

Kitui County Electricity Access and Clean Cooking Profile

Top opportunities for eCooking in Kitui County

- Leverage the political goodwill and networks to foster partnerships and collaborations:** There is an opportunity for collaboration between the clean cooking sector, electrification, and the county governments to ensure synergies in rolling out clean cooking solutions to bridge the gap between the clean cooking sector and county-level policy frameworks and development plans.
- Financing Models:** Finance remains one of the most important factors influencing the wide-scale adoption of eCooking due to the high upfront cost of energy-efficient eCooking appliances (3,000-15000 KES). Financing models such as pay-as-you-go, merry-go-round; chamas; table banking and micro-finance) could be explored.
- Off-Grid Connection** - Kitui is largely rural and not well connected (54%) which has impacted the adoption of eCooking in the county. However, KETRACO recently announced the installation of a more stable and reliable power supply in Kitui county and its sub-counties. Alternatively, households could use battery-supported electric cooking devices, both grid-connected and solar powered for off-grid.

Current Energy mix in Kitui County

- Unrealized potential for eCooking¹: 613,541 people.
- 0% cooking primarily with electricity, with 54% connected to the grid or off-grid electricity (Ministry of Energy and CCAK, 2019).

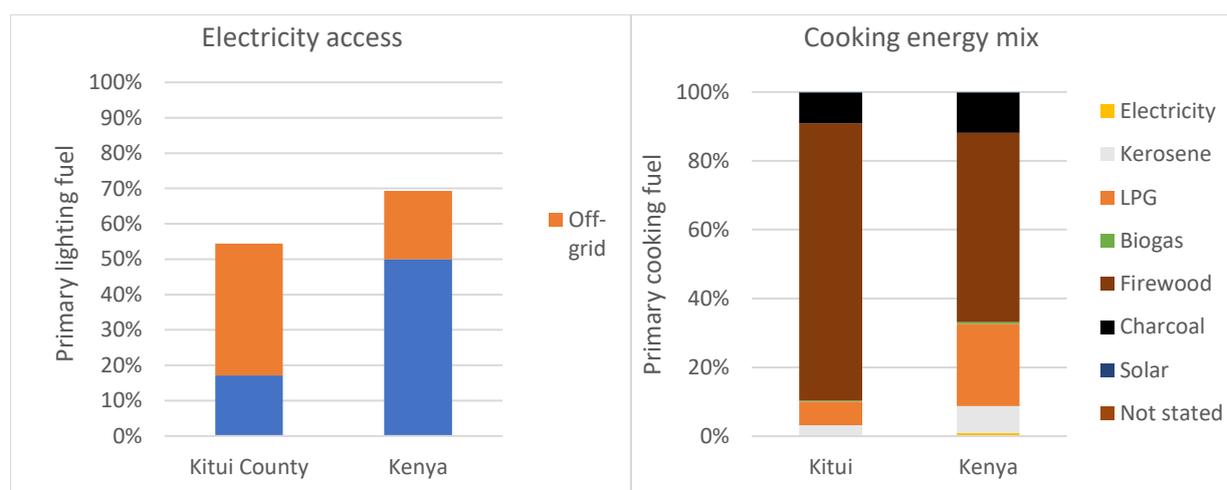


Figure 1: *Electricity Access and Cooking Energy mix in Kitui*; (Source: Kenya National Bureau of Statistics, 2020)

¹ Number of people with access to electricity but still primarily cooking with other fuels.

