

IMPROVING DATA QUALITY AND IMPACTS OF BIOFUELS TO THE ECONOMY

MINISTRY OF ENERGY AND PETROLEUM

&

KENYA NATIONAL BUREAU OF STATISTICS

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Outline

1. Overview
2. Background
3. Current Status
4. Way forward



Overview



Quick facts about Kenya

- Kenya is a country in East Africa.
- Population: 47.6 Million (KPHC 2019), 51.5 Million (KNBS Population projection, 2023)
- Land mass: 564,000 KM²
- GDP Current prices (2021): \$ 110.3 Billion
- GDP per capita (2021): \$ 2235.7
- Number of households: 12 million (2019) with an average household size of 3.9
- The three (3) biggest industries in the country (2021): Agriculture, forestry and fishing; Transportation and storage; and real estate
- About 75% of all Kenyan households are connected to electricity (Government priority)
- Forest cover: 8.83% (2021)
- Tree cover (12.4%)
- **New Government target: 30% target for forest cover by 2032; KENYA COMMITS TO PLANT 15 BILLION TREES by 2032**
- Kenya National Clean Cooking Strategy (KNCCS): Universal Access to Clean Cooking by 2028



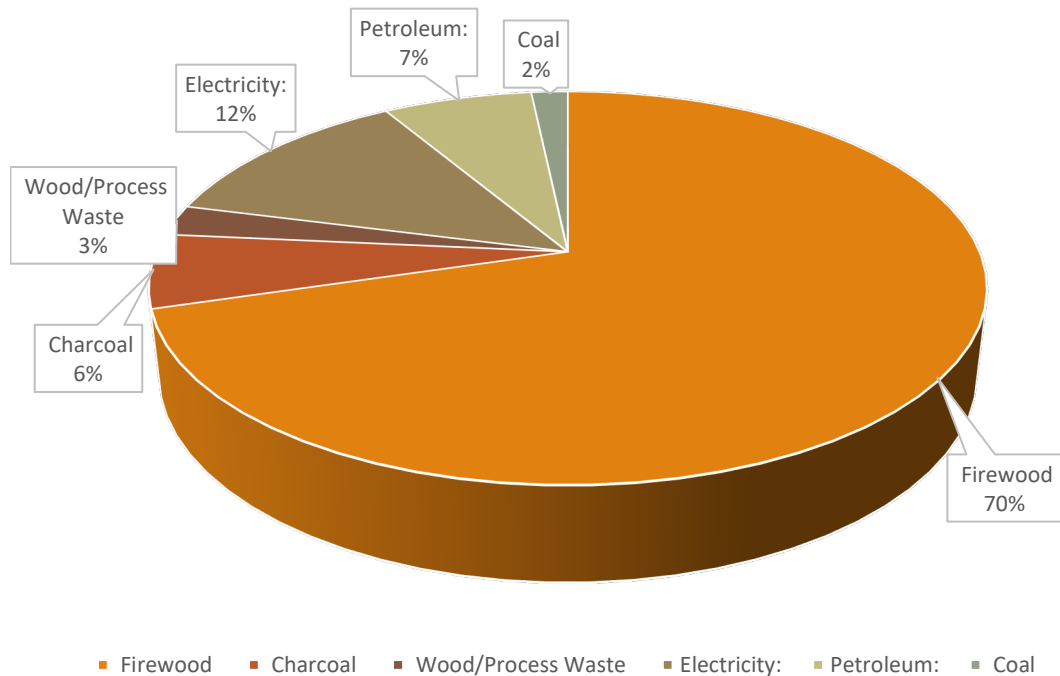
Background

- Between 70-75 per cent of Kenyans still use fuelwood and/or charcoal as their main/primary source of cooking
- Fuelwood and charcoal is being used as a source of energy by some industries, example, tea factories
- Most (87.5 per cent in 2022) of electricity in Kenya is generated using renewable technologies
- Net importer of petroleum products
- Coal is still being imported in the country
- About 350MW (2022) of power is captive by nature, a third of which are Bio fuels
- There exists a National Energy Statistics Technical Working Committee (NESTwC) that meets on a quarterly basis to harmonise energy statistics
- We are working with stakeholders to incorporate GIS to understand Biomass production side
- **Kenya, through KNBS, produces annual energy balances and annual Energy Physical Supply and Use Tables using the SEEA Framework**



