94.6	5.4	100	79.6	20.4	100	37.8	39.8	11.2	11.2	100	3.24	5.43	221,697
Electric Kettle	829	99.4	0.6	100	68.1	31.9	100	53.1	34.5	10.3	2.1	100	1.22	1.69	74,365
Microwave	754	89.5	10.5	100	100.0	0.0	100	49.1	33.9	9.4	7.6	100	0.28	1.6	12,366
Washing Machine	1,053	98.8	1.2	100	89.6	10.4	100	36.2	25.0	21.7	17.1	100	2.16	1.67	33,583
Pressing Iron	1,089	98.4	1.6	100	71.4	28.6	100	42.6	37.1	12.0	8.3	100	1.2	1.66	324,012
Pumping Machine	435	97.6	2.4	100	99.3	0.7	100	24.8	36.8	8.6	29.8	100	1.6	1.68	23,322
Battry Inverter	1,000	100	0.0	100	69.5	30.5	100	61.8	38.2	0.0	0.0	100	4.3	4.93	2,693
Water Dispenser	250	100	0.0	100	90.1	9.9	100	9.9	75.3	0.0	14.8	100	0.68	3.26	2,205
Top-Up Toaster	753	100	0.0	100	100.0	0.0	100	78.0	22.0	0.0	0.0	100	1	0.96	894
Rice/ Yam/ Beans Cooker	621	93.7	6.3	100	66.5	33.5	100	59.2	21.6	19.2	0.0	100	1.68	2.23	5,194
Blender/Mix Grinder	632	93.9	6.1	100	83.2	16.8	100	48.8	26.3	19.2	5.7	100	1.08	1.64	31,930
Dish	15	95.6	4.4	100	100.0	0.0	100	33.3	66.7	0.0	0.0	100	3.39	3.18	9,227
Home Theater	695	98.3	1.7	100	79.2	20.8	100	48.6	44.2	6.3	1.0	100	2.95	1.87	43,575
Television Set	62	94.2	5.8	100	78.4	21.6	100	40.2	39.5	12.4	7.9	100	2.76	1.44	1,088,286
Ceiling Fan	62	96.4	3.6	100	86.4	13.6	100	30.1	39.4	16.4	14.1	100	3.01	0.51	697,229
Standing Fan	60	97.1	2.9	100	89.0	11.0	100	53.0	35.4	7.8	3.7	100	2.87	0.51	584,034
Phones (Table, Mobile Etc)	6	98.6	1.4	100	75.9	24.1	100	72.3	25.0	2.3	0.4	100	0.98	4.23	2,622,338
Desktop Pc	62	82.6	17.4	100	41.8	58.2	100	21.9	41.8	19.0	17.4	100	1.28	0.13	2,488
Laptop	59	100	0.0	100	67.2	32.8	100	52.0	35.2	11.8	1.0	100	3.48	1.08	46,274
Palmtop	60	100	0.0	100	0.0	100.0	100	0.0	100.0	0.0	0.0	100	5	0.33	375
Other Appliance	301	95.5	4.5	100	70.9	29.1	100	37.8	33.7	9.2	19.3	100	3.54	1.02	31,731

