

PRES
(Peri-urban and Rural Energy Services)
in Ethiopia, Kenya and Uganda

Kenya Country Report

The Shell Foundation
Sustainable Energy Programme (SEP)

An “Increasing Access” Project

Kenya Country Report

In general, the team has found that Kenya's commercial household energy sector is well-developed, with working linkages between urban suppliers and rural outlets. All 8 of the companies surveyed had impressive distribution networks which could be used for supply of modern energy to HHs. The company with the most outlets has a total of 220 spread all over the country. Another company has 8 outlets in major towns and 350 distributors spread all over the country. Yet another has 33 outlets spread across the country. And a fourth has 12 franchise-type outlets and works with about 100 distributors.

F.1 Survey targets

F.1.1 List of companies/organisations for high-level surveys

Initially the surveys targeted more than ten companies viz:

- 5 major oil companies- Shell/BP, Caltex, Mobil, Total, Kenol/Kobil;
- Toyota Kenya,
- Nakumatt – a supermarket chain,
- Chloride Exide,
- Amedo Centre – Higher Purchase Company,
- Sollatek and
- International Research Network (IRN) - a marketing research organization

Toyota Kenya and Nakumatt declined to participate in the surveys, whereas the contact at IRN proved too busy hence was not interviewed.

Therefore discussions were held between managing directors or their representatives of eight companies.

F.2 Fieldwork planning

F.2.1 Which areas and why

Three regions were pre-selected for field survey. These are Mt. Kenya region, North Rift Valley and Western Kenya. Company chief executives recommended these regions since they have shown high sales volumes for petroleum products, as well as other products. The areas are thus well served with commercial outlets right into the rural interior. In addition the regions contrast variously in the sense that Mt. Kenya is dominated by very enterprising small-scale cash crop farmers whilst Western region by smallholder subsistence farmers and North Rift small to large-scale cereal farmers.

Mt. Kenya region is home to over five million people. The study concentrated in Meru districts between Chuka and Maua towns. These two towns lie about 100 km apart Chuka to the South and Maua to the North, and are dominated by cash crop farmers, chiefly coffee and tea farmers respectively. The uptake of renewable energy services and products (solar electricity) in this region is relatively high and is demand driven rather than NGO and donor.

Western survey concentrated on Kisumu and Kakamega towns. These two towns lie about 50 kilometres apart. Kisumu is the third largest town in Kenya and serves a large catchment area. Kakamega on the other hand is the provincial headquarters of western province and serves largely sugarcane farmers. Along Kisumu – Kakamega road are a number of service stations, which serve mostly smallholder subsistence farmers. These service stations and their catchment were targeted for surveys.

Rift Valley Region is also referred as the breadbasket of Kenya. Over 70% of the maize and wheat grown in Kenya are produced in this region. The towns targeted for surveys were Eldoret

and Kitale. These towns are about 65 kilometres apart. Eldoret is the fifth largest town and is one of the fastest growing, Kitale on the other hand boast of harbouring huge tracts of land of maize for absentee landlords.

F.2.2 Logistics - plans, practicalities, and difficulties encountered, how they were overcome.

Surveys were planned in such a way that a field supervisor made advance visit to the region to identify and select suitable enumerators. Once identified enumerators were trained. Training involved a half days discussion on the purpose of the interview, familiarizing with the questionnaires and an afternoon practical study, where trainees went to the field and tested the questionnaires. In the evening the supervisors went through the filled questionnaires and made necessary corrections with the enumerators.

The difficulties encountered were:

- Suspicion posed by respondents, generally these suspicion were of political and religious kind. The motives of the questionnaires and the whole exercise coming at a time when the country is highly politicised due to succession issues did not help especially in Rift Valley region. To convince such a respondent was a bit difficult.
- Household interviews were carried out mostly during weekdays. These coincided with farmers work schedules and convincing a farmer to leave their work in order to be interviewed was a bit of a problem. In a situation where the would be respondent flatly refused to be interviewed it meant that the enumerator has to walk again to the next respondent
- There were other difficulties such as rains, impassable roads and walking long distances, which made the interviews, drag on for a longer period than anticipated.

F.3 Preliminary survey findings

F.3.1 High-level

The eight company executives interviewed all expressed interest in the project but had different expectations. Of the eight companies five were international and three locally owned. All had an impressive distribution network in the peri-urban and rural areas of Kenya. The total number of outlets of the eight companies was 645 networks. Shell/BP have the highest number, which are 220 outlets. Generally Shell/BP, Chloride Exide and Amedo centre were the most enthusiastic and assigned persons at the headquarters to assist in contacting their outlets to inform them of the project and the impending surveys. Although other companies expressed interest they were unwilling to go an extra mile and inform their outlets of our interviews.

Company experience with household energy and renewable products. All of the companies interviewed were actively engaged in marketing and selling at least one type of HH energy product. The most active existing markets are for

- kerosene (383700 tonnes, 2000, valued at almost US\$ 200M on a retail basis) and kerosene appliances,
- LPG gas (33400 tonnes in 2000 is worth over 30 million dollars on a retail trade basis) and cylinders (700,000 bottles on market in 2000),
- solar PV and batteries for household lighting and TV (greater than US\$8M per year)
- 12VDC and 240VAC electric appliances such as black and white TV's, lamps, and cassette players.

All of the petrol companies have entered the LPG market and are actively selling kerosene as a fuel to rural people. LPG sales have been growing steadily in Kenya, and all of the companies are seeking to capitalise on the growing market (although some have been more successful than others). The trend is towards smaller and smaller sized gas bottles (3 kg is the smallest

available now) and also towards bundling an appliance (cooker/light) into the purchase price of the equipment.

The three non-petrol trading companies studied are all actively involved in sales of PV and PV system components. One of them (the hire-purchase dealer) sells appliances and household amenities as well as PV. At least one oil company had previously marketed solar products (PV and SWH's in the early 90's), but the market had been difficult for them to serve, so they sold off the business.

There is a trend towards smaller, lower cost products in both the PV and LPG sector.

Improved charcoal and wood stoves and institutional stoves did not figure prominently in this study as they are less available through the "formal" trading sector. They tend to move in the informal sector at lower costs and prices. However, this is changing. The Kenya Ceramic Jiko is available in supermarkets and shops as a value added retail product.

Marketing programmes and priorities. Reaching rural markets is a priority of all companies surveyed. Kenya companies have sophisticated marketing programmes which use organised launches, newspaper, radio, point of sale demo.

To reach outside of Nairobi, many companies advertise on KBC (the national radio station and only one which reaches deep into rural areas) or others such as Kameme --- which reach into specific rural areas.

Successful LPG promoters said that demonstrations and road shows enabled them to move quickly into the market with smaller canisters and cookers --- and to allay consumer fear of the technology. This tactic has also been successful with the "Super Money Maker", a micro-irrigation pump marketed by ApproTEC (a local NGO).

Solar PV promoters said that newspaper advertising, radio and demonstration (i.e. in shops and in agricultural fairs) were the most efficient marketing tools.

The hire purchase company uses radio, TV, ads/posters and radio (KBC) to reach the rural people. Additionally, the company uses door to door sales people who work on commission basis to reach their market.

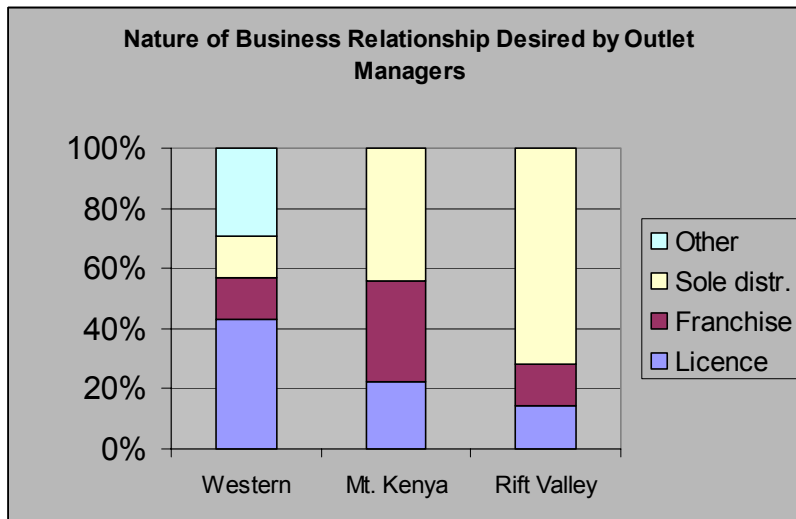
Limiting factor for business growth: Finance was listed as major limit by all of the players concerned. To overcome this, most of companies interviewed were engaged in some type of hire purchase or credit activity to increase their sales. For example, 3 petroleum companies were selling LPG cooker-cylinders through targeted SACCOs or company debit systems (i.e. large companies such as Coca Cola company, Kenya Bus Service, Bamburi, tea societies, etc.). The battery distributor has entered into credit arrangements with a major Kenyan bank to provide financed PV systems and also deals with a hire-purchase company on an exclusive basis.

