

# Atlas of Household Energy Consumption and Expenditure in India

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Visualizing household energy data across India based on the  
2004-05 National Sample Survey (61st round)

[www.householdenergy.in](http://www.householdenergy.in)



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## Forward

Dear Reader,

We at the Centre for Development Finance (CDF) are proud to introduce the Energy Atlas – the first interactive online resource, complete with explanatory report, which allows investors, entrepreneurs and policy makers to quickly access and explore household fuel consumption and expenditure data across India's 28 states and the urban-rural divide. The Atlas fills an acknowledged gap by providing access to clean development data on household energy consumption and expenditure.

What began as modest attempt to estimate the market potential for clean energy products and services for our publication Power to the People, a joint report with World Resources Institute, the Energy Atlas has become an exciting example of how existing development data can be leveraged to promote data driven social enterprise and public policy. A team of talented, innovative CDF researchers spent 15 months mining the data, refining the methodology and validating results to make fuel consumption and expenditure information from the National Sample Survey Organisation's 2004-05 Survey more useful to private and public entities in India's development space. Not only does the Energy Atlas present significant comparisons of state fuel consumption patterns, but it is the first resource to disaggregate financial expenditure from the overall fuel consumption estimates. For the first time, users can pinpoint the data they need to determine usage patterns and cost trends in India's household energy markets.

CDF is an action research think tank committed to helping markets and states work for development. We are excited to provide this much-needed tool to reach our common goal: ensure that the combination of smart public policy and innovative market-based approaches that contribute to India's impressive economic growth are inclusive of the rural poor. More nuanced decision-making, made possible by the granular data presented in the Energy Atlas, can help us in our urgent, collective efforts to effectively address India's environmental and development concerns.

Sincerely,

Centre for Development Finance - IFMR

## **Acknowledgements**

This report would not have been possible without the support of several individuals and organizations. We express deep gratitude to Dr. Brinda Viswanathan and Dr. Swarna S. Vepa of the Madras School of Economics as expert review panelists, ICICI Foundation for Inclusive Growth, ICICI Bank, and all of the companies and clients of Rural Market Insight at CDF from whom we have learned so much.

We also extend our deep appreciation to the research team at Centre for Development Finance for their time and expertise, including Bhagyaraj Sudanthiram and Selvan Thandapani. While we are thankful for the contribution of the above individuals and organizations, the views expressed in this report are those of the authors and do not represent the views of CDF or our partners.

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## **Section 1: Introduction & Background**

Since 2005, India has witnessed an average annual GDP growth rate of 8.5%. India's impressive growth is accompanied by a complex story of increasing aggregate energy demand and growing need for increasing energy inclusion. Millions of households in India still lack access to reliable electricity and clean cooking fuels. According to the International Energy Association (2009) approximately 36% of India's population – over 400 million Indians – lack access to electricity<sup>1</sup>. Furthermore, nearly 70% of Indians – over 725 million individuals – rely on biomass as their primary cooking fuel<sup>2</sup>.

Against this backdrop, India is witnessing an upsurge in activity for the development of new renewable energy technologies, products, and services to meet the rising energy demands of poor households at the "Base of the Pyramid"<sup>3</sup> (BoP).

The combination of the need to sustainably eliminate energy poverty and the emergence of new and exciting energy technologies and business models in India has attracted the interest of multinational corporations, multilateral development donor organizations, foundations, and social venture investors alike. This

increased interest is evidenced by the announcement of the Global Cookstoves Alliance in 2010, the Shell Foundation's investment of \$25 million<sup>4</sup> to develop commercially viable improved cook stoves, the Government of India's launch of a new Improved Cookstoves Mission, and the proliferation of social enterprises and traditional companies that seek to provide clean energy products and services to BoP consumer segments since 2007<sup>5</sup>.

While increased interest in developing innovative policies and business models to enhance energy inclusion is exciting, entrepreneurs, investors, and policy makers face significant challenges related to technology development, marketing and distribution, and policy and incentive design. Underlying each of these specific challenges, too little is currently known about the target market for clean energy products and services. Access to robust, accessible data about the energy consumption and expenditure patterns of BoP consumer segments are in short supply.

Fortunately, in India the National Sample Survey (NSS) Consumer Expenditure Survey compiles household level data from across the country. While these data are well known to academics and policy professionals, they are relatively underutilized by entrepreneurs and impact investors.

1 IEA (2009) The Electricity Access Database. International Energy Agency (IEA): Paris, France. Accessed at [www.worldenergyoutlook.org](http://www.worldenergyoutlook.org) on 3 January 2010.

2 IEA (2006) Chapter 15 – Energy for cooking in developing countries. World Energy Outlook 2006. International Energy Agency (IEA): Paris, France. Accessed at [www.worldenergyoutlook.org](http://www.worldenergyoutlook.org) on 12 January 2010.

3 Readers interested in learning more about the Base of the Pyramid should refer to Prahalad and Hart (2002) The Fortune at the Bottom of the Pyramid: Eradicating Poverty through Profits and Hammond et. al (2007) The Next 4 Billion: Market Size and Business Strategy at the Base of the Pyramid.

4 <http://www.shellfoundation.org/>

5 Readers interested in learning about clean energy products and services for India's BoP population should refer to Bairiganjan et. al (2010) Power to the People: Investing in Clean Energy for the Base of the Pyramid in India. Centre for Development Finance – IFMR.

Although the NSS data are publicly available, effectively working with the data to produce useable results requires in-depth knowledge of the survey structure and methodology, statistical expertise, and advanced statistical software. These factors can render the relevant insight contained in these studies inaccessible to many stakeholders. Recognizing this, the Energy Atlas was created to present household energy data from the 61<sup>st</sup> round of the NSS Consumer Expenditure Survey in an intuitive and accessible manner for all who are interested in this sector.