Liquefied Petroleum Gas

	Proportion of households that purchase LPG in the last 30 days	Average times household purchase LPG in the last 30 days	Average quantity of LPG purchased in the last 30 days by the household	Average expenditure on LPG in the last 30 days in Naira	Average days households normally use the same quantity of LPG purchased	Average travel time to buy the LPG by car or bike or trekking in Munites?	Where do households buy the LPG?			Total	
							Co-located with PMS Filling Station	Stand-Alone Gas Refilling Plant	Cylinder to Cylinder Vendor		
Overall	20.0	2	8	10,240	26	23	34.2	26.8	39.0	100.0	2,541,308
Sector											
URBAN	36.6	2	8	10,409	26	22	33.0	26.7	40.3	100.0	2,101,175
RURAL	6.3	2	7	9,431	26	28	40.0	27.1	32.8	100.0	440,132
State											
SOKOTO	1.0	2	8	12,439	19	25	84.1	0.0	15.9	100.0	11,650
BAUCHI	.8	2	7	9,751	15	31	42.9	0.0	57.1	100.0	11,228
KANO	6.6	2	9	11,251	21	23	52.4	24.0	23.7	100.0	182,210
PLATEAU	14.3	2	8	11,475	27	40	39.9	36.1	24.0	100.0	134,721
KWARA	26.5	1	7	8,569	26	18	48.5	19.7	31.8	100.0	204,846
OYO	43.4	2	9	10,516	24	20	33.7	20.3	46.0	100.0	934,459
EKITI	26.9	1	6	8,214	32	21	6.7	57.7	35.6	100.0	221,583
ENUGU	21.8	1	9	11,852	38	23	4.8	18.4	76.8	100.0	255,900
AKWA IBOM	39.5	2	7	9,812	22	25	45.1	31.4	23.5	100.0	584,710

Liquefied Petroleum Gas

	Households main mode of transportation use to buy the LPG?						LPG USAGE AMONG HOUSEHOLDS THAT REPORTED USING LPG AS A SOURCE OF ENERGY						
	Foot	Animal	Bicycle/ Motorcycle	Vehicle	Boat/ Canoe	Total	Cooking	Other Domestics Uses	Agricultural Uses	Commercial Uses	To power generator	Cultural/ Religious Uses	
Overall	32.2	0.1	51.9	15.8	0.0	100.0	2,541,308						
								77.6	11.7	0.1	0.6	0.5	0.9
Sector													
URBAN	34.5	.1	50.0	15.4	0.0	100.0	2,101,175	77.5	12.9	0.0	0.6	0.4	1.1
RURAL	21.2	0.0	61.1	17.7	0.0	100.0	440,132	78.2	6.6	0.3	0.4	0.8	0.0
State													
SOKOTO	0.0	0.0	67.7	32.3	0.0	100.0	11,650	92.4	0.0	0.0	0.0	0.0	0.0
BAUCHI	34.4	0.0	65.6	0.0	0.0	100.0	11,228	100.0	0.0	0.0	0.0	0.0	0.0
KANO	18.6	0.0	57.7	23.7	0.0	100.0	182,210	57.9	26.3	0.0	0.8	0.0	2.0
PLATEAU	22.2	0.0	64.3	13.5	0.0	100.0	134,721	80.3	12.5	0.0	0.0	0.0	0.0
KWARA	26.9	0.0	46.2	26.9	0.0	100.0	204,846	75.2	7.3	0.0	0.7	0.6	0.0
OYO	47.5	.2	42.1	10.1	0.0	100.0	934,459	92.1	3.8	0.0	0.7	0.0	1.9
EKITI	42.6	0.0	45.8	11.6	0.0	100.0	221,583	92.3	5.5	0.0	0.2	0.0	0.0
ENUGU	21.4	0.0	40.8	37.8	0.0	100.0	255,900	83.9	1.9	0.0	1.2	1.1	0.0
AKWA IBOM	17.7	0.0	71.6	10.8	0.0	100.0	584,710	71.0	15.2	0.3	0.3	1.9	0.0