Awareness of products was also cited as a constraint to growth of the market. For example, one barrier to the expansion of the LPG gas market is consumer fear that their canisters are "unsafe". With PV, the distributors mentioned that some areas of the country have a better knowledge of the technology than others.

F.3.2 Commercial outlet questionnaires

A total of 23 commercial outlets were interviewed, seven in western Kenya, nine in Mt. Kenya and seven in Rift Valley regions. Permission was sought from the "head office" of each of the outlets before. Most of the companies were quite interested in cooperating with the survey team, and were interested in seeing the outcome of the project.

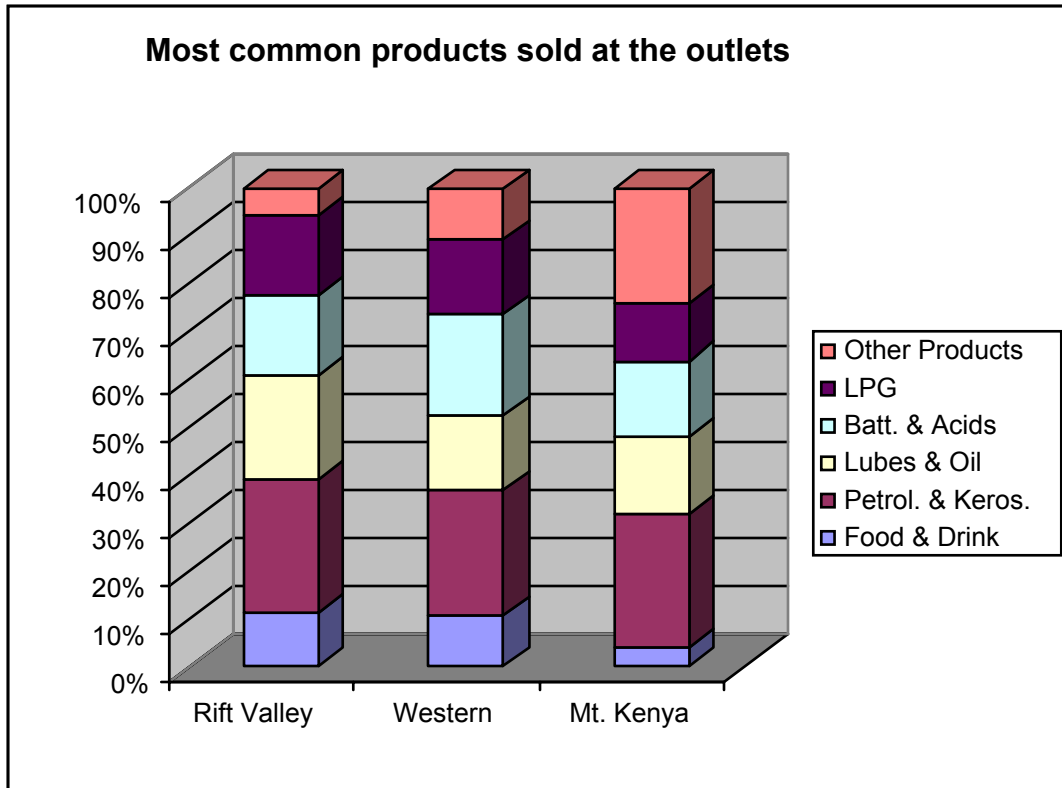
Interest in diversifying into more energy products. All the outlets (distributors??) interviewed were interested in diversifying their business to include more modern energy equipment and services. At issue was the type of arrangement or business model that should be put in place. The commercial outlet questionnaires determined that 29 percent of respondents favoured a licence agreement (individual ownership), 24 percent a franchise, 47 percent sole distributorship and 29 percent other arrangement (this include those who referred us to their head office). Those managers who had a franchise agreement with oil companies but owned the land where the business was operating mostly favoured sole distributorship.



The graph above shows the nature of business relationship desired by managers in each of the regions surveyed. In western Kenya majority (43%) preferred licence agreement, whilst in Rift Valley and Mt. Kenya region sole distributorship were preferred 71% and 57% respectively.

In terms of nature of occupancy of business premises over 65 percent rented whilst about 34 percent owned the land where the business premises were.

The most common products sold at the petrol service stations were petroleum and Kerosene, Lubricants and oils, Battery and acids, LPGs, foods and drinks. Other products include solar panels, etc. The percentage contribution of each product is shown in the graph below.



Batteries and kerosene were listed by over 50% of the outlets as among products experiencing fastest growth. All the outlets' manager were willing to expand and diversify their product range. Modern energy products especially solar panels and LPG were preferred by over 60 percent of the outlets as products that would move due to improving demand.

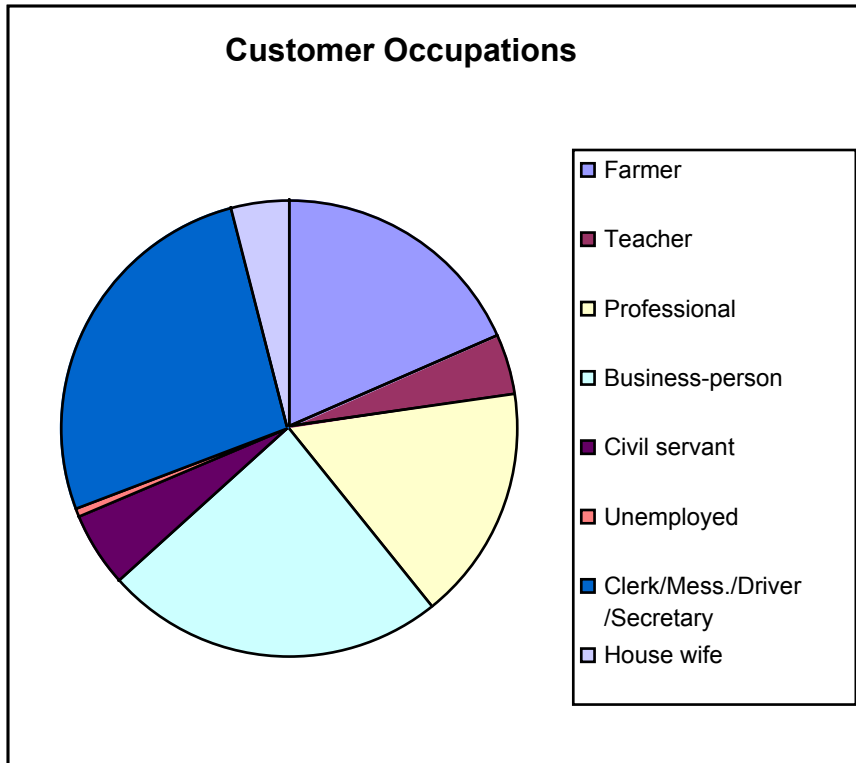
Over 80 percent of the outlets served customers within a radius of 1 to over 20 kilometres, transit customers made up to less than 20 percent of the outlets.

The methods employed for advertisement was mostly in store promotions and word of mouth which accounted for 20 to 45 percent of new business according to region.

F.3.3 Tally

Simple tally-type questionnaires were administered randomly in petrol stations to get an idea of the needs and characteristics of people who visit these stations. A total of 170 tally questionnaires were filled in Rift Valley, Western and Mt. Kenya Region. There were a number of interesting findings from the survey, as detailed below.