## 1.2 Overview

The data presented in the Energy Atlas are drawn from the 61<sup>st</sup> round of NSS 2004-2005 Consumer Expenditure Survey, which covers over 124,000 households across the entire geographical area of India. As part of its broad-based data on household consumption, the NSS data contain detailed information on household-level consumption and expenditure patterns on fuel and light, including quantities of fuel used, the value of the fuels

consumed and amount households spend per month on each fuel type<sup>6</sup>. The Energy Atlas focuses specifically on the NSS cooking and lighting fuel consumption and expenditure data to paint a more refined picture of household-level energy consumption dynamics at both the national and state level.

Aggregate data on economic activity, fuel use patterns and bulk fuel usage are commonly used to provide a useful national-level snapshot of household energy use and consumption dynamics. While these aggregate data may be insightful when used for the purpose of country or regional comparison, they mask the substantial variation across states, locales (urban-rural), and income segments.

Disaggregated data can yield substantial insight to improve product design, service delivery, marketing and communication, as well as policy design and implementation. For example, 65% of households across

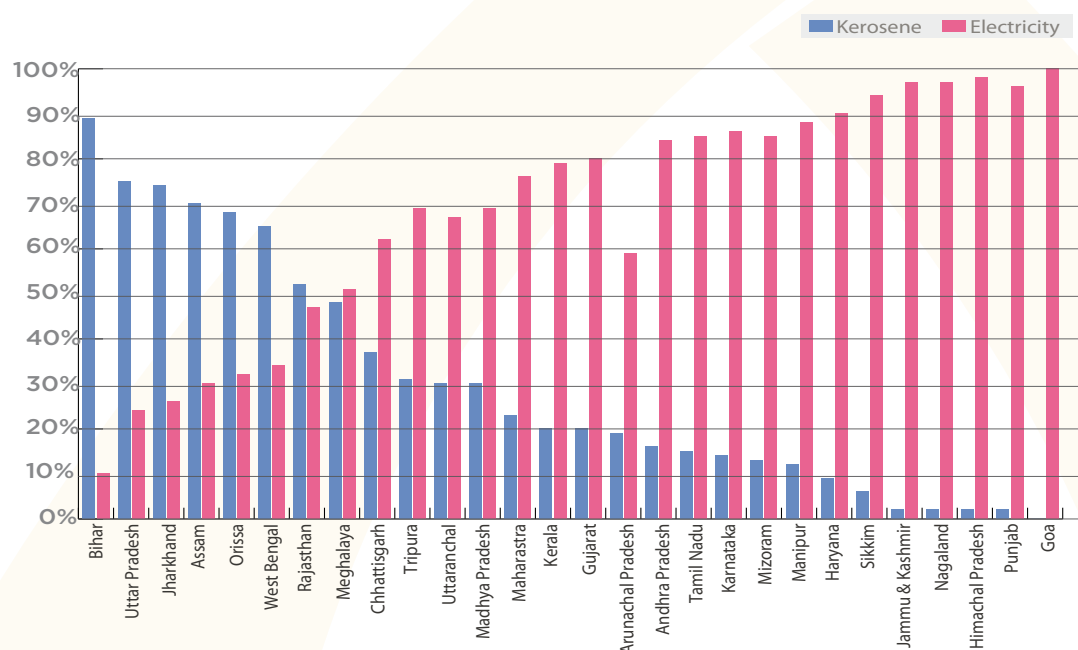


Figure 1 : Percent of Rural of Households Using Each Energy Type as a Primary Lighting Source

<sup>6</sup> Household fuel consumption and expenditure estimates do not include fuels used for transportation.

India report using electricity as their primary lighting source. However, when disaggregated into urban and rural populations, the data reveal that 92% of urban and 55% of rural households use electricity as their primary lighting source. Similarly, a close examination of the state level NSS data for Bihar and Punjab highlights the extreme inter-state variability (*Fig. 1*). The Energy Atlas reveals that while 96% of rural households in Punjab report using electricity as their primary lighting source, only 10% of rural households in Bihar report doing so. Disaggregated data reveals a large potential market opportunity for providing alternative lighting and energy solutions to the nearly 12.7 million households in rural Bihar that would otherwise be masked by the commonly cited all-India figures.

### **1.3 How Does the Energy Atlas Work?**

This publication is intended to help enterprises, policy makers, and organizations refine their understanding of the household energy market and household energy use patterns. As a reference document, the Energy Atlas presents household consumption and expenditure data at the national and state level in an accessible manner. However, the Energy Atlas does not provide detailed interpretation of the data or discuss the potential implications of the data for various stakeholders. We leave it to the reader to interrogate the data to identify the patterns, trends, and insights that are most relevant to them.

While the Energy Atlas provides access to rich data on household level consumption and expenditure patterns, many market and design strategies require a very localized understanding of household consumption and expenditure patterns. In these instances, the Energy Atlas can be used as a foundation for conducting deeper analysis; Appendix A provides a list of resources that are useful for those conducting research on this topic.

In this report, the data are presented in three sections. Section 3 introduces the national energy consumption and expenditure data at the all India, rural, and urban levels<sup>7</sup>. This section provides an overview of household fuel usage and consumption patterns for the most common fuel types to set the context for reading the granular data presented in the charts and graphs in Sections 4 and 5. Section 4 presents a comparative picture of rural household cooking and lighting fuel consumption patterns between states. This section highlights the wide variability among fuel use, consumption, and expenditure between states and sets the stage for the detailed state level data that form the core reference material presented in the Energy Atlas. Finally, Section 5 provides a detailed overview of expenditure, usage, and consumption data for each of India's 28 states.

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<sup>7</sup> Data from this section is an aggregate of data from all 28 states and 7 union territories across India.