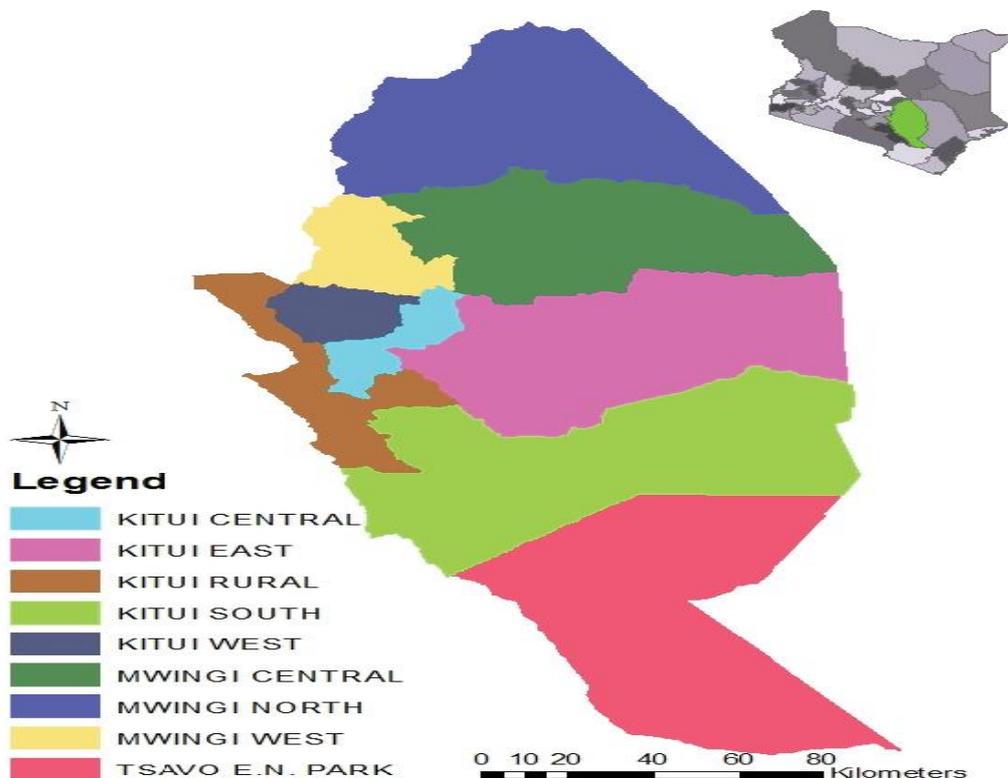


Figure 2: Kitui County Map

Background

Kitui County is the 6th largest county in Kenya among the 47 counties. It is located about 160km east of Nairobi City and covers an area of 30,496.4 km² (County Government of Kitui, 2018). It has 8 sub-counties namely, Kitui Central, Kitui West, Kitui East, Kitui South, Kitui Rural, Mwingi North, Mwingi Central, and Mwingi West which are further divided up into 40 wards.

Kitui County has a total population of 1,136,187, out of which 549,003 are male,

587,151 female, and intersex 33. It has over 262 ,942 households and is among the Arid and Semi-Arid (ASAL) counties categorized by relatively high levels of poverty. The poverty levels are estimated at 63.1% compared to the national average of 45.9% in 2019 (Kenya National Bureau of Statistics, 2020). Kitui county forms part of the proposed Vision 2030 Metropolitan region of Kitui-Mwingi-Meru though has not joined any regional economic block. See figure 2 of Kitui County Map.

E-COOKING OPPORTUNITIES AND BARRIERS

Cooking and electrification landscape

With an estimated 70 percent access rate, Kenya is on the verge of achieving universal access to electricity. The concerted government policy could help reach this goal through the grid and stand-alone connections in equal measure. Kenya has made noteworthy progress in installing renewables in large part because it has successfully attracted the necessary private investment for renewables projects. Further development of these resources would help it meet demand growth.

In Kitui County 54 percent of households have electricity access, 17.1 percent are connected to the grid, and 37.3 percent are connected to off-grid systems (figure 1). The electricity connection has improved over the past 5 years.

The core sources of energy in Kitui county are wood fuel, which is mainly in the form of firewood particularly within rural areas while in urban centers it is sold and used as charcoal. There are other Petroleum products such as kerosene/paraffin, liquefied petroleum gas (LPG), motor gasoline, diesel oil, fuel oil, and electricity.

Other alternative sources of energy include solar power, biogas, and wind power.

About 82 percent of households in Kitui use firewood for cooking compared to the national average of 55 percent. The use of Liquefied Petroleum Gas (LPG), Kerosene, and charcoal for cooking is relatively low in the County compared to the national average.