Current Status

Estimated Energy Consumption, Kenya, 2022



- Bioenergy Data is currently considered “informal” in official statistics and is collected using Adhoc censuses/surveys.
- The most recent data is from the Kenya Integrated Household Budget Survey (last done in 2015/16), the Kenya Population and housing Census (2019) and recently the Kenya Demographic and Health Survey (2022). These surveys are not conducted with energy as the primary objective.



Quick Statistics (Kenya Population and Housing Statistics 2019):

Percentage Distribution of Households by Main Source of Lighting Fuel and Residence/ County

Residence	Electricity connection from Mains	Generator	Solar Energy	Paraffin Lantern	Paraffin Tin lamp	Paraffin Pressure Lamp	Fuelwood	Gas lamp	Battery Lamp/Torch	Candles	Biogas	Others	Not Stated	Number of Households ('000)
National.....	41.4	0.5	14.1	15.7	19.3	0.2	1.6	0	4.8	0.9	0	1.1	0.3	11415
Rural.....	17.1	0.5	21.7	20.6	27.7	0.3	2.7	0	7.3	0.3	0	1.4	0.2	6,442
Urban.....	73	0.4	4.2	9.2	8.5	0.1	0.2	0	1.5	1.7	0	0.6	0.5	4,972

- Percentage Distribution of Households by Main Source of Cooking Fuel and Residence/ County

Residence	Fuelwood	Electricity	LPG	Biogas	Kerosene	Charcoal	Straw Shrub Grass	Animal dung	Agricultural Crop residue	Other	Number of Households ('000)
National.....	54.6	1	13.4	0.2	14	14.6	0	0.1	0.2	1.6	11415
Rural.....	84.3	0.3	2.5	0.2	2.3	8.9	0	0	0.3	0.9	6442
Urban.....	16.1	2	27.6	0.2	29	21.9	0	0.1	0	2.4	4,972



Quick Statistics (KIHBS, 2015/16):

Product	Unit	Quantity	Value
Purchased Firewood	Kgs	5,345,975,460.17	1,202,299,515.26
Collected Firewood	Kgs	9,071,883,174.95	3,437,172,882.77
Farm Residue	Kgs	501,933,331.03	171,057,305.38
Wood/Process Waste	Kgs	22,837,879.15	17,958,464.91
Charcoal	Kgs	1,240,565,884.98	2,554,946,952.66
Kerosene/Paraffin	Litres	29,358,204.93	1,725,807,678.04
LPG	Kgs	17,097,888.68	2,177,177,378.88
Grid Electricity	KWh	244,204,034.64	2,669,059,452.98
Candles	Number	10,540,633.10	113,508,781.83
Dry Cell batteries	Number	10,256,128.33	239,128,287.00
Lead Cell Batteries	Kgs	1,777,118.92	40,933,841.11
Mini-Hydro	Watts	43,130.20	43,130.20
Generator	Litres	249,776.33	29,774,526.99

There are efforts to introduce an energy module in the Quaterly Continous Household Survey Program (QCHSP) to get quarterly updates



Quick Statistics (Economic Survey, 2022):

Captive Power Capacities, 2018-2022*

	MW				
	2018	2019	2020	2021	2022*
Hydro	26.0	26.0	26.0	28.3	32.4
Coal	30.0	30.0	30.0	30.0	30.0
Cogeneration	32.0	32.0	32.0	32.0	32.0
Waste Heat Recovery	0.0	0.0	0.0	28.5	83.5
Bagasse	15.7	15.7	15.7	60.2	60.2
Solar ⁺	3.5	3.5	35.0	35.0	46.3
Biomass	1.5	1.5	1.5	2.9	2.9
Thermal	18.5	18.5	18.5	46.1	53.9
Biogas	2.6	2.6	2.6	2.8	2.8
Biothermal					2.1
Geothermal	3.7	3.7	3.7	3.7	3.7
Total	133.5	133.5	165.0	269.5	349.8