Profile of Customers

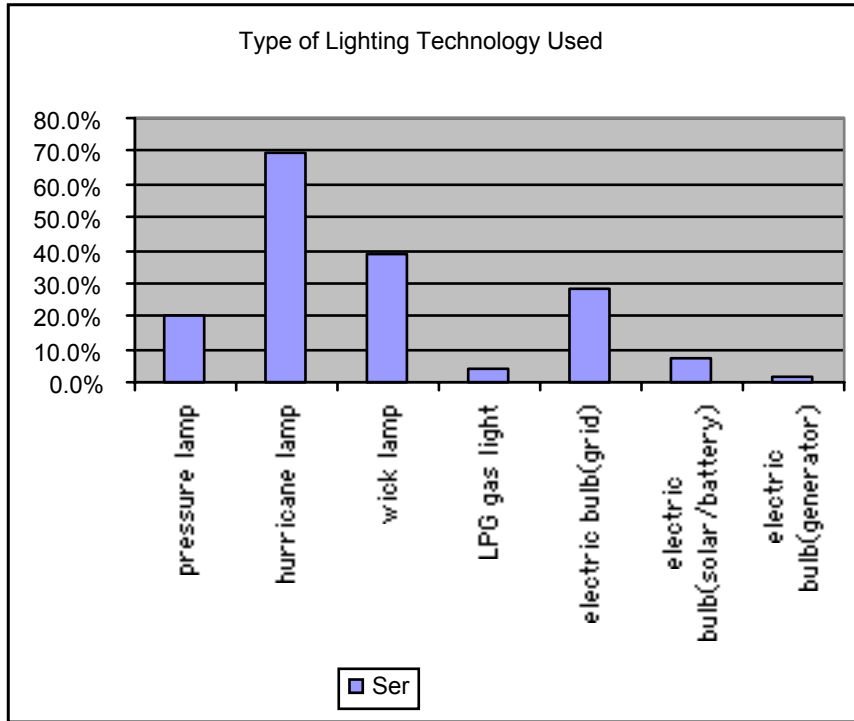


As can be seen from Figure [], visitors to the station were primarily drivers/clerks, business people, professionals and farmers.

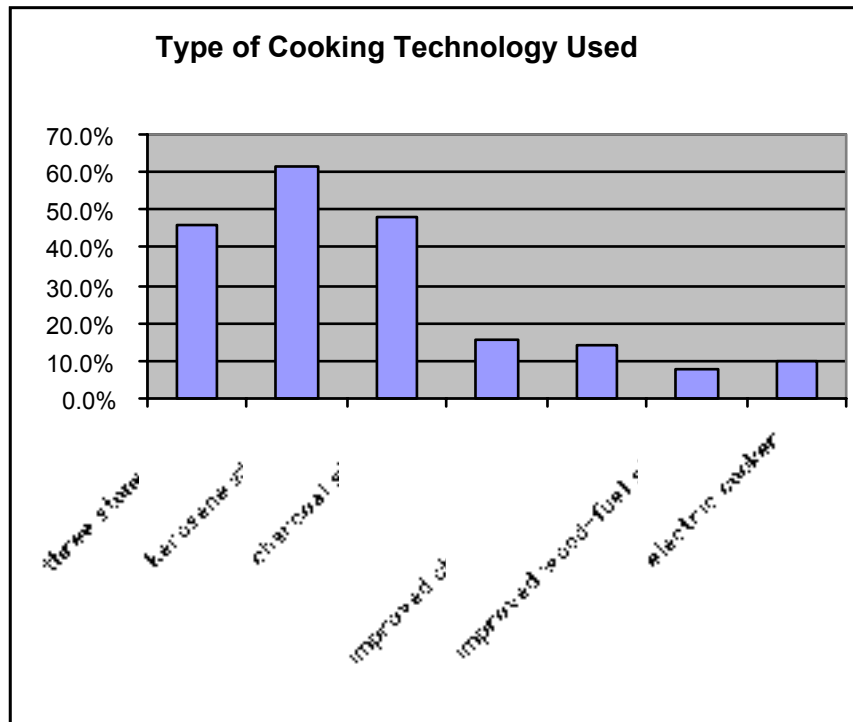
- 61% of the visitors came on personal business
- Bicycle (24.4%), foot (18.7%), and personal cars (18.7%) were the most common methods of getting to the station.
- About half (48.8%) of the customers came from less than 5 km away, and another 22.7% came from within 10km.
- 77% of the customers said they visit the station at least 2 times a week.
- 42.7% said they spent less than Kshs 100 on that trip. 30% spent more than Kshs 500.
- All (100%) of the customers came for some type of automotive or fuel need, with automotive fuel (56%) and household kerosine (37%) making up the majority of transactions. *Only 21% visited the forecourt shop.*

Customer Energy Demands

- 70% of the customers were from off-grid households, and 30% were connected to the grid.
- Kerosene-fueled hurricane lamps, wick lamps, pressure lamps were the major lighting



sources, though grid electricity and solar electric/battery systems are also fairly common. Over 50% of the respondents used at least 2 types of lamps.



- Customers predominately use kerosene and charcoal stoves, as well as three stone fires. However, LPG cookers and improved charcoal stoves are becoming more common. Use of multiple cooking technologies is common.
- Visitors to the stations own a number of amenities and products. The table below shows some of the products that their households own. The prevalence of radios, cassette players and TV's shows the high demand for amenities among this particular sample. Note that the black and white TV ownership is exactly the same as lead acid battery ownership.

Product	% Owned
Radio	84.8%
Cassette player	64.3%
Bicycle	59.1%
Torch	49.1%
Black and white TV	45.0%
Lead acid battery	44.4%
Dairy cow	32.2%
Car	27.5%
Colour TV	21.6%
Well	17.5%
Refrigerator	12.9%
Telephone	11.7%
Motorcycle	10.5%
Solar home system	8.2%
Irrigation pump	5.3%
Cell phone	5.8%

F.3.4 Catchment - House-Hold Surveys

Catchment surveys were conducted with 300 households to get a more detailed picture of household energy demand than the tally survey. They were conducted *in situ* at rural households. The surveys were aimed at active consumers (i.e. the top 20-50% of the population) who would be interested in purchasing energy products. These surveys aimed to find out:

- What technologies households were using
- What technologies they were aware of
- What technologies are currently available to them
- And what they would be willing and able to purchase

To identify HHs for interview, three methods were employed. These methods were deliberately biased towards middle class households. These data is therefore not representative of all households in Kenya but represents the class of households that would buy modern energy products. The method employed was:

- Tally survey at petrol stations and other outlets – respondents were asked specific questions and whether they could be interviewed at home
- Visual appraisal of houses – homesteads next to the road had high priority and
- Reference by local leaders and other people.

i) Socio-economic Characteristics

The study did not ask people questions about their income, as this would make them suspicious. The questionnaire thus used occupation and type of house as a basic indicator of income.

Occupation and level of Education Household heads

In Mt. Kenya, household heads i.e. “husbands” – were mostly businessmen or engaged in a form of trade, wives engaged in farming and other adults in the house were either unemployed or farmhand. In Western Kenya the predominant occupation of those interviewed were civil servant/teachers, wives engaged in self-employment such as selling farm-produce to the nearest market and other adults in the house were mostly unemployed. In Rift Valley the predominant occupation of respondents was farming . Other adults in the house were unemployed or helped on the farm.

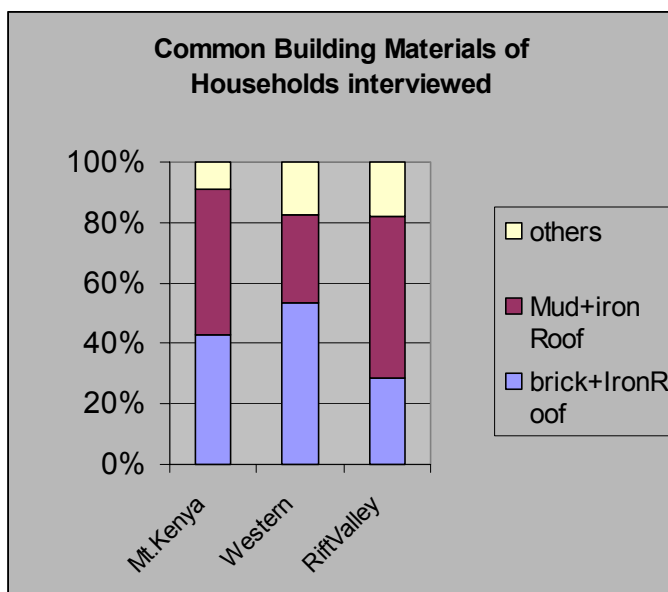
The table below shows the level of education of respondents. More than 70 percent have some education and 24 percent have a college education.

Percentage Level of Education of Heads of Households Surveyed

	Mt. Kenya	Western	Rift Valley	Average
Primary	31.7	17	15	21
Secondary	19.5	23	35	26
College and above	18.3	33	22	24
others (illiterate mostly)	30.5	27	28	29

ii) Type of Household's Covered

The graph below shows the building materials for households interviewed.



More than 35% had four rooms. Average household number for Western Kenya was 6.75; Mt. Kenya 4.8 and Rift Valley 4.6. This brings the total average to 5.38.

Cooking and Lighting Technologies

In order to get information on preferred products the questionnaire sought to find out what energy technologies and services were currently in use. These would act as a basis for understanding what there is and what households (HHs) preferences are. The cooking and lighting technologies queried are listed in the table below.