The level of energy access in the rural areas is significantly low (below 1%). Access to affordable energy services is an essential requirement for achieving social and economic growth and poverty reduction. The Rural Electrification Programme must be extended to more areas in the County to cover more wards. There is a need for Kitui county to embrace renewable energy in its strategies as this will improve energy access to most households within the County. Solar, wind power, biogas, biofuel, and sustainable biomass, have great potential to be exploited since the county's climate is windy and hot all through the year. The government has recently made commitments to support the Rural Electrification Programme and the uptake of energy efficiency measures in households in Kitui County.

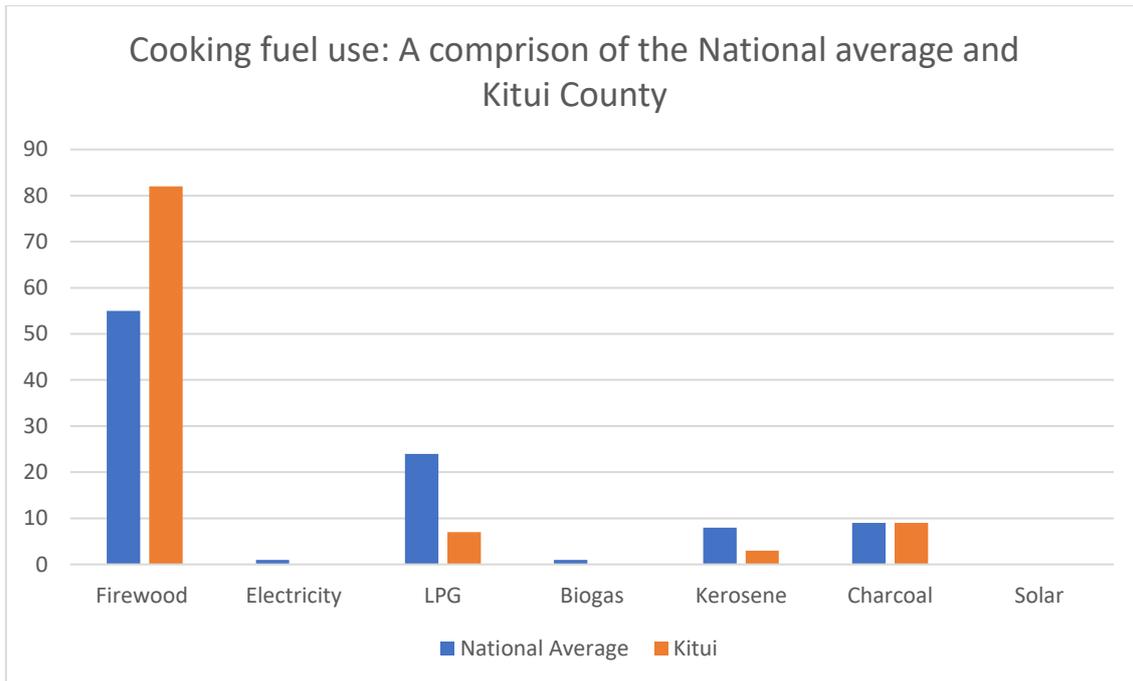


Figure 3: Cooking fuel use: A comparison of the National Average and Kitui County
Source: (KPHC, 2019)

Policy landscape

The county government is expected to have a significant influence on the energy sector, mainly because the devolved units of government have a fairer chance at rectifying previous economic imbalances brought about by the centralized method of planning. Counties will hence have a role and obligation to institute structures that safeguard progress in a wide range of sectors, including energy, environment, and health.

Kitui County's Country Energy Outlook for 2017 highlights various openings such as raising awareness of clean energy products and services; improving technical skills (e.g., the installation of biogas or making of biomass briquettes for household and institutional use); and deploying improved

cookstoves that take into consideration the socio-economic realities of the communities to create greater demand for clean cooking and clean energy solutions. The county energy outlook continues to highlight that suitability/ease of use can be improved by ensuring that basic technical skills, training in addition to improving the design of improved cookstoves and other ICS by integrating feedback from households, and particularly from women on aspects such as the kind of food cooked, regularity of cooking and other lighting or heating demands (County Government of Kitui, 2017).