⁺ Revised

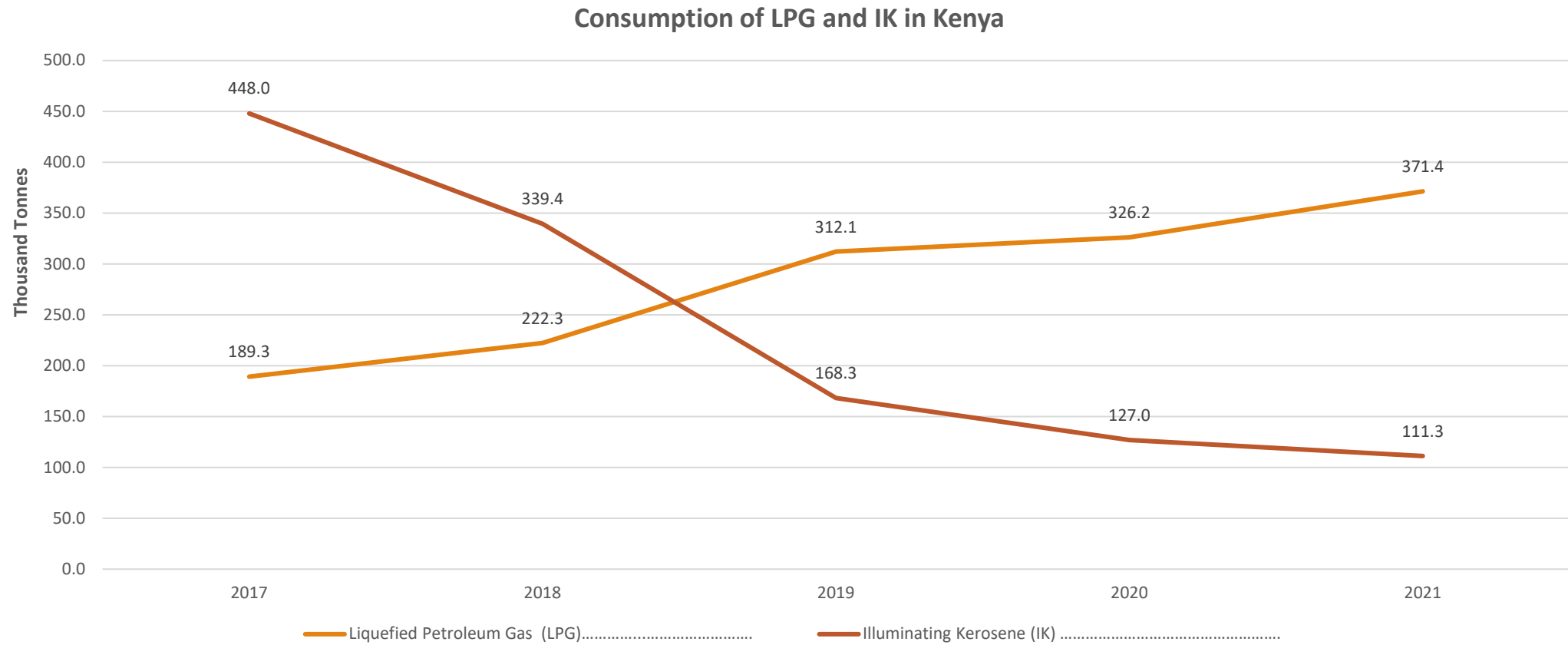
* Provisional

¹ Cumulative: The table presents a stock of available active capacities in the country, these are cumulative in nature

Note: Captive power capacity is the capacity of an autoproducer to generate electricity exceeding 1MW, within their facility which is then used and managed by the autoproducer for their own energy consumption