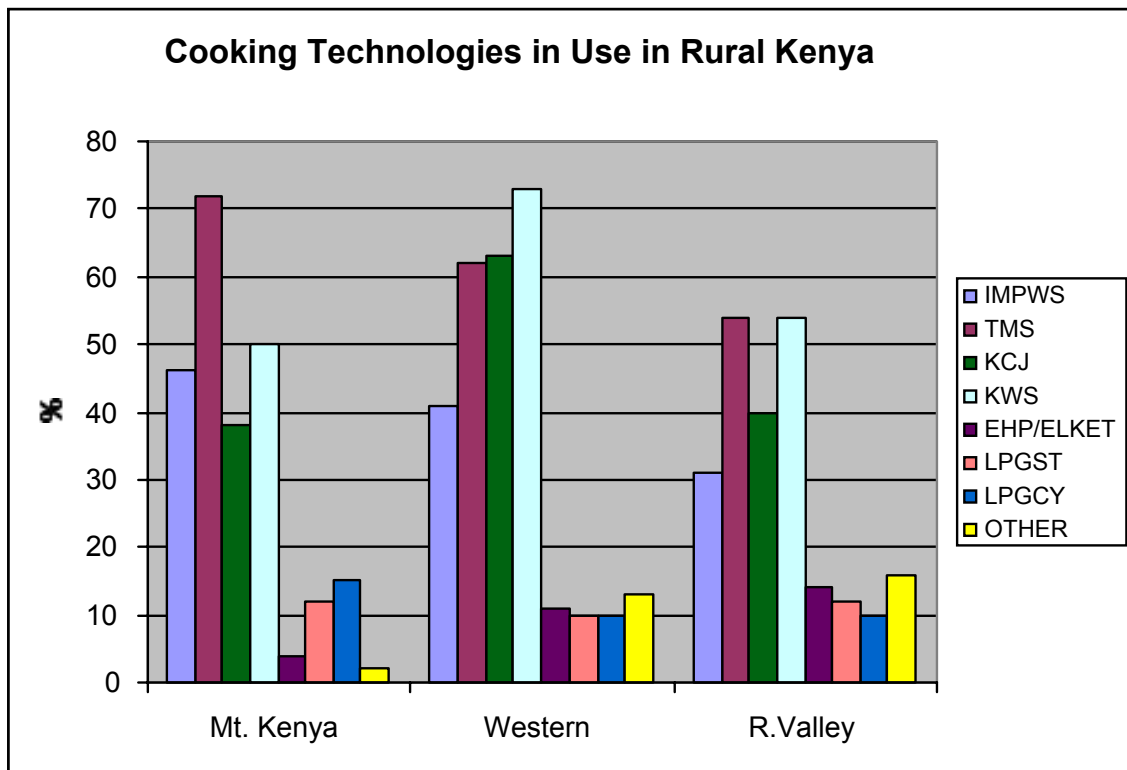
Technology	Fuel	Notes
Open fire (OF)	Wood, ag wastes	"Three stone fire" fall under here
Improved Wood Stove (IMPWS)	Charcoal	
Traditional Metal Stove (TMS)	Charcoal	
Improved Charcoal stove (IMS)	Charcoal	also referred as Kenya Ceramic Jiko (KCJ)
Kerosene Wick stove (KWS)	Kerosene	
Electric Hot Plate (EHP)	Hydro-electricity	
Electric Kettle	Hydro-electricity	
Electric Immersion water heater (EIWH)	Hydro-electricity	
Electric Oven (EO)	Hydroelectricity	
LPG Stove (LPGST)	Gas	
LPG Cylinder (LPGCY)	Gas	
Kerosene Pressure Lamp (KPL)	kerosene	
Kerosene Hurricane Lamp (KHL)	kerosene	
Solar home systems and lanterns	SHS/SOLAN	
Lead acid batteries (LAB)		

Generator	Genset	
Liquified petroleum gas lantern (LPGLAN)	Natural gas	

In Mt. Kenya region the traditional metal stove (TMS) is used by over 70% of households surveyed; in Western Kenya use is over 60% and Rift Valley use is about 55%. Kenya ceramic jiko (KCJ) an improved charcoal saving stove is used by more HHs in western Kenya (over 60% surveyed followed by Rift Valley (40%) and Mt. Kenya 38%. Kerosene wick stove (KWS) is used more in western (73%), followed by Rift Valley (54%) and Mt. Kenya (50%). Despite late introduction (about five years ago), the use of 3 to 6kg liquified petroleum gas stoves (lpgst) are being used by more than 10 percent of HHS interviewed. Mt. Kenya region leads (14% of HHs), whilst western Kenya and Rift Valley is just about 10%. The 3 stone fire is used almost universally by rural households, so it is not shown on the graph.

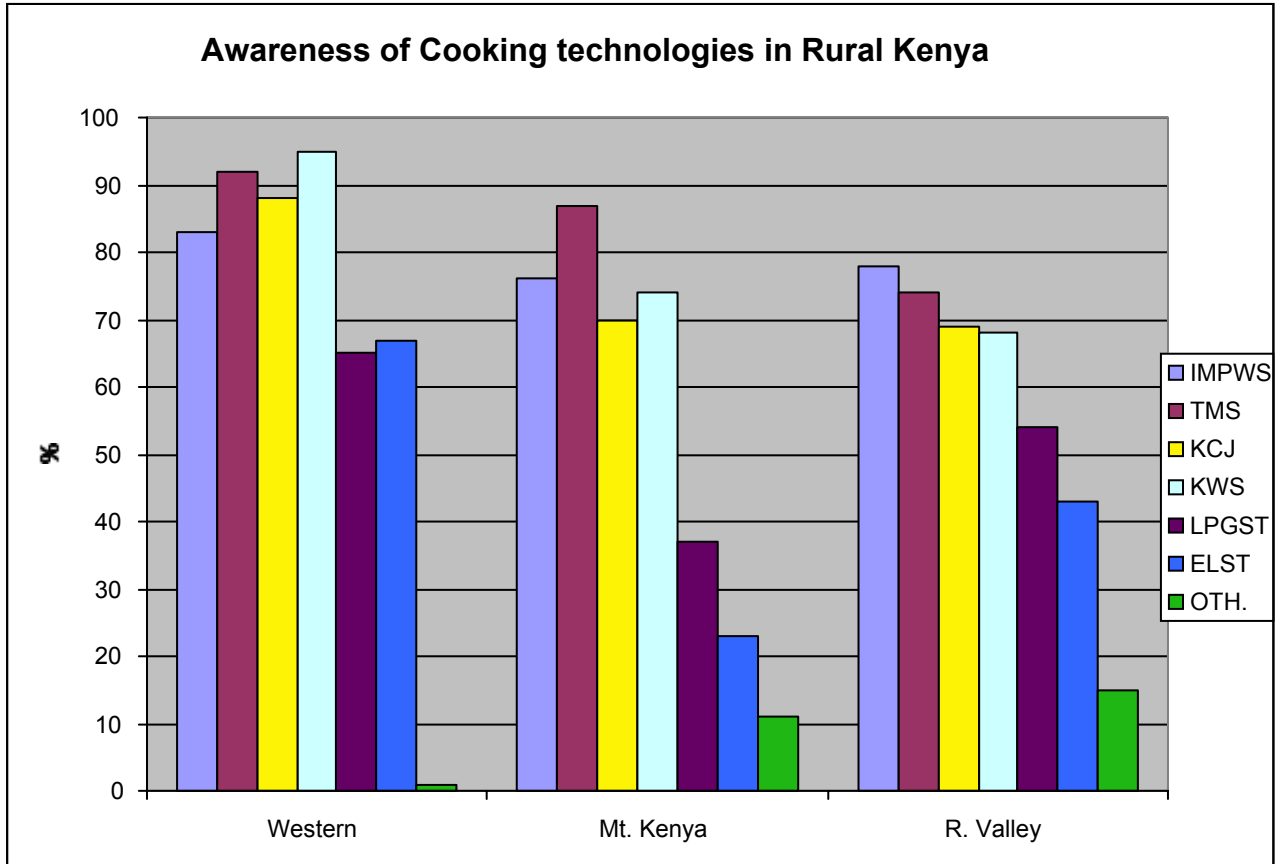
Graph 1 below shows the current energy technologies used for cooking in Kenya.