Agricultural Residues

	Proportion of households that acquired crop residues/ grass/straw/ shrubs/animal		Fuel mostly use by households									
			Agricultural Residues		Grass/straw/shrubs		Animal dung		Garabages/Plastics		Total	
Overall	1,434,445	11.3	691,165	48.2	670,622	46.8	69,997	4.9	2,661	0.2	1,434,445	100.0
Sector												
URBAN	124,228	2.2	84,570	68.1	36,329	29.2	2,338	1.9	992	0.8	124,228	100.0
RURAL	1,310,217	18.7	606,595	46.3	634,294	48.4	67,660	5.2	1,669	0.1	1,310,217	100.0
State												
SOKOTO	238,158	21.2	86,491	36.3	151,668	63.7	-	0.0	-	0.0	238,158	100.0
BAUCHI	414,234	28.0	72,549	17.5	280,280	67.7	61,405	14.8	-	0.0	414,234	100.0
KANO	638,272	22.9	449,298	70.4	188,974	29.6	-	0.0	-	0.0	638,272	100.0
PLATEAU	129,083	13.7	73,111	56.6	45,711	35.4	8,592	6.7	1,669	1.3	129,083	100.0
KWARA	2,571	.3	1,966	76.5	605	23.5	-	0.0	-	0.0	2,571	100.0
OYO	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0	-	0.0
EKITI	2,645	.3	937	35.4	716	27.1	-	0.0	992	37.5	2,645	100.0
ENUGU	4,487	.4	3,101	69.1	1,386	30.9	-	0.0	-	0.0	4,487	100.0
AKWA IBOM	4,995	.3	3,712	74.3	1,283	25.7	-	0.0	-	0.0	4,995	100.0

Agricultural Residues

	How many days in the last 30 days?	Average daily quantity in packs of the e fuel type acquired by t	Average usual daily quantity in kg per packs of the e fuel type acquired	Average monthly quantity in kg of the fuel type acquired per by t	Average expenditure of the fuel type per day, in Naira?	Average number of days HH use the fuel type purchased?
Overall	18	5	9	702	351	15
Sector						
URBAN	16	4	10	813	791	15
RURAL	19	5	9	691	309	15
State						
SOKOTO	15	6	7	588	313	12
BAUCHI	20	5	8	796	92	14
KANO	18	4	10	587	430	16
PLATEAU	19	5	10	1,234	850	19
KWARA	24	1	1	20	-	24
OYO						
EKITI	2	12	25	256	1,354	4
ENUGU	14	4	5	287	479	23
AKWA IBOM	17	2	1	128	115	18

Agricultural Residues

Where do you purchased/ buy aquired fuel type?												
	Farm		Bush		Refuse site		Vendor		Others specify		Overall	
Overall	1,102,563	76.9	93,360	6.5	18,483	1.3	216,449	15.1	3,590	.3	1,434,445	100.0
Sector												
URBAN	60,585	48.8	1,452	1.2	2,081	1.7	58,724	47.3	1,386	1.1	124,228	100.0
RURAL	1,041,977	79.5	91,908	7.0	16,403	1.3	157,725	12.0	2,204	0.2	1,310,217	100.0
State												
SOKOTO	149,358	62.7	52,189	21.9	6,862	2.9	29,749	12.5	-	0.0	238,158	100.0
BAUCHI	375,272	90.6	28,797	7.0	2,373	.6	6,872	1.7	921	0.2	414,234	100.0
KANO	448,765	70.3	10,100	1.6	6,198	1.0	173,208	27.1	-	0.0	638,272	100.0
PLATEAU	121,686	94.3	1,669	1.3	970	.8	4,758	3.7	-	0.0	129,083	100.0
KWARA	1,966	76.5	605	23.5	-	0.0	0	0.0	-	0.0	2,571	100.0
OYO	0	0.0	0	0.0	-	0.0	0	0.0	-	0.0	0	0.0
EKITI	937	35.4	0	0.0	992	37.5	716	27.1	-	0.0	2,645	100.0
ENUGU	2,012	44.9	0	0.0	1,089	24.3	0	0.0	1,386	30.9	4,487	100.0
AKWA IBOM	2,566	51.4	0	0.0	-	0.0	1,146	22.9	1,283	25.7	4,995	100.0