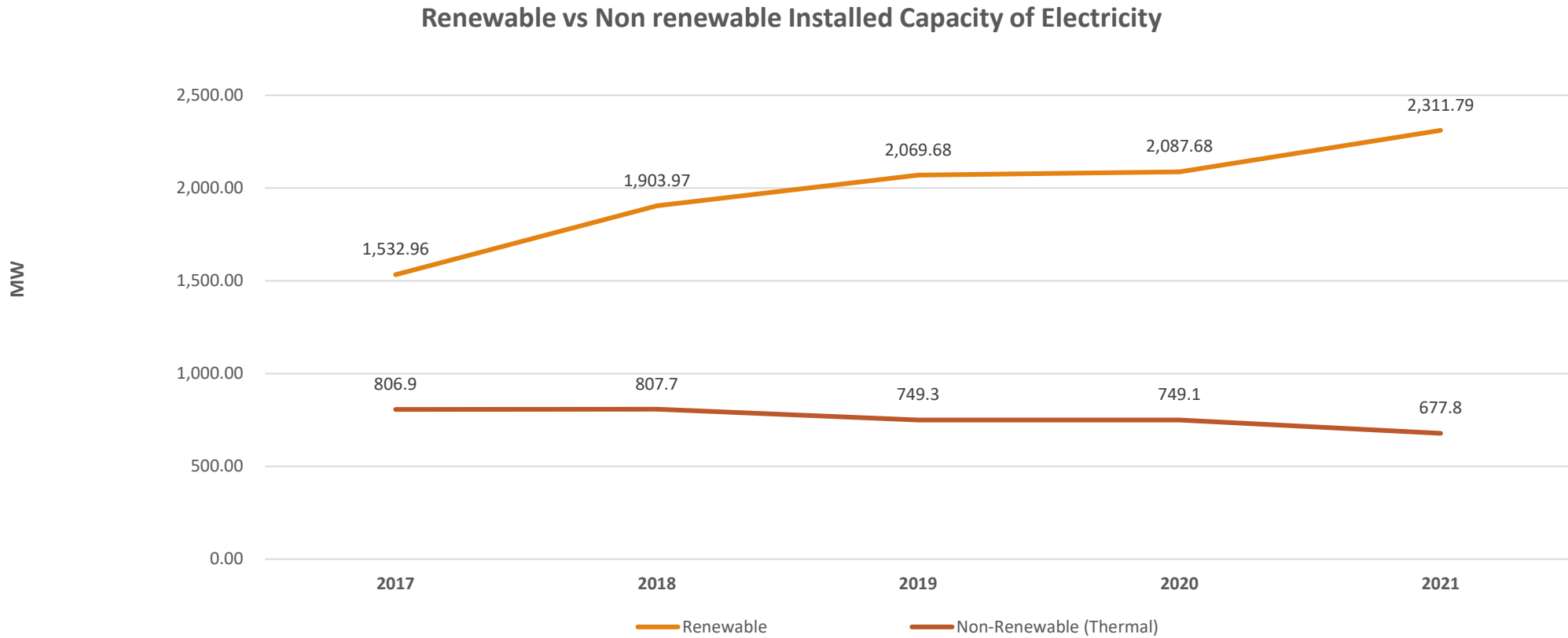


Quick Statistics (Economic Survey, 2022):





Quick Statistics (Economic Survey, 2022):



Electricity generation from renewable sources has been on a steady increase. Currently at 87.5 per cent



Quick Statistics (Economic Survey, 2022):

**Physical
Energy Use
Table,
2022**

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Challenges in Data Collection

- Bioenergy Data is currently considered “informal” in official statistics and is collected using Adhoc censuses/surveys. **It is too important in Kenya to ignore.**
- There is no existing official statistics that link Bioenergy to health, education or other sectors. Though it is widely known that most education facilities in the country use firewood/charcoal/biogas (though some use improved cookstoves/jikos)
- There is no way of knowing generation (annual?) of licensed captive power and private mini grids in the country
- Staffing levels
- Financial Constraints



Way forward in Data Collection

- Consistent (maybe annual) extensive data collection on "informal energy uses in the country by both industries, institutions and households that capture/linkages to other sectors of the economy, most notably the environment
- Need to track emerging energy sources (generation and uses)
- **More....**





Thank you!

Sincerely,
Future Generations