GRAPH 1



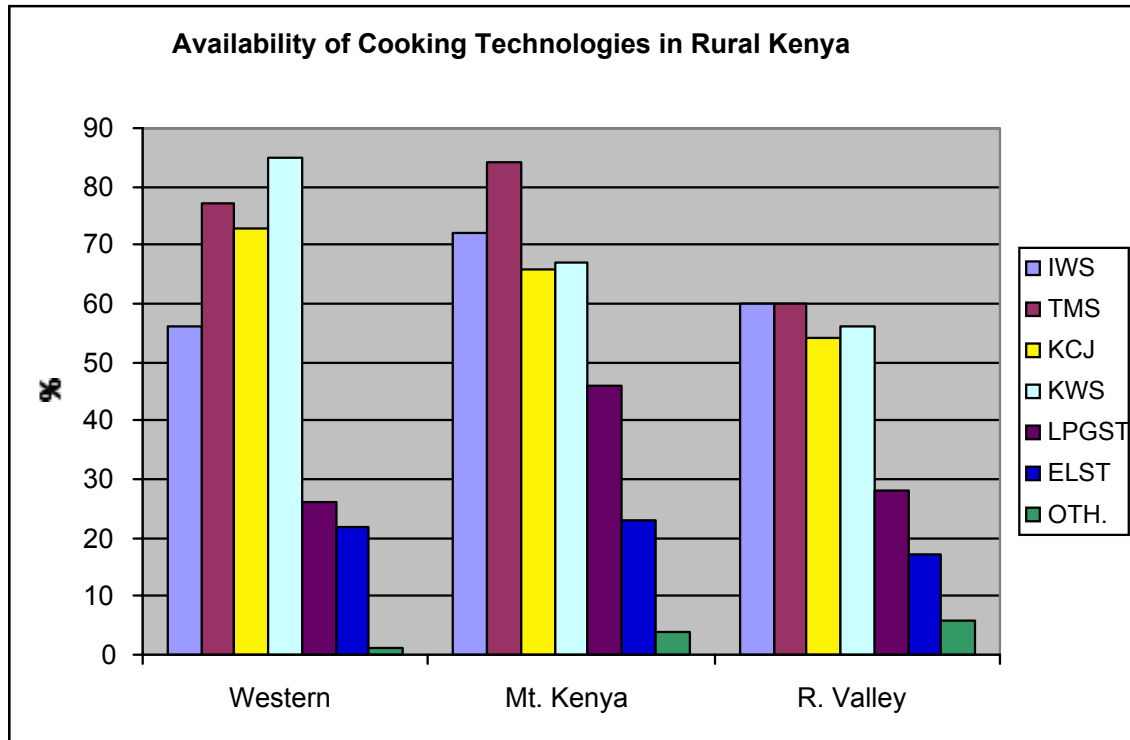
Graph 2 below examines awareness of modern cooking technologies. Western Kenya households are more aware of KCJ (87%), followed by Mt. Kenya 70% and lastly 69% Rift Valley. In terms of LPG stoves, more than 60% in western Kenya are aware compared to 37% in Mt. Kenya and 52% in Rift Valley. This high awareness in western and Rift Valley has not been translated into use and could be attributed to the fact that most HHs interviewed in Western and Rift Valley are headed by a civil servant or a teacher as opposed to Mt. Kenya where mostly farmers headed HHs.

GRAPH 2



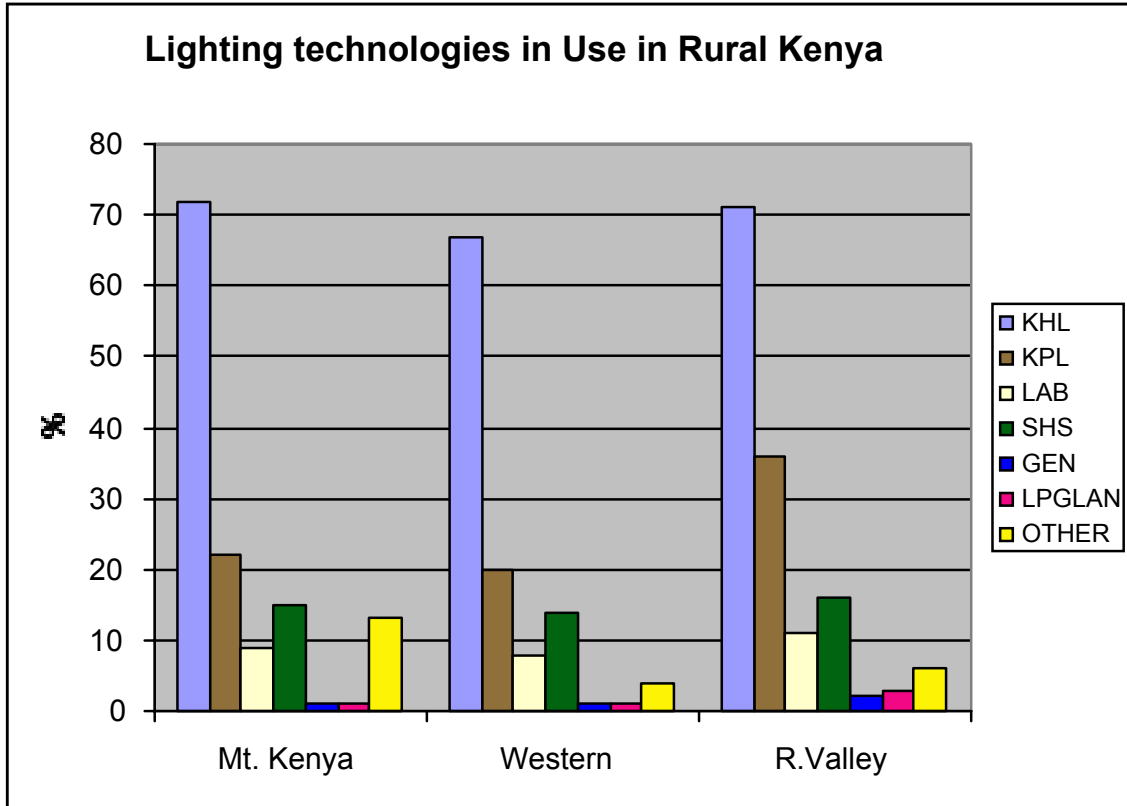
Graph 3 below shows how HHs view the *availability* of various cooking technologies. Over 45% of HHs in Mt. Kenya indicated that LPG stoves are locally available as opposed to 25 percent and 38 percent in Western and Rift Valley respectively.

GRAPH 3



Lighting Technologies

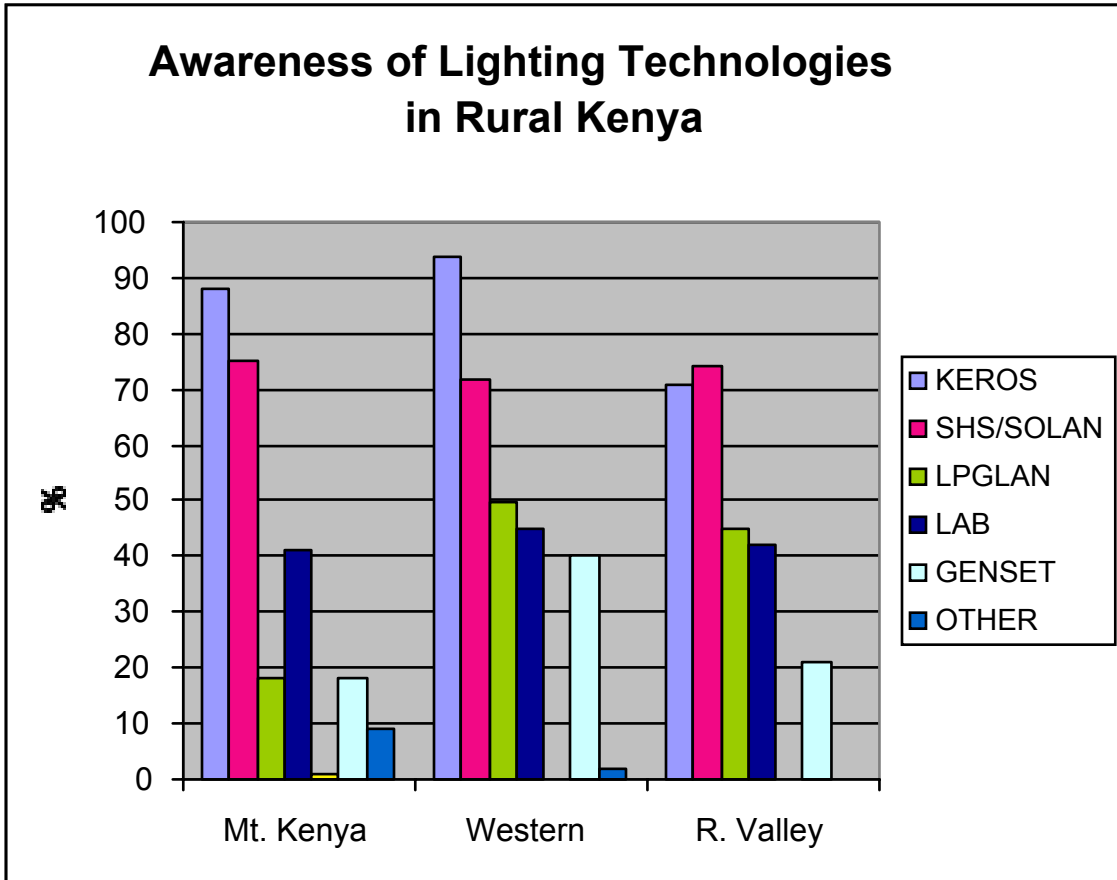
GRAPH 4 shows the lighting technologies in use. As shown, kerosene hurricane lamps (KHL) are the most popular in HHs ranging from 67% in Western Kenya to 71% in Rift Valley and 73% in Mt. Kenya. Pressure lamps are also widely used by the interviewed households with over 20% ownership among the survey groups. Modern lighting systems such as PV solar home system (SHS) have become common; 15% of households interviewed had one installed. 10% of the surveyed HHs own lead acid batteries (LAB) for powering televisions and radios and to a lesser degree for lighting. Note that the catchment survey shows higher ownership of PV systems than the tally, survey, possibly indicating that PV owners visit petrol stations less. Less than 2% of the groups surveyed is using LPG lamps.