## Section 2 : Methodological Overview

All findings presented in this publication are based on data extracted from the 61st round of the Consumer Expenditure Survey, conducted by the National Sample Survey Organization<sup>8</sup> (NSSO) between July 2004 and June 2005. The NSS Consumer Expenditure surveys are a commonly accepted and time-tested source of detailed consumer expenditure data in India.

The Consumer Expenditure survey collects a wide variety of consumption and expenditure data, capturing nearly all categories of goods and services used daily by individuals and households. The main categories of the Consumer Expenditure surveys include food and drink, tobacco, fuel and light, clothing, medical services, consumer goods, taxes and rent. Originally used as a

method to monitor average caloric intake across India, the survey continues to capture detailed information regarding food consumption. Other consumer categories were later added to track expenses over time, allowing the survey to be used as a proxy for household and individual incomes in India.

The 61<sup>st</sup> round is the most recent large sample survey available, with a sample size of 124,644 interviews conducted throughout India. All data were collected through structured interviews and a stratified, multi-stage, nation-wide sampling design<sup>9</sup>. This sample is weighted to achieve aggregate estimates that are statistically representative of the entire population. In this round, the data represents a total of 207,113,585 households. The sample size and weighted populations are shown in the table below.

	Sample Size	Weighted Household Population [No. of households]	Weighted Total Population [No. of people]
All India	124,644	207,113,585	981,610,607
Rural	79,988	150,159,755	733,105,506
Urban	45,346	56,953,830	248,505,110

Table 1

<sup>8</sup> The National Sample Survey Organisation, part of the Ministry of Statistics and Programme Implementation, is a branch of the Indian government that conducts one of the largest ongoing quantitative surveys in the world. Every 5 years, a major socio-economic variable is researched, such as employment, health, consumer expenditure etc. These are followed by smaller annual surveys on the same topics for tracking changes over time. The NSS data offers the most robust, up-to-date data on the lives of individuals all over rural and urban India. More information about the organization, as well as downloadable reports and data order forms, can be found at [http://mospi.gov.in/nssso\\_4aug2008/web/nssso.htm](http://mospi.gov.in/nssso_4aug2008/web/nssso.htm)

<sup>9</sup> Additional sampling information for this survey can be found at <http://mospi.nic.in/dwh/pdf/nss61-instruction.pdf>

Data pertaining to household fuel consumption and expenditure were derived from Block 6 (Consumption of fuel and light during the last 30 days) of the Consumer Expenditure Survey. A total of twelve fuel categories are recorded in this section of the survey, including:

- Candles
- Coal
- Dung cake
- Firewood<sup>10</sup>
- Kerosene (PDS and other sources)<sup>11</sup>
- Matches
- Charcoal
- Coke
- Electricity
- Gobar gas
- Liquid petroleum gas (LPG)
- Other fuels

Changes in temperatures, seasonal availability of certain fuels, as well as other economic and political factors impact household fuel use. The Consumer Expenditure survey was designed to nullify seasonality during the year the survey was conducted. However, major and sometimes unexplained shifts in fuel consumption have been known to occur between survey years<sup>12</sup>.

The fuel consumption and expenditure data are reported in the Energy Atlas as monthly per household expenditure (MPHE). Monthly per household expenditure was chosen over monthly per capita expenditure (MPCE) because fuels for cooking and lighting are purchased and consumed by the household unit, not individual unit. It is important to note that household size varies significantly across states and socio-economic classes in India. While fuel requirements are expected to rise

with increasing household size, economies of scale in cooking and lighting can also be expected at the household level. For example, one lamp can light a room whether for one person or four people. In the Energy Atlas, the average household size is provided for each area, which can be used to calculate consumption and expenditure at the individual monthly per capita level.

All figures presented in this publication are based on the 'last 30 days' recall period defined by NSS<sup>13</sup>. NSS does collect annual expenditure for some categories that are purchased infrequently, such as footwear or appliances, in order to cover household expenditures that may not fall within a 30 day recall period. To preserve data integrity, only monthly quantities and values are shown. Additionally, all expenditure and consumption figures presented in this report are shown in nominal 2004-05 Indian Rupees (INR) and are not adjusted for purchasing power parity or currency fluctuations. Interested readers can adjust these figures accordingly.

To validate the data presented in the Energy Atlas, selected state and national figures in this publication were compared against corresponding figures independently calculated and published by NSS in Report No. 508 *Level and Pattern of Consumer Expenditure, 2004-05* and Report No. 511 *Energy Sources of Indian Households for Cooking and Lighting, 2004-05*<sup>14</sup>. Items that could

10 Firewood refers to the 'Firewood & Chips' fuel option in the survey, which is inclusive of agricultural waste. The term 'Firewood' used in the remainder of the report represents 'Firewood & Chips.'

11 Kerosene in this section represents the combination of both public distribution system (PDS) kerosene and kerosene obtained through other sources, which is separated in the NSS survey, but combined for the purposes of this publication.

12 Smith, K.R., Venkataraman, C, Sagar, A.D., Habib, G, & Lam, M. (2010). The Indian National Initiative for Advanced Biomass Cookstoves: the benefits of clean combustion. *Energy for Sustainable Development*, 14(2),

13 Instructions to Field Staff, Vol. 1: NSS 61st Round

14 These reports can be downloaded from [http://www.mospi.gov.in/mospi\\_nsso\\_rept\\_pubn.htm](http://www.mospi.gov.in/mospi_nsso_rept_pubn.htm)

be compared, such as sample sizes and aggregated total monthly per capita expenditure (MPCE) values for the entire fuel & light category, as well as household sizes and primary cooking fuels of urban and rural households in each state, provided enough overlap to confirm the methodological soundness of the Atlas.