Kitui County Charcoal Management Act (County Government of Kitui, 2014) aims to regulate and manage the production, use, and trade of charcoal in Kitui County. The goal of the Act is to encourage the sustainable use, conservation, and

management of forests and trees; to promote the participation of the communities, private sector, and other stakeholders in forest management to conserve water catchment areas; to promote dryland forestry to produce wood fuel, charcoal, and non-wood forest products; to promote forest extension to enable farmers and other forest stakeholders to benefit from forest management approaches and technologies; and lastly to promote climate change adaptation and mitigation efforts.

The county government through the governor's office has allocated a budget of 100million Kenya shillings (1million USD) in the county integrated development plan for 2018-2022 (CIDP) to support clean cooking programs. This policy measure aims to promote and train the local communities and women groups on the installation of clean cookstoves (GROOTS Kenya, 2019). Notably, more needs to be done to ensure sustainable energy access and cooking solutions for all. To inhibit the use of unclean fuels, the county government in 2018 banned charcoal burning, sale, and transport in the county (GROOTS Kenya, 2019). This policy measure offers an opportunity for the county to transition to cleaner energy solutions.

In the previous County Integrated Development Plan (CIDP) 2013-2017 just as in the new county integrated development plan 2018-2022 clean cooking has not been spotlighted as much. This presents a great opportunity for stakeholders in the energy space to influence and provide evidence on policies and actions that can inform the county's energy policy. The county has already passed laws governing the production, use, and trade of biomass-based energy (County Government of Kitui, 2018). However, additional action is needed to guarantee the implementation, and development of a broader policy to support clean energy. The county was among the first counties in Kenya to develop its energy master plan in 2018 through a collaboration between the County Government of Kitui, Netfund, Caritas Kitui, Groots Kenya, and CAFOD.

Table 1: Summary of the Energy Policy of Kitui County

Policy	Plan and policies description
Kitui County Integrated Development Plan 2018-2022	This policy measure aims to promote and train the local communities and women groups on the installation of clean cookstoves
Kitui County's Country Energy Outlook for 2017	Highlights various openings such as raising awareness of clean energy products and services; improving technical skills (e.g. the installation of biogas or making of biomass briquettes for household and institutional use); and deploying improved cookstoves that take into consideration the socio-economic realities of the communities to create greater demand for clean cooking and clean energy solutions.
Kitui County Energy Master Plan 2018	Aimed at exploiting its natural resources such as solar energy, and renewable energy to support the adoption of green energy in the County and boost income-generating opportunities for its residents. The county energy master plan was developed through the support of IIED , the Catholic Agency for Overseas Development(CAFOD), Caritas Kitui, and other partners using the 'Energy Delivery Model' approach (EDM process).
Kitui County Charcoal Management Act, 2014	This Act regulates and manages the production, use, and trade of charcoal in Kitui County. through this Act, the County Charcoal Management Committee was formed.

Market landscape for e-cooking

Through the efforts of both the County government and non-governmental organizations (NGOs) or community-based organizations (CBOs), Kitui county has had an opportunity to explore various initiatives geared toward promoting clean cooking and electrification. There exist several initiatives and interventions by both the government and the private sector as discussed in the next section that offers an opportunity for clean cooking and electrification acceleration within the County.

Many public and private interventions are currently promoting clean cooking for instance the improved cookstoves (ICS)-the low-emission ceramic "Jikokoa" cookstoves that enable households to use biomass much more efficiently. A few of the latest models are now incorporating a USB power outlet that can be used to charge mobile phones and other USB devices using the heat produced during cooking. However, the cost of these improved cookstoves remains out of reach for many poor households. However, the current cost of more improved stoves on the market is around US\$ 75 (7500 kshs), which is approximately four times the cost of simpler cookstoves.