GRAPH 4

Other lighting technologies include kerosene wick lamps, which are universal in rural households. Dry cell batteries are used by over 60% of the households for powering radios and torches.

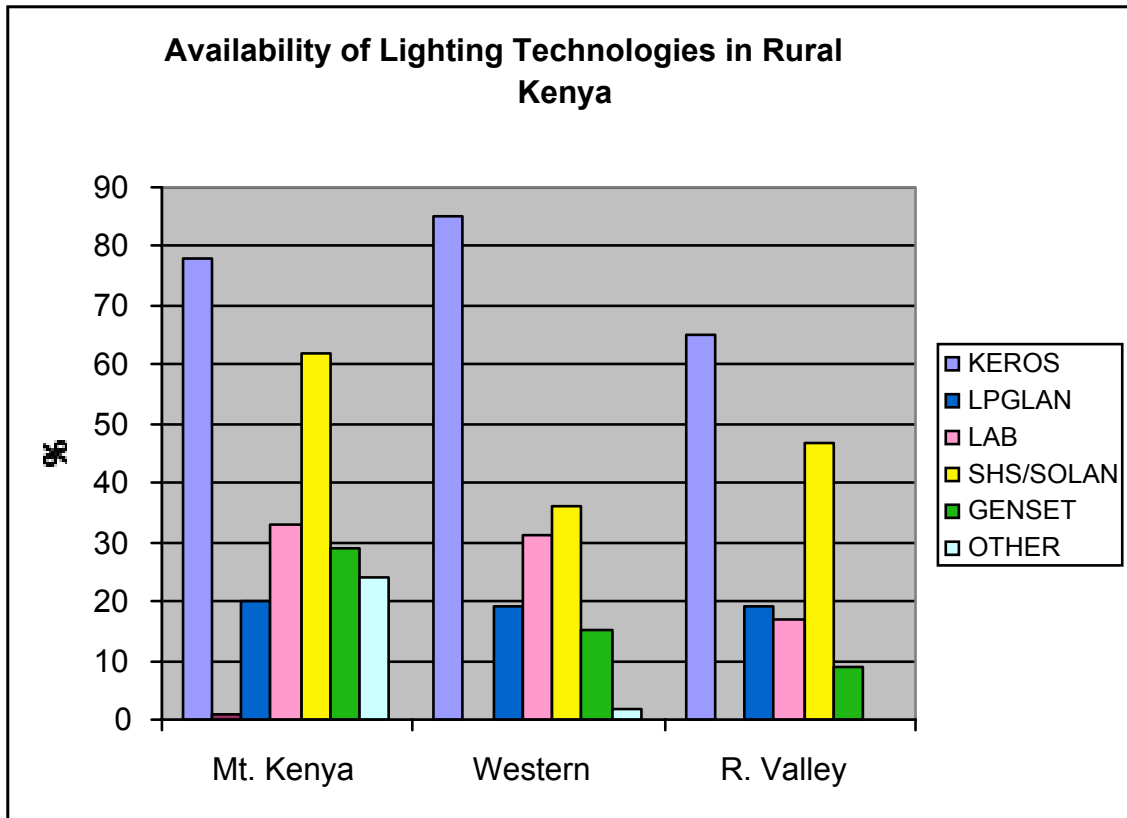
HHs seem to be fully aware of their lighting technologies choices (GRAPH 5). Over 70% of those queried are aware of kerosene and solar lighting technologies. LPG lanterns (LPGLAN) are becoming more well-known due to aggressive marketing by oil companies.



GRAPH 5

Graph 6 below shows the HH views on availability of lighting technologies in their areas. On average, kerosene is the most available (76% said they could easily access it). Solar home systems and lead acid batteries are also seen to be readily available.

GRAPH 6

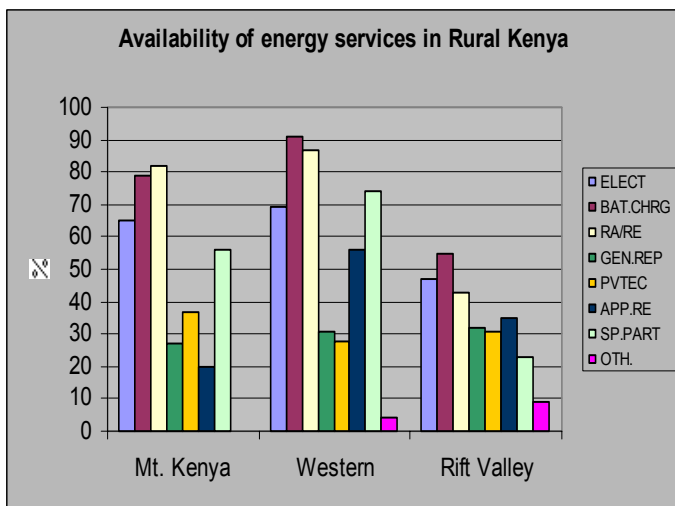


Modern energy services offered

Battery charging is the most popular service, underlining the popularity of the lead acid battery for rural electrification. Radio/radio cassette and electrical appliance services are second to battery charging --- this demonstrates the importance that people place on electrical consumer goods.

Other services include supply of electrical spare parts, generator set repair and PVshs technicians. GRAPH 7 shows availability of these services

GRAPH 7



Market size, willingness and ability to pay and financing options

Outlet managers interviewed had impressive knowledge of the wide variety of modern energy products and services (i.e. solar electricity, liquified petroleum gas, efficient lighting and cooking equipment and biomass based products). They were however doubtful of one thing – rural HHs’s ability to purchase some of the products. With their limited means, they could only provide credit to institutions and approved customers. They said that, for modern energy equipment and service to move, better financing options should be put in place. In addition to this, outlet managers stressed the need for education and creation of awareness on the functioning and maintenance of some energy technologies --- especially solar electricity, LPG stoves and improved institutional stoves --- if these products were to sell.

The catchment and tally surveys documented a sizable market for modern energy. Moreover most of the HHs were willing to learn more about modern energy and concurred on the fact that accessibility and availability besides finance are some of the hindering factors. Many respondents commented on the lack of access to credit facilities and the lack of awareness about modern energy choices.

A survey of the ability and willingness to pay showed that 33 percent of HHs had the ability to pay for modern energy if they were well informed and they were available. On the other hand 77 percent were willing but did not have the ability to pay. Both those with the ability and willingness to pay thought modern energy expensive and some form of credit facilities should be put in place. Buying on higher purchase to provision of soft loan ranked high as options.

Information gaps – risk, concerns, new ideas that need exploring

There is very high demand for modern energy among rural people. The survey has identified several needs of the market.

Finance for Consumers. First and foremost is innovative finance for end-users. Many people are willing to invest in new technologies, but are unable to raise the high up front costs. As much as there are many financial providers in the market, access to them is still a problem. Most HHs would respond to an innovative financial assistance that is sensitive to their income and their needs. Though modern energy is important, basic education for children has a higher priority and many consumers already had loans for school fees.

Credit facilities come with risks and more responsibilities for the energy provider. There is definitely need for more research in this area in order to factor in poverty alleviation aspects, etc.