All category figures comport with those published by the NSS, except for a minor discrepancy within the 'clothing and footwear' expenditure category. The average monthly footwear expenditure figures exactly match, but the average clothing expenditures in the Energy Atlas are below those in the NSS report (no. 508). The discrepancy, most likely caused by rounding,

results in less than a 1% difference between the total MPCE values presented here and the total MPCE values found within the NSS report (no. 508).

In all instances, the data presented in the Energy Atlas, which were derived from first principles from the NSS survey, comport with the statistics published by NSS.

Both the methodology for extracting and interpreting the data, as well as the published results, were reviewed independently by two distinguished experts in this field (Dr. Brinda Viswanathan and Dr. Swarna S. Vepa of the Madras School of Economics) for methodological soundness and clarity.

## 2.2 Explanation of Terminology

The following are explanations of the terminology and calculations used throughout the report. In most cases, data were filtered to reveal rural, urban and aggregated figures for all 28 states as well as for the entire country. Data for this report has been organized into three categories: Regional Overview; Energy Use, Consumption and Expenditure; and Consumption and Expenditure Patterns for Individual Fuel Types.

### **Regional Overview**

**Number of Households** is the total estimated number of households weighted against the sample.

**% of India's Households** is the household population of a state divided by the total number of households in India, as estimated by NSS.

**Average Household Size** is the average number of people living in each household.

### **Household Employment Type**

The household types within a region from the 'household characteristics' (Block 3) section of the NSS survey. Household employment type data for urban and rural areas cannot be combined due to difference in employment categories between rural and urban areas.

### **Household Expenditure Categories**

The average expenditure for each expenditure categories contained within the 61<sup>st</sup> round of the NSS consumer expenditure survey.

The sum of the 32 expenditure categories in Block 13 of the NSS survey create the total household expenditure. For the purpose of the Energy Atlas, some categories have been combined to create a condensed list of 11 expenditure categories. The condensed list of categories includes:

- Food
- Fuel & Light
- Miscellaneous consumer services (conveyance + other consumer services)
- Medical (institutional + non-institutional)
- Clothing & Footwear
- Miscellaneous consumer goods (entertainment + minor personal effects + toilet articles + other household consumables)
- Durable goods
- Education

- Pan, Tobacco & Intoxicants
- Rent
- Taxes & Cesses

With NSS data, the term 'expenditure' does not refer directly to the INR amount spent on products and services. In actuality, both the Food and the Fuel & Light categories contain a combination of both the amount of money paid for those items (financial expenditure) and the imputed market value of those items for the households that collected items for free or through trade (**See Appendix B, Box A**). The resulting expenditure figures for those two categories represent 'Market Value,' which is the average value of food or fuel consumed by households each month. As a result, total MPHE is likely to be lower than what is shown in this section of the Energy Atlas. However, the methodology used in this section of the publication matches the methodology used by the published NSS survey report (No. 508). Differences in market value and financial expenditure are discussed in greater detail later.

**Total Monthly Per Household Expenditure (MPHE) - All Categories** is the sum of all household expenditure categories. This represents the total average value of goods and services a household consumes per month. This figure is often used as a proxy for household income.

**Percentage of Monthly Per Household Expenditure (MPHE)** is the average MPHE for each category divided by the total MPHE (All Categories).

## ***Energy Use, Consumption and Expenditure***

### **Primary Fuel Use Patterns for Cooking and Lighting**

Presents Data from Block 3 of the NSS survey in which households report which fuel they primarily use for cooking, and which fuel they primarily use for lighting. Primary cooking fuels consist of 10 options (coke or coal, firewood, LPG, gobar gas, dung cake, charcoal, kerosene, electricity, others, and no cooking arrangement). Primary lighting source consist of 7 options (kerosene, other oil, gas, candle, electricity, others, and no lighting arrangement). Both the primary cooking and lighting fuel categories were condensed to show only the most common fuel types. The rest of the fuel types were included in the 'Other' category. For the Primary Cooking and Primary Lighting fuel charts respectively, the sum of sub-categorical fuel types equals 100%.

### **Aggregate Fuel Use**

Data for the monthly totals were taken exclusively from the 'consumption of fuel and light during the last 30 days' (Block 6) section of the NSS survey. As indicated in the title, this section records the quantities, expenditure values, and sources of various fuel types used by households in the 30 days prior to the interview.

Twelve fuel categories are recorded in this section of the NSS survey, including: candles, charcoal, coal, coke, dung cake, electricity, firewood, gobar gas, kerosene, LPG, matches, and other fuels. In this section, kerosene represents the combination of both Public Distribution System (PDS) kerosene as well as kerosene obtained through other sources. While separate in the NSS survey, they are combined for the purposes of the Energy Atlas.

**Household Fuel Use** shows the percentage of households using each of the major fuel types (dung cake, electricity, firewood, kerosene and LPG). This is calculated by dividing the total number of households using each fuel type by the total number of households in that area, either all-state, rural or urban. This shows the proportion of the population that uses each fuel type.

**Total Monthly Expenditure on Fuel & Light** is the sum of total market values for each fuel category, representing the value of all fuel used in that region per month.

**Average Monthly Per Household Expenditure (MPHE) on Fuel & Light** is the total market value of all fuel used in the past 30 days divided by the total number of households. This implies average fuel expenditure incurred by households per month.

## **Per Capita Expenditure and Expenditure Quartiles**

**Fuel Expenditure by Monthly Per Capita Expenditure (MPCE ) Quartiles** covers quartile wise averages for MPCE on fuel and light. Expenditure quartiles were created using the average monthly per capita expenditure (MPCE) of four equal segments of the per capita population. The Energy Atlas examines the total expenditure on fuel & light within these MPCE quartiles to reveal patterns of fuel expenditure by individuals of different economic levels. The quartile range, which is dependent on household expenditure distribution, is different for each state and sector.