Agricultural Residues

	Main mode of transportation use to the place of acquisition										Average travel time to the place you acquired fuel type in Munites?
	Foot		Animal		Bicycle/Motorcycle		Vehicle		Boat/canoe		
Overall	1,233,216	86.0	93,907	6.5	95,063	6.6	12,260	.9	0	0.0	37
Sector											
URBAN	112,541	90.6	6,734	5.4	4,953	4.0	-	0.0	0	0.0	28
RURAL	1,120,675	85.5	87,173	6.7	90,110	6.9	12,260	.9	0	0.0	38
State											
SOKOTO	191,545	80.4	20,250	8.5	19,154	8.0	7,209	3.0	0	0.0	43
BAUCHI	377,504	91.1	33,082	8.0	3,648	.9	-	0.0	0	0.0	37
KANO	526,470	82.5	40,574	6.4	66,178	10.4	5,050	.8	0	0.0	28
PLATEAU	123,716	95.8	0	0.0	5,367	4.2	-	0.0	0	0.0	74
KWARA	2,571	100.0	0	0.0	0	0.0	-	0.0	0	0.0	21
OYO	0	0.0	0	0.0	0	0.0	-	0.0	0	0.0	
EKITI	1,929	72.9	0	0.0	716	27.1	-	0.0	0	0.0	12
ENUGU	4,487	100.0	0	0.0	0	0.0	-	0.0	0	0.0	15
AKWA IBOM	4,995	100.0	0	0.0	0	0.0	-	0.0	0	0.0	26

Energy Cooking

	Total Households	HOUSEHOLD FUEL USE FOR COOKING	Energy																Location of cooking space				Device for removal of indoor air					
			Electricity National grid	Electricity generator	Solar PV system	LPG (cylinder)	Piped gas	Biogas	(Bio)ethanol	Kerosene	Charcoal	Coal	Firewood	Crop residues/grass / straw/shrubs	Animal dung/waste	Pellets, woodchips	Sawdust	Garbage/plastic	Others	Open Space	Outdoor	In a separate building	In the living area	Indoor, in a dedicated room (kitchen)	Window	Chimney	Hood	Fan Extractor
INDUCTION STOVE	46,562	0.70	88.04	0.84	2.27	-	-	-	-	2.56	-	-	-	-	-	6.30	-	-	-	5.8	6.3	7.2	8.2	72.4	87.9	0	0	0
ELECTRIC STOVE/COOKER	102,678	1.50	93.13	0.81	-	6.06	-	-	-	-	-	-	-	-	-	-	-	-	-	1.1	2.7	5.3	7.9	83.1	96.3	0	0	0.8
SOLAR THERMAL STOVE/COOKER	4,774	0.10	-	-	-	100.00	-	-	-	-	-	-	-	-	-	-	-	-	-	-	27.5	-	-	72.5	72.5	0	0	0
GAS STOVE/COOKER	1,100,434	16.40	1.04	-	0.05	97.28	1.44	0.16	-	-	0.04	-	-	-	-	-	-	-	-	3.4	2.8	3.8	9.0	81.0	93.6	0.1	0.3	1.4
LIQUID FUEL (KEROSENE) STOVE	23,150	0.30	-	-	-	11.49	-	-	1.54	86.97	-	-	-	-	-	-	-	-	-	30.1	15.2	9.0	7.0	38.7	50.9	0	3.7	0
MANUFACTURED SOLID FUEL STOVE (IMPROVED STOVE FOR CHARCOAL OR BRIQUETTE)	213,641	3.20	-	-	-	0.32	-	-	-	-	97.72	-	0.44	1.52	-	-	-	-	-	49.6	11.0	1.3	4.7	33.4	39.4	0	0	0
LOCALLY FABRICATED CHAR. STOVE (CHARCOAL STOVE/COAL POT ALSO FOR BRIQUETTE)	997,788	14.80	0.07	-	0.04	0.54	-	-	-	-	95.01	0.71	2.36	1.16	-	-	-	-	0.10	42.2	31.9	4.3	1.3	20.4	25.9	0.2	0	0.2
SAWDUST STOVE	13,499	0.20	-	-	-	-	-	-	-	-	5.22	-	49.16	-	-	-	45.62	-	-	26.1	23.8	-	-	50.1	50.1	0	0	0
THREE-STONE FIRE (OPEN FIRE)	3,936,986	58.60	0.08	0.07	-	0.10	-	-	-	-	0.62	0.06	94.91	3.85	0.22	0.05	-	-	0.02	64.1	17.1	5.1	0.3	13.4	18.3	0.2	0.5	0.3
ONE DIRECTIONAL OPEN FIRE	249,368	3.70	-	-	-	-	-	-	-	-	0.24	0.34	70.40	27.60	1.21	0.20	-	-	-	42.3	29.4	14.9	0.3	13.0	26.9	0.8	3.4	0
OTHER (SPECIFY)	34,408	0.50	7.49	-	3.27	-	-	-	-	-	2.78	-	43.06	36.73	4.74	-	-	-	1.93	55.0	6.8	4.1	3.3	30.8	38.2	0	0	0
NO STOVE/NO COOKING	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0
NO MORE	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0
Overall	6,723,289	100.00	2.30	0.06	0.05	16.28	0.24	0.03	0.01	0.32	17.62	0.15	58.87	3.68	0.20	0.08	0.09	-	0.04	48.0	16.9	5.0	2.2	27.9	34.7	0.2	0.5	0.4