Intelligent Marketing: The second area that needs attention is the market is improvement of delivery and information channels in the market. Many people are still unaware of the alternatives they have. The heavy-handed selling approach of most of the companies does not foment intelligent consumer choice. Consumers are beginning to have a “choice” but they are not well enough informed to make the choice. For example, many consumers still fear that their LPG canister will explode. Others are not aware of the limitations of their battery and solar PV systems.

Smaller Product Size. Both LPG and solar PV are moving towards smaller and smaller product size. Innovative commercial players are breaking technologies into smaller pieces that can be bought incrementally (canister/cooker, battery/PV module), thus avoiding the need for finance. There is still a good deal of work to do in this area.

Appliance choice. Appliances are driving sales of kerosine, LPG and PV/batteries. Most of the work in development has been done on the energy technology, but not enough has been done to make/sell/locate appropriate low-cost appliances. For example, the PV consumer has an extremely limited choice of TV's and lamps --- a DC colour TV or a range of useful lamps and appliances would stimulate increased use of the PV technology. The same is true for LPG and LPG cooker/lamps. Lower cost and higher quality appliances will drive the market for the technology.

F.4 Summary of the existing market for appliances and sustainable energy technologies in Kenya

Sales of Kerosene and LPG (1996-2000)

	1996	1997	1998	1999	2000
Illuminating kerosene	253.8	267.6	318.2	406.8	383.7
Liquefied petroleum gas	31.2	30.7	31.3	32.2	33.4

Kerosene. Business in fuel is worth ±US\$ 200 MILLION per year. Kerosene is primarily supply option and an alternative cooking and lighting fuel for rural areas and urban poor. It is estimated that 30 % of urban population use charcoal/paraffin mix while 50 % use paraffin as primary cooking fuel. For lighting purposes 82 % of Kenya's population use paraffin as primary lighting fuel and in the rural areas this was 90 % with urban areas 50 %. Recent price hike on kerosene raised cost by 15%.

- Hurricane lanterns: Probably 3 million in use. Annual trade may be worth US\$750,000.
- Pressure lamps: 200-300 thousand in use. Annual trade may be over one million dollars.
- Kerosine cookers. Used by over 1 million households. Trade estimated to be over 3 million dollars per year.

LPG. Total annual consumption of LPG for the year 2000 is estimated at 33,4000 tonnes, worth over \$30 million. LPG is playing an increasing role in the market, and it is being taken up by industrial, small business and household customers. Imports of LPG gas rose fifteenfold between 1993 and 2000. There is current private sector effort to increase existing storage capacity from 2000 metric by about 3000-5000 metric tonnes, with additional storage depots up country. Several companies have introduced smaller 3 kg canisters which includes a combination canister/cooker. 750,000 canisters are now in the market.

- LPG cookers are used by over 2% of the rural population, and by over 15% of the tally customers.
- LPG lamps are still not widely used.

PV and Batteries. Business is worth over \$5.5 million not including television market.

- >250,000 lead acid batteries in use in rural areas. >50-80,000 sold per year.
- >300 kWp of PV sold to rural market
- >\$1M in BOS sold in rural market each year.

Business Models in Kenya

During the study, the team identified 4 primary types of business arrangements that are currently used to sell household amenities and sustainable energy products. All of the models are well-developed and tested in Kenya, as well as being distinctive from each other. As the Kenya market has developed, it has moved from being one of independent players to one that encourages long-term distributor-dealer relationships, be they tied by ownership or brand and price loyalty. The four models are described below.

- **Independent Suppliers and Dealers**

Characteristics

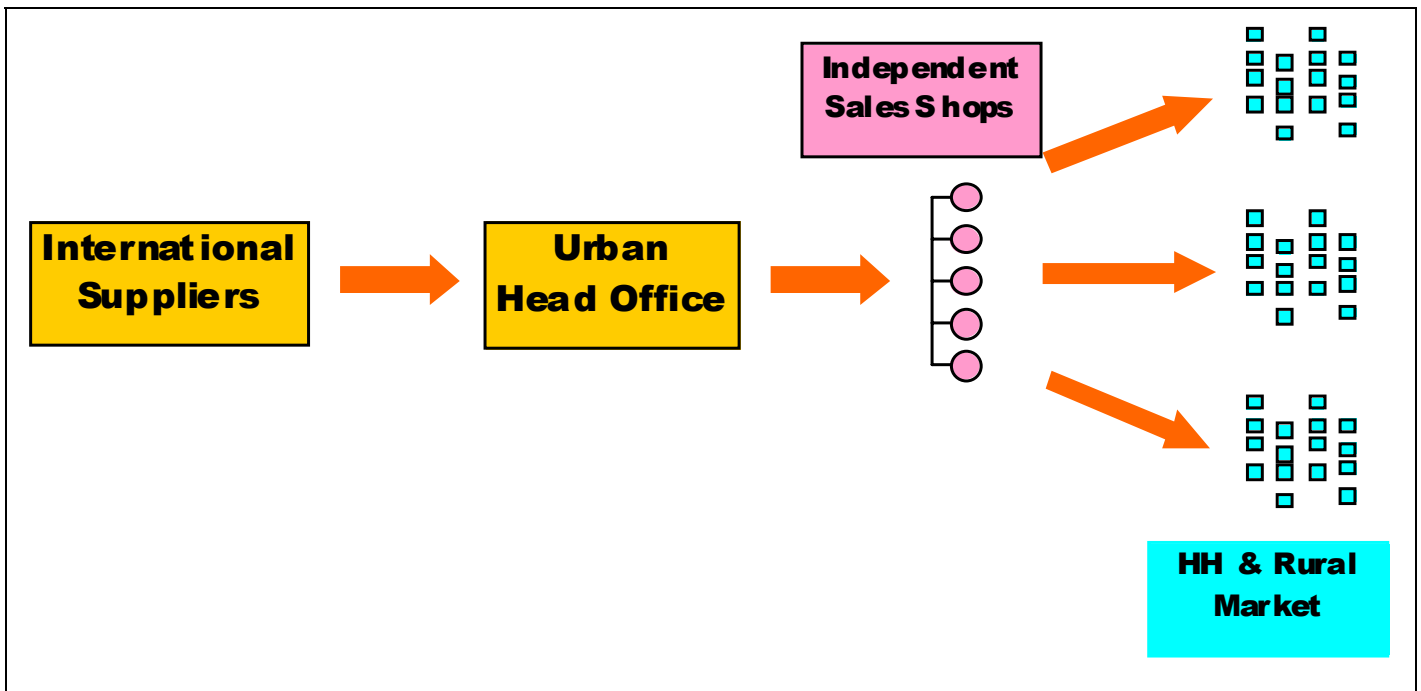
This is a standard established method of supplying goods in Kenya. (Also well developed in Uganda. In Ethiopia, undeveloped for energy products). Distributors tend to be import/export agencies that deal in a variety of goods. Distributors (import/export agents) tend to be wholly or partly owned, while retail dealers tend to be local, small and often family business.

Products include electronics, consumer amenities, automotive parts, hardware, etc. Distributors and retailers are independent of one another, but establish relationships that are often long-term. Limited customer services are offered and equipment warranties vary. Product support and warranties are used as a method of developing customer and dealer loyalty, though some dealers do not honour manufacturer warranties.

Most goods are sold by retailers on a cash basis, though informal credit arrangements are made between dealers and customers. Distributors offer favoured retailers credit terms whereby they have several months to pay for delivered goods.

Often, international companies that have local importation agents form networks of dealers who carry their “brand”. Brands (i.e. types of modules, electronic equipment) are advertised and pushed into the market.

Energy products: Solar modules, batteries, BOS, 12V lamps, wind chargers, 12VDC and 240 VAC appliances, kerosene stoves, kerosene hurricane and pressure lanterns, inverters are sold through these outlets.