**Percentage of Households** shows the proportion of total households that are represented within each of the MPCE quartiles. Differences between MPCE quartiles are due to differences in household sizes in each quartile. The sum of the quartiles equals 100%.

**Household Size** is the average number of people living in each household within a specific MPCE quartile.

## **Fuel Source and Payment**

### **Percentage of Firewood Users Obtaining Firewood by Source**

This shows how households acquire firewood. Firewood is a main fuel source for cooking for many rural households in India. NSS has designated seven modes of fuel acquisition (only purchase, only home-grown stock, both purchase and home-grown stock, only free collection, only exchange of goods and services, only gifts/charities, and other).

Source codes for fuel are recorded for all fuel types except the 'other fuels' category in Block 6 of the NSS survey. PDS Kerosene is given a default source code of "1" (only purchase) in the NSS survey, meaning that 100% of the population using Kerosene (PDS) purchases it. The vast majority of fuels fall under the 'only purchase', 'only home-grown stock', and 'only free collection' source options. More information about source codes can be found in **Appendix B, Box B**

**Percent of Users Who Pay** is the total households paying for a specific fuel type divided by the total number of households using each fuel type. Firewood, dung cake and electricity are presented because they are commonly used and have the potential to be acquired for free. The total number of households paying for a specific fuel type is the sum of households obtaining their fuel via source codes 1 & 3 ('only purchase' or 'both purchase and home-grown stock').

### **Market Value vs. Financial Expenditure**

This section provides a side-by-side comparison of the differences between the market values (found in the 'Aggregate Fuel Use' section) and financial expenditures on fuel & light. Total Value/expenditure of all fuel as well as monthly per household expenditure on fuel and light, are shown for both market values and financial expenditure. Financial expenditure figures are available for both the rural and urban sectors, but not for the aggregate of the two.

**Market Value** is the term used in this report to refer to the average value of fuel consumed in the past 30 days among households consuming those fuel types. The term 'value' is used because NSS records expenditure as a combination of both the amount of money paid for fuel (financial expenditure) and the imputed market value of fuels collected for free (**See Appendix B, Box A**). For example, if the market value of a kilo of firewood is 4 rupees per kilo, and a family uses 10 kilos in a month, then that family consumed 40 rupees worth of firewood regardless of whether or not that family collected the firewood for free. NSS records this as an expenditure of 40 rupees even if no money was spent by the household who used that fuel. It is this 'market value' (the combined financial expenditure and imputed market values) of fuel that is typically cited in publications analyzing NSS-based fuel consumption and expenditure data in India.

**Financial Expenditure** is a term used in this report to refer to the actual monetary expenditure incurred by the household for the purchase of fuel. Households obtain fuels in a variety of ways, including purchase, receipt in exchange of goods and services, from free collection or home grown stock, gifts, etc. As mentioned earlier, the value recorded in the NSS survey is the combination of the actual monetary expenditure on fuel through purchase as well as the imputed market value of fuel that was not purchased – e.g. gathered from home or free collection. Financial expenditure excludes imputed values to reveal the average amount of cash that is spent to purchase fuel per household.

Financial Expenditure is calculated by filtering the expenditure figures for each fuel type in Block 6 by households acquiring the fuel under source codes 1 or 3 ('only purchase' or 'both purchase and home-grown stock'). This method uncovers the consumption and expenditure habits exclusively of families that pay for fuel. More specifically, financial expenditure shows the cash amounts (INR) for fuel purchases. Financial expenditure figures are available for both the rural and urban sectors, but not for the all-India aggregate.

While further efforts could filter Source 3 (both purchase and home-grown stock) by the monetary transaction, the result is negligible, amounting to a difference of about one half of one percent (0.5%) of the total financial expenditure on fuel and light. The methodology of using all values in Source 3 result in a financial expenditure figure that is slightly higher than the actual financial expenditure for the fuel and light category, but by negligible amounts.

The 'other fuels' category was not assigned a source code option in the NSS survey. Therefore, to calculate the financial expenditure of the entire fuel & light category the full value (100%) of the 'other fuels' category was used. While the financial expenditure on 'other fuels' is likely lower than shown in this report, without source codes for this category, the NSS data do not offer a way of discerning the exact amount.

**Total Monthly Expenditure on Fuel & Light** shows the total sum of all monthly household expenditures (both market values and financial expenditures) on fuel and light, shown in INR.

**Average Monthly Per Household Expenditure (MPHE) on Fuel & Light** shows the average monthly expenditure (both market values and financial expenditures) by each household for fuel and light, shown in INR.

**Percentage of Market Value** is the financial expenditure divided by market value figures. This shows what proportion of the market value consists of a monetary payment for fuel.

## ***Consumption and Expenditure Patterns for Individual Fuel Types***

### **Fuel Usage Figures**

This section shows a summary of monthly consumption and expenditure details at the household level for commonly used fuels including firewood, dung cake, kerosene, LPG and electricity. Quantities of fuel used and estimates for financial expenditure are included when possible.

**Number of Households (HH) Using** is the total number of households using each fuel type as calculated by NSS.

**Average Quantity** shows the average per-household quantity of each fuel type used in the past 30 days among households consuming each fuel type. Quantity units vary depending on fuel type (kilograms, litre, kilowatt hours, etc.). Quantity estimates were not collected in the NSS survey for dung cake and are, therefore, not shown.

**Percent of Users Paying** is the total households paying for a specific fuel type divided by the total number of households using each fuel type, as reported in the 'Monthly Totals' section. The total number of households paying for a specific fuel type is the sum of households obtaining fuel via source codes 1 & 3 ('only purchase' or 'both purchase and home-grown stock'). These values are not shown for kerosene and LPG consumption because the vast majority of the users pay for these fuels.

**Average Monthly Per Household Expenditure (MPHE)** shows the average per-household financial expenditure for each fuel type used in the past 30 days among households consuming, and paying for, each fuel type. This shows the average amount in INR paid each month by households using that specific type of fuel.