Estimated households expenditure and quantity (KG) of Fuelwood Purchased, cut/collect, sold and used annually

	Annual Kilograms of fuelwood purchased by households		Annual expenditure on fuelwood purchased by households		Annual Kilograms of fuelwood cut/collected by households		Annual Kilograms of fuelwood sold by households		Annual Revenue from Sales of fuelwood by households	
	Average	Total	Average	Total	Average	Total	Average	Total	Average	Total
Overall	270.1	1,401,866,915	₦117,347	₦608,724,611,127	5,697.5	28,289,514,015	1,038.4	220,048,254.2	₦76,456	₦16,202,015,284
Sector										
Urban	258.63	546,258,577	₦124,230	₦262,282,490,794	5,481.6	8,068,470,237	912.5	70,775,614.7	₦76,515	₦5,934,604,452
Rural	277.98	855,608,338	₦112,622	₦346,442,120,333	5,788.4	20,221,043,778	1,111.1	149,272,639.5	₦76,423	₦10,267,410,832
State										
Sokoto	181.02	145,120,861	₦82,750	₦66,340,320,316	6,305.8	2,026,880,613	702.6	24,242,341.5	₦57,436	₦1,981,762,089
Bauchi	259.17	163,441,775	₦96,180	₦60,655,318,878	6,337.1	6,125,955,274	1,663.1	39,857,943.1	₦93,899	₦2,250,405,006
Kano	325.94	425,551,414	₦117,144	₦152,946,779,362	6,166.6	1,958,619,968	1,116.3	16,079,349.9	₦76,518	₦1,102,212,110
Plateau	365.84	144,179,299	₦183,030	₦72,133,024,341	7,836.6	4,101,977,426	874.7	29,312,221.3	₦68,769	₦2,304,516,642
Kwara	215.06	41,222,844	₦90,982	₦17,271,424,067	3,328.8	1,049,063,948	622.1	1,160,289.8	₦125,622	₦234,291,996
Oyo	252.4	99,848,352	₦105,307	₦41,659,749,653	5,281.7	3,640,262,978	739.0	8,288,484.4	₦116,400	₦1,305,535,783
Ekiti	257.67	79,327,636	₦97,360	₦29,889,263,573	7,115.7	2,483,654,568	1,919.1	9,305,909.8	₦78,944	₦382,808,205
Enugu	385.54	187,727,479	₦149,118	₦72,609,330,843	7,381.4	5,508,290,941	1,254.8	32,704,980.1	₦88,937	₦2,317,997,154
Akwa Ibom	170.79	115,447,254	₦140,862	₦95,219,400,094	1,893.9	1,394,808,298	960.4	59,096,734.3	₦70,247	₦4,322,486,298