Recently Kenya Electricity Transmission Company (KETRACO) announced that they will be installing a more stable and reliable power supply in Kitui county and its sub-counties following the energization of the 132kV in Mwingi - Kitui transmission line and 132/33kV Kitui substation (KETRACO, 2021). This will be a big boost for the county in terms of reliable connectivity hence increasing the adoption of ecooking in the region which has had constant power outages that have made residents very sceptical about ecooking.

Kitui county is well operated by both international and local commercial banks

Opportunities for eCooking in Kitui County

- **Leverage the political will and networks to foster partnerships and collaborations:** There is an opportunity for collaboration between the clean cooking sector, electrification, and the county governments to ensure synergies in rolling out clean cooking solutions to bridge the gap between the clean cooking sector and county-level policy frameworks and development plans. For instance, Burn Manufacturing, KPLC, and Caritas Kitui, who are already working on clean cooking initiatives could come together and collaborate on initiatives that could continue to accelerate the adoption of clean cooking in Kitui county.

such as Barclays Bank, Equity Bank, Cooperative Bank, Family, National Bank, Post Bank, Kenya Commercial Bank, and K-Rep. The most important microfinance institutions in the County are Faulu Kenya, SMEP, Kenya Women Finance Trust, Bimas, Platinum, and other lending institutions. Additionally, the national government has loaning institutions within the county that funds micro, small and medium enterprise and has played a key role in financing the underprivileged population. The existing financing models provide an opportunity for increased access and adoption of clean cooking fuels and electrification.

- **Financing Models:** Finance remains one of the most important factors influencing the wide-scale adoption of clean cooking energy and electric cooking due to the high upfront cost of improved cookstoves and the electric pressure cookers (3,000-15000 KES). There is an opportunity to tap into the investment in sectors such as the electrification sector to bring in resources that support clean cooking specifically e-cooking). Financing models such as pay-as-you-Go (PAYGO model) and other financing models (Merry-go-round; chamas; table banking and micro-finance) could be explored. Burn Manufacturing is already implementing this in Nairobi County.
- **Grid stability and off-grid eCooking:** Kitui is largely rural and not well connected (54%) which has impacted the adoption of ecooking in the county.

However, there could be an opportunity for the clean cooking sector in the region after the recent announcement by KETRACO on the installation of a more stable and reliable power supply in Kitui county and its sub-counties [8]. Alternatively, off-grid households could use battery-supported electric cooking devices, both solar and grid-connected. Sustainable Community Development

services Kenya (SCODE) is currently piloting the same in Nakuru County.

- **Capacity building and awareness-** There is a greater need for increased public awareness and sensitization **campaigns** on the impacts of using unclean cooking fuels and technologies. There is an opportunity for stakeholders in the energy space to influence and provide evidence on policies and actions that can inform the county's energy policy

Further Reading

County Government of Kitui (2014) *Kitui County Charcoal Management Act*.

County Government of Kitui (2017) *Kitui County Energy Outlook*. Kitui.

County Government of Kitui (2018) *Kitui County Integrated Development Plan (2018-2022)*. Kitui.

GROOTS Kenya (2019) *Linking Energy, Health and Sustainable Livelihoods: Policy Options for Scaling Up Improved Cooking Solutions in Kitui County of Kenya*. Kitui.

Kenya National Bureau of Statistics (2020) *Kenya Population and Housing Census, Volume IV: Distribution of Population by Socioeconomic Characteristics*. Nairobi.

KETRACO (2021) 'Sigh of relief as Kitui

and its environs receive a boost in power supply', *Ketraco*, 7 April.

Available at:

<https://www.ketraco.co.ke/information-center/media-center/news/sigh-relief-kitui-and-its-environs-receive-boost-power-supply>.

Ministry of Energy and CCAK (2019) *Kenya Household Cooking Sector Study: Assessment of the Supply and Demand of Cooking Solutions at the Household Level*. Nairobi. Available at: <https://eedadvisory.com/wp-content/uploads/2020/09/MoE-2019-Kenya-Cooking-Sector-Study-compressed.pdf> (Accessed: 26 May 2022).