## Section 3: India - A National Perspective

This section provides an overview of household demographics, as well as expenditure and consumption patterns at the aggregate all-India, rural and urban levels.

### 3.2 Regional Overview

	Rural	Urban
No. of Households	150,159,755	56,953,830
% of India's Household Population	100%	
Average Household Size	4.88	4.36

Table 2

India, the world's second most populated country, is home to 207.1 million households<sup>15</sup>. The majority of these households (73%) live in rural areas. Differences between rural and urban household populations are apparent across numerous demographic and economic dimensions. For example, average household size differs across rural and urban populations, with rural populations having larger households (4.88 people in rural households) than urban populations (4.36 people in urban households).

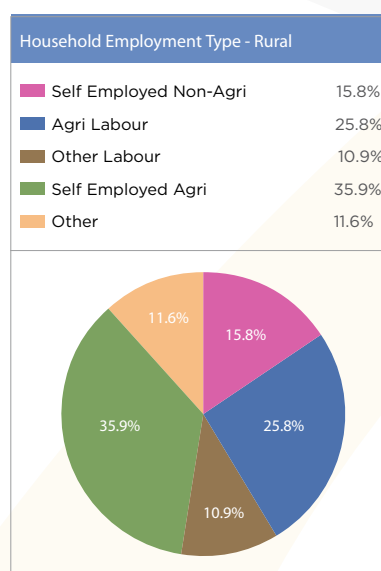


Figure 2 A

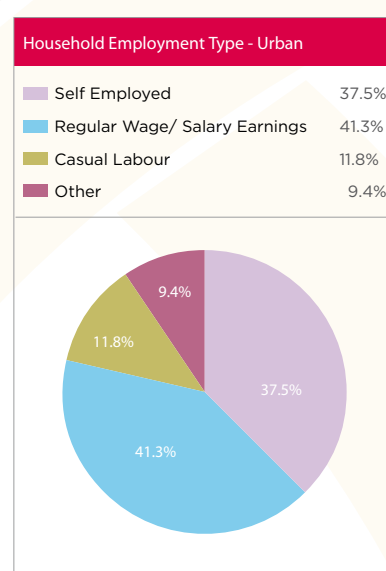


Figure 2 B

Figure 2 A and B show the differences in household employment types between rural and urban households. As expected, agricultural labor is common among rural households with nearly 62% categorized as either being an agricultural labor household or self-employed agricultural labor household. Over 41% of households in urban settings

<sup>15</sup> NSS population estimates are typically lower than those predicted by the Census of India. See Appendix C showing Census population estimates for 2004.

are categorized as regular wage/salary earners, while the second largest urban household segment (37.5%) are self-employed.

## Household Expenditure Categories

Prior to examining the details of household cooking and lighting fuel use, it is instructive to examine overall household expenditure patterns.

	All India (INR)	Rural (INR)	Urban (INR)
Total MPHE (All Categories)	3,230.85	2,719.46	4,579.12