Estimated households expenditure and quantity (KG) of of Charcoal Purchased, Produced and sold annually

	Annual Kg of charcoal purchased by households		Annual Expenditure on Charcoal by households		Annual total Kilogram of Charcoal produced by households		Annual total Kilograms of Charcoal sold by households	
	Average	Total	Average	Total	Average	Total	Average	Total
Overall	1,638.1	4,505,085,513.6	₦79,343	₦218,205,909,860	4,989.8	180,514,293.1	5,548.5	475,801,926.1
Sector								
Urban	1,765.2	3,435,256,641.9	₦79,837	₦155,373,455,827	796.0	8,034,074.3	6,947.5	255,266,466.1
Rural	1,330.6	1,069,828,871.8	₦78,146	₦62,832,454,033	6,612.7	172,480,218.8	4,499.7	220,535,460.0
State								
Sokoto	3,250.7	444,132,381.5	₦109,765	₦14,996,934,666	600.0	268,512.0	3,000.0	8,458,129.4
Bauchi	484.0	49,265,497.2	₦48,168	₦4,903,409,596	1,500.0	2,497,120.5	.	.
Kano	1,689.8	1,291,426,738.6	₦64,995	₦49,672,750,276	576.0	1,884,193.9	5,109.6	140,752,314.2
Plateau	2,982.0	386,273,659.2	₦117,054	₦15,162,454,489	8,600.7	14,158,760.0	6,030.0	4,351,478.8
Kwara	2,286.6	917,747,779.4	₦91,239	₦36,620,121,299	15,624.4	111,836,135.2	12,678.5	172,553,379.8
Oyo	888.1	731,070,965.2	₦74,929	₦61,682,373,343	3,886.7	37,527,570.5	2,898.0	78,010,298.2
Ekiti	1,655.6	506,442,900.2	₦93,725	₦28,670,475,649	1,107.9	6,389,815.2	5,402.0	54,672,089.9
Enugu	2,497.3	167,743,608.1	₦66,894	₦4,493,311,785	2,056.2	5,020,017.8	189.0	230,711.0
Akwa Ibom	540.9	10,981,984.2	₦98,712	₦2,004,078,756	226.0	932,168.0	6,000.0	16,773,524.9

Estimated households expenditure and Kilograms of LPG Acquired and Biogas Purchased/produced annually

	Annual Kilograms of LPG Acquired by households		Annual Expenditure on LPG Acquired by households	
	Average	Total	Average	Total
Overall	96.29	244,698,062.10	₦122,877	₦312,268,229,115
Sector				
Urban	98.49	206,947,848.17	₦124,911	₦262,459,376,714
Rural	85.77	37,750,213.93	₦113,168	₦49,808,852,401
State				
Sokoto	97.17	1,132,046.78	₦149,272	₦1,739,080,904
Bauchi	82.68	928,291.27	₦117,009	₦1,313,804,171
Kano	112.76	20,545,977.46	₦135,012	₦24,600,589,207
Plateau	100.14	13,491,207.90	₦137,695	₦18,550,395,173
Kwara	83.31	17,066,720.21	₦102,823	₦21,062,800,664
Oyo	102.38	95,667,801.29	₦126,192	₦117,921,156,530
Ekiti	76.69	16,992,735.89	₦98,563	₦21,839,829,820
Enugu	107.90	27,611,582.24	₦142,226	₦36,395,613,653
Akwa Ibom	87.67	51,261,699.06	₦117,742	₦68,844,958,993

Estimated households expenditure and Kilograms of woodchips/sawdust and crop residues/grass acquired