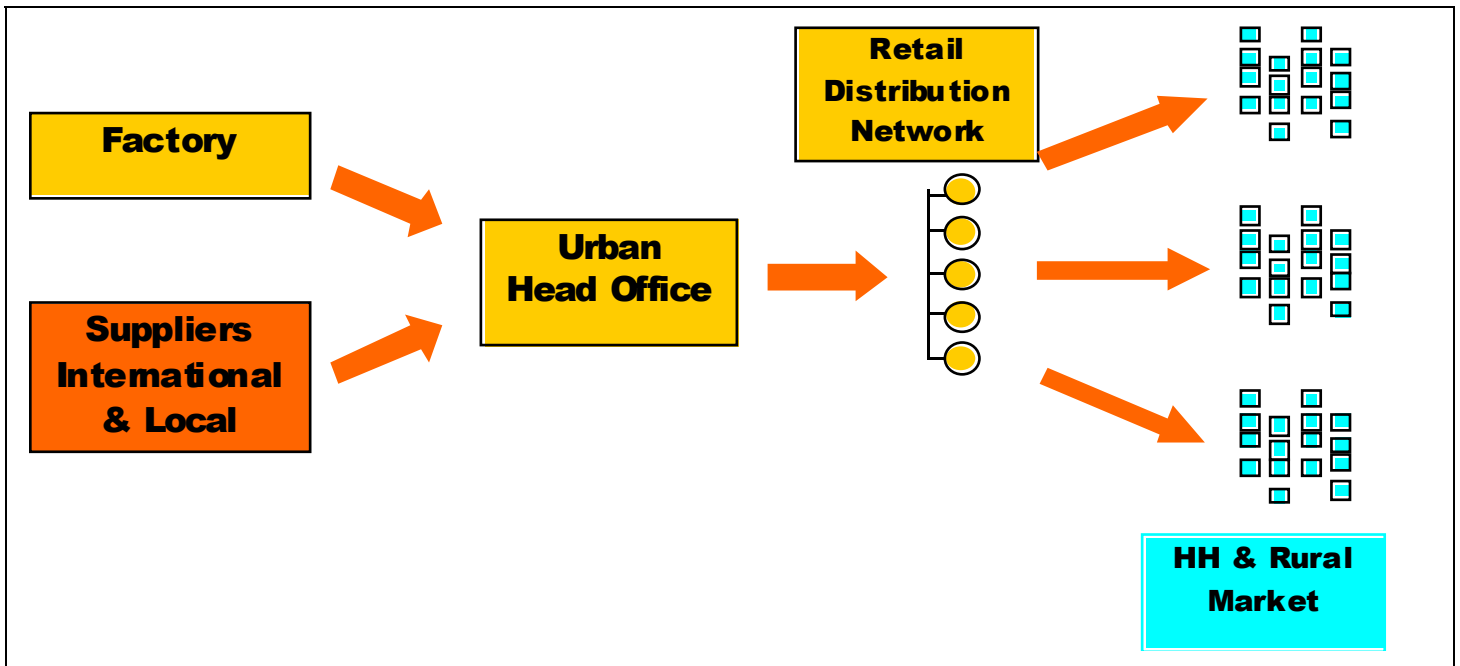
- **Local Manufacturer/Distributor with Company-Owned Up Country Dealers**

Characteristics

This type of company manufactures its own products or handles a line of imported products and has its own fully owned distributors in strategic parts of the country. Typically, the company has a head office (Nairobi) with strategic outlets in major towns around the country. The company operates through its distributors but often sets up strategic relationships with independent dealers (i.e. the company interviewed in this study had 8 depots and over 100 independent dealers).

This type of company tends to specialise in a “family” of products or services. For example, the battery company specialises in automotive and solar batteries as well as PV products. Another “solar” company offers a range of imported PV products which it brands itself. Product support, warranties and service tend to be of high quality with this type of company. In Kenya, companies in the PV, consumer electronics and auto parts market are often set up this way. This type of business may be locally owned or owned in partnership by local and international groups.

Most goods are sold strictly on a cash basis. Credit for customers is “out-sourced” by offering the goods through established credit systems (i.e. in SACCOs) or by offering products through separate hire purchase dealers.

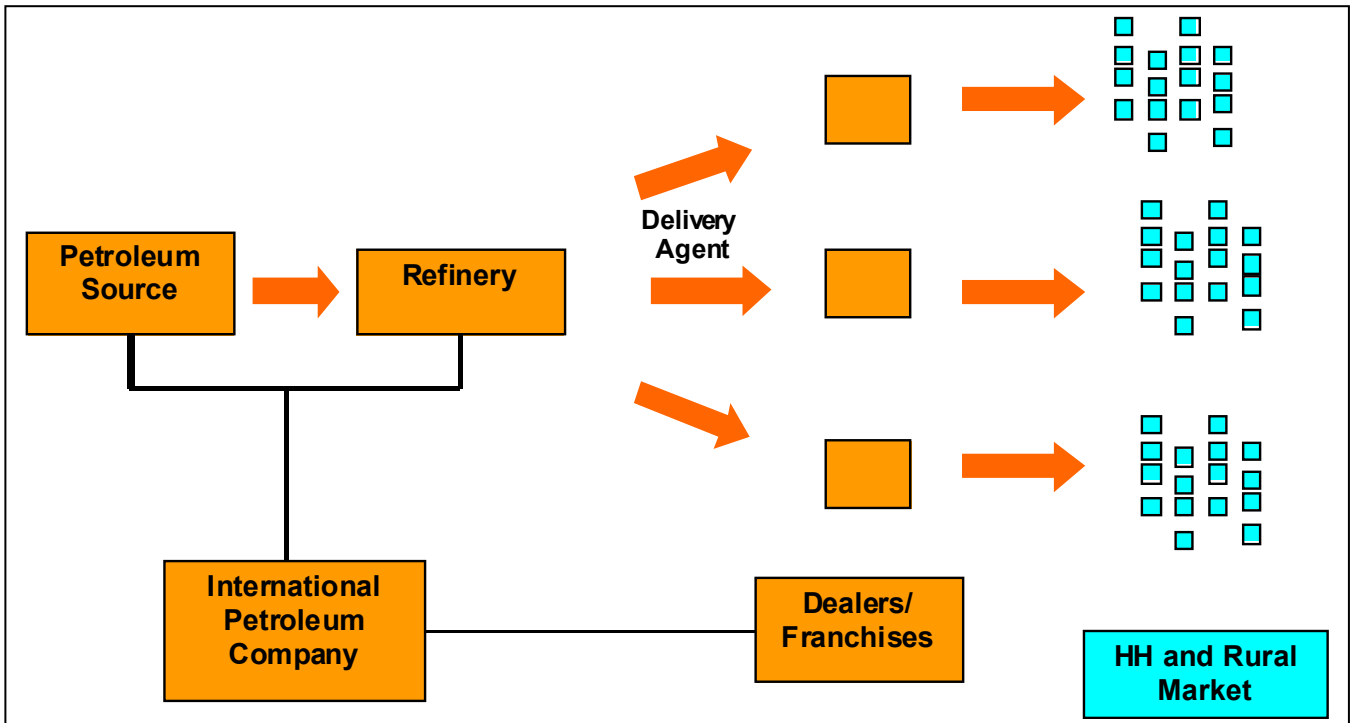


- **Petrol Service Stations**

Characteristics

The organisational set-up of petrol companies in East Africa is as elsewhere. Most companies purchase fuels from the Mombasa refinery (some import fuels directly) and have it shipped to up-country depots by pipeline or lorry. The major companies are either entirely owned by multinationals or are part-owned by local consortiums. In Kenya, companies have between 75 and 220 service station outlets. Over two thirds of these outlets are located in major urban centres such as Nairobi, Mombasa, Kisumu or Nakuru. Stations are either owned by the company or franchised to local dealers with strict relationship rules.

Household energy products sold through petrol stations include kerosene and LPG fuels, and a line of LPG canisters and appliances. In rural areas, petrol companies are focusing on smaller-sized LPG products. One company attempted to sell solar products (PV and solar water heaters) in the early nineties, but the venture was abandoned because its marketing costs were



too high.

Petrol companies have focused on urban markets, but are increasingly interested in rural areas because of intense competition in the major cities.

Forecourt shops have been added in many of the big-city petrol stations to attract more customers and to increase sales. Again, most have been located in urban areas. A wide range of products is stocked, but the leading items include food (hot dogs, milk and bread), cigarettes, beer, soft drinks, mobile phone cards. On leading company turns over \$2.5M per year in forecourt sales.

- **Hire Purchase**

Characteristics.

Hire purchase companies developed in the 1970's to finance consumer purchases by civil servants and employees of large companies. For salaried workers with access to a pay slip (teachers, civil servants, members of SACCOs), hire purchase has become a standard way of paying for household amenities. Most of the HP companies in Kenya are locally owned, with

central offices (Nairobi) and rural shops scattered around the country. They are all fully focused on the HP business, though they do sell some products on a cash basis. The largest company, studied in this exercise, has 33 outlets in all major towns in the country.

Products sold by HP firms include a wide range of household goods ranging from sewing machines to TV's and stereos to fridges or sofa sets. Energy items include cooking appliances and solar home system kits. Goods are sourced centrally on a wholesale basis. For example, the company studied has a sole source agreement to purchase PV kits from one importer which has been in force for several years.

Hire purchase purchase terms typically last one to two years, and are directly debited from the paycheck of the consumer. The quoted purchase price includes interest on the item, which is often over 40% p.a. Companies may sell low-price goods on a cash basis. For example, the company studied sells anything below Kshs 6000 on a cash basis.