Table 3

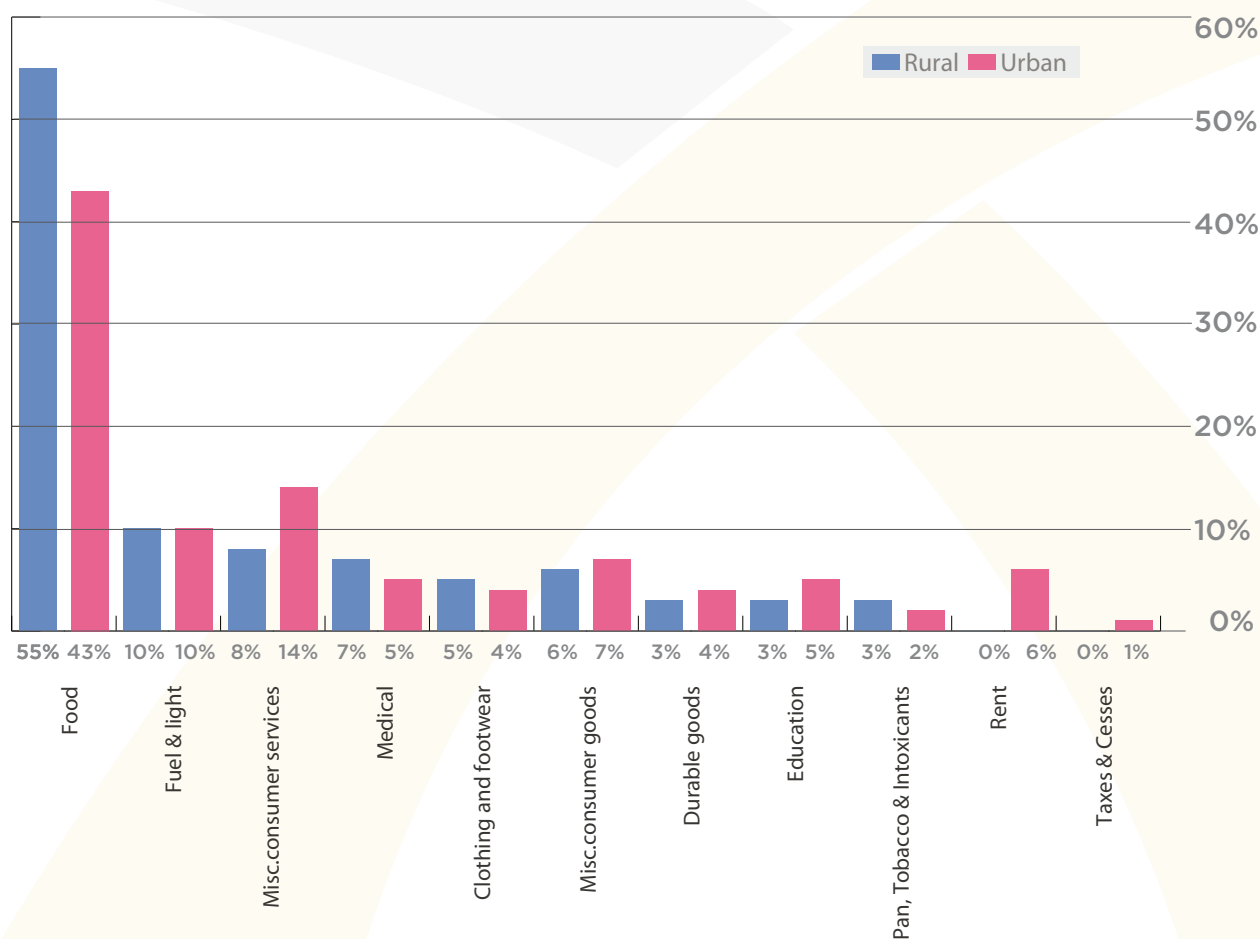


Figure 3 : Percentage of Monthly Per Household Expenditure

According to the NSS data, the total monthly expenditure (i.e., the total value of all goods and services used by a household per month) among rural households is significantly lower than among urban households (Figure 3) with an average rural monthly per household expenditure MPHE<sup>16</sup> of 2,719 INR<sup>17</sup> (\$60.43 USD<sup>18</sup>) and average urban MPHE of 4,579 INR (\$101.76 USD). Although in absolute terms the expenditure between rural and urban households appears quite different, expenditure on fuel and light accounted for approximately 10% of the overall monthly household expenditure for both of these segments (Figure 3). Food is by far the largest expenditure category for households across India.

### 3.3 Energy Use, Consumption and Expenditure

#### Primary Fuel Use Patterns for Cooking and Lighting

Across India, households in both rural and urban areas use a variety of fuels – including electricity, firewood, kerosene, dung cakes, and liquid petroleum gas (LPG) – to meet their cooking, lighting and energy needs.

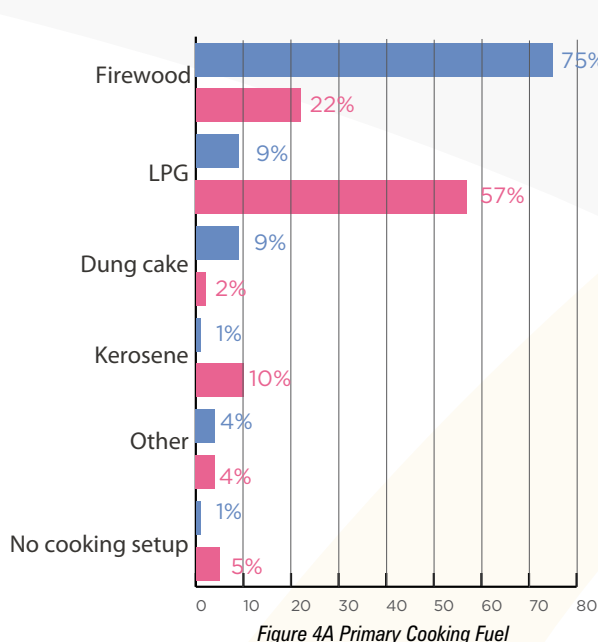


Figure 4A Primary Cooking Fuel

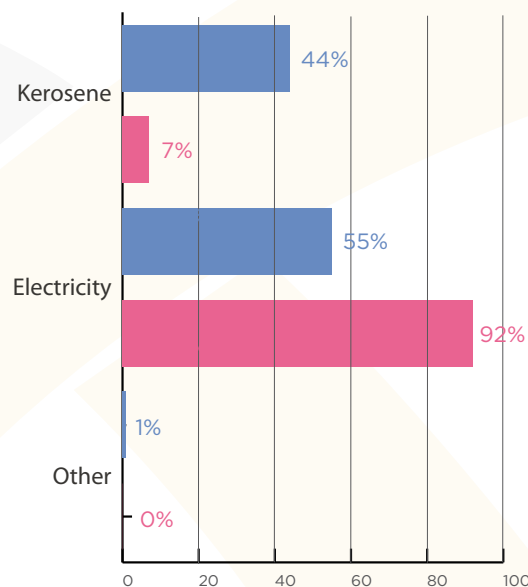


Figure 4B Primary Lighting Fuel

Figure 4A presents data on primary cooking fuels. Approximately 75% of rural households use firewood as their primary cooking fuel, while only 9% report using LPG and dung cakes as their primary cooking fuel source. In contrast, 57% of urban households use LPG as the primary cooking fuel, with far fewer households using firewood (22%) or kerosene (10%) as the primary cooking fuel.

16 MPHE = Monthly Per Household Expenditure as shown in Indian Rupees (INR), and is based on a 'last 30 days' recall period.

17 As noted in Section 2, this publication presents expenditure figures in nominal INR. The expenditure figures are not adjusted for purchasing power parity (PPP) or inflation.

18 Using the exchange rate of 45 INR/USD

Figure 4B presents a similar analysis of rural and urban consumers' primary source for home lighting. There is revealed a divergence in consumption patterns between rural and urban consumers. Rural consumers rely almost equally on electricity (55%) and kerosene (44%). On the contrary, the majority of urban households, approximately (92%), rely on electricity as their primary energy source for home lighting, with only 7% relying on kerosene.

## Aggregate Fuel Use

While data on primary cooking and lighting fuel use provides insight into the dominant habits for cooking and lighting among rural and urban households, they do not capture the myriad ways in which households across India meet their cooking, lighting and energy needs.