	Annual Kilograms of wood chips /sawdust acquired by households		Annual Expenditure on wood chips/sawdust by households		Annual Kilograms of crop residues /grass acquired by households		Annual expenditure on crop residues/grass by households	
	Average	Total	Average	Total	Average	Total	Average	Total
Overall	2,932	72,126,853	₦56,531	₦1,390,684,648	8,419	12,077,107,908	₦38,612	₦55,386,579,800
Sector								
Urban	3,185	66,352,895	₦64,159	₦1,336,688,966	9,758	1,212,189,311	₦52,952	₦6,578,107,883
Rural	1,533	5,773,958	₦14,337	₦53,995,682	8,292	10,864,918,597	₦37,252	₦48,808,471,917
State								
Sokoto	.	.	.	.	7,053	1,679,795,879	₦57,528	₦13,700,854,312
Bauchi	.	.	.	.	9,546	3,954,360,737	₦14,566	₦6,033,743,416
Kano	136	708,956	₦5,552	₦28,992,896	7,049	4,498,955,663	₦38,530	₦24,592,490,479
Plateau	1,118	5,773,958	₦114,421	₦590,894,556	14,813	1,912,066,694	₦79,079	₦10,207,757,375
Kwara	5,791	11,190,366	₦114,678	₦221,589,418	244	627,628	₦0	₦0
Oyo	216	600,394	₦8,400	₦23,348,668	.	.	.	.
Ekiti	1,920	1,057,993	₦0	₦0	3,078	8,140,460	₦16,250	₦42,980,953
Enugu	7,826	33,821,855	₦68,840	₦297,519,191	3,447	15,464,466	₦172,588	₦774,381,287
Akwa Ibom	4,099	18,973,331	₦49,331	₦228,339,919	1540.7	7696380.67	6880.73	34371977.24

Estimated households expenditure Electricity and quantity (Litres) of fuel/diesel

	Total expenditure on electricity by households		Annual total expenditure on electricity of households with solar systems		Annual total quantity of litres of fuel/diesel by households		Annual total expenditure on fuel/diesel by households	
	Average	Total	Average	Total	Average	Total	Average	Total
Overall	₦49,869	₦175,054,991,258	₦84,445	₦8,348,163,100	734	446,998,808	₦537,022	₦327,051,149,521
Sector								
Urban	₦54,987	₦143,570,989,132	₦68,355	₦4,973,254,866	755	347,864,254	₦548,199	₦252,561,070,947
Rural	₦35,011	₦31,484,002,125	₦129,294	₦3,374,908,233	668	99,134,554	₦502,300	₦74,490,078,575
State								
Sokoto	₦56,698	₦7,424,247,382	.	.	1,156	4,621,987	₦858,869	₦3,433,624,610
Bauchi	₦31,772	₦5,952,089,701	.	.	207	2,003,647	₦159,371	₦1,541,074,016
Kano	₦36,471	₦22,743,731,532	₦60,000	₦206,600,208	1,078	48,249,413	₦736,365	₦32,962,178,249
Plateau	₦73,844	₦13,976,563,946	₦95,182	₦188,888,818	713	9,154,613	₦581,063	₦7,455,988,275
Kwara	₦43,864	₦17,260,294,052	₦53,308	₦326,032,838	767	38,475,262	₦536,938	₦26,939,140,526
Oyo	₦39,404	₦27,892,197,854	₦76,255	₦4,759,792,695	989	113,974,536	₦671,185	₦77,348,794,042
Ekiti	₦37,250	₦9,476,857,561	₦134,457	₦2,398,077,092	837	32,523,489	₦611,430	₦23,752,917,206
Enugu	₦87,833	₦39,312,406,284	₦65,579	₦246,645,982	669	63,417,314	₦532,369	₦50,460,723,530
Akwa Ibom	₦53,871	₦31,016,602,946	₦67,317	₦222,125,466	563.8	134578547	₦432,163	₦103,156,709,067

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