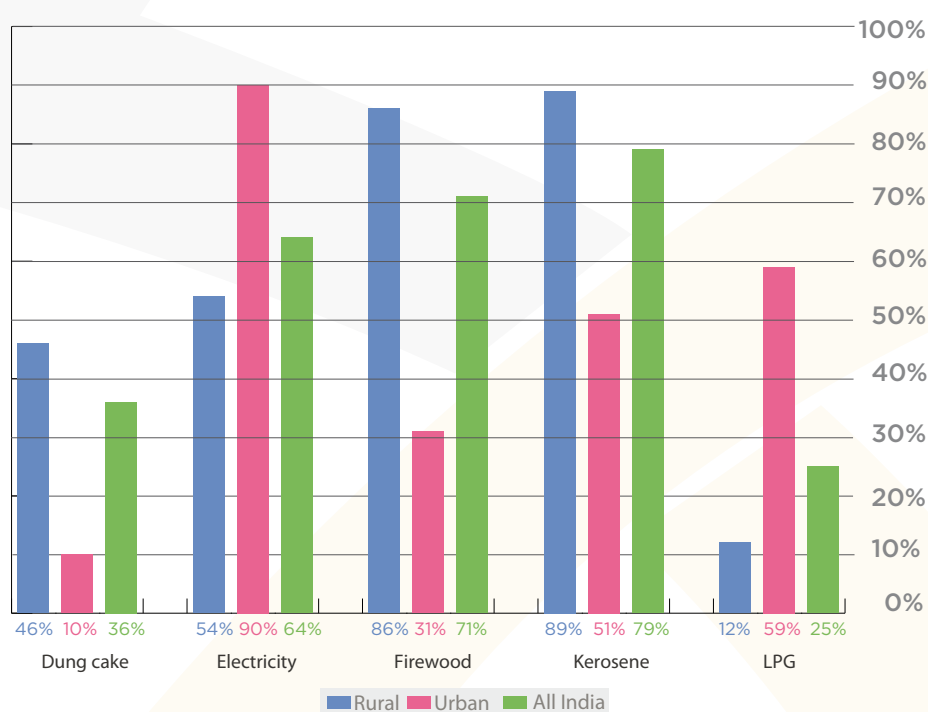


Figure 5 : Household Fuel Use

Figure 5 highlights the aggregate fuel use patterns for all India<sup>19</sup>. As seen here, kerosene and firewood are the most widely consumed fuel sources across India, with approximately 79% of households consuming kerosene, 71% consuming firewood, and only 64% consuming electricity. As demonstrated by the primary lighting and cooking fuel data above, fuel usage patterns among rural and urban households differ markedly. While nearly 90% of rural households report consuming kerosene, only approximately 50% of their urban counterparts report doing so. Similarly, 86% percent of rural households consume firewood as opposed to merely 30% of their urban

19 NSS collects data on 12 fuel categories (candles, charcoal, coal, coke, dung cake, electricity, firewood and chips, gobar gas, kerosene, LPG, matches, and other fuels). For the purposes of this publication, only the most common fuel types are shown. Additional fuel consumption data can be found at CDF's ([www.householdenergy.in](http://www.householdenergy.in)) website.

counterparts. It is important to note that the NSS does not differentiate between cooking and lighting fuels in the aggregate household fuel usage. However, examination of the aggregate and primary fuel usage data suggest that households across India use multiple fuels to meet their cooking and lighting needs

## Expenditure on Fuel & Light

	All India (INR)	Rural (INR)	Urban (INR)
Total Monthly Expenditure on Fuel & Light	67,665,000,000	41,667,000,000	25,998,000,000
Average MPHE on Fuel & Light	326.71	277.49	456.48

Table 4

In NSSO's 2004-2005 survey, Indian households reported consuming approximately 812 billion<sup>20</sup> INR (\$18.04 billion USD) worth of fuel annually to meet their energy needs. While this is impressive in aggregate, the large potential market is distributed among a vast number of households who make independent fuel use and purchasing decisions based on a variety of factors. Across India, households consume an average of 3,920 INR (\$87.12 USD) worth of fuel annually. As seen in the patterns of cooking and lighting fuel usage above, the household expenditure on fuel and light differs markedly for rural and urban user segments.

Table 4 presents the monthly fuel and light expenditure data for all India, rural and urban households at the aggregate and individual household levels. While rural households report consuming approximately 277 INR (\$6.17 USD) worth of fuel per month, urban households report consuming 456 INR (\$10.14 USD) per month. As noted above, expenditure on fuel and light accounted for approximately 10% of the overall monthly household expenditure for both urban and rural households (See Figure 3).

## Per Capita Expenditure and Expenditure Quartiles

Monthly per capita expenditure levels can be obtained by dividing the total monthly per household expenditure (all categories), or the monthly per household expenditure on fuel and light, by the average household sizes for rural and urban India. In rural India, 56.84 INR out of 557.02 INR in total per capita expenditure is spent on fuel per month at the individual level. In urban India, 104.62 INR out of 1,049.47 INR in total per capita expenditure is spent on fuel per month at the individual level.

An examination of the data between per capita expenditure quartiles highlights expenditure behavior across economic levels. Figure 6 A and B shows the monthly per capita expenditure (MPCE) on fuel and light by MPCE Quartiles (total per capita expenditure for all goods and service) in rural and urban India. Each quartile represents one-quarter of the per capita population<sup>21</sup>.

<sup>20</sup> 67.66 billion INR per month multiplied by 12 months

<sup>21</sup> MPHE quartiles were not used because the significant differences in household sizes across regions and expenditure classes distort the population physically represented in each quartile.

In both rural and urban India, large household size is correlated with low monthly per capita expenditure. For example, rural individuals in the lowest quartile (those spending less than 340 INR total per month) have an average household size of 5.7. This is in stark contrast to rural individuals in the highest quartile (those spending more than 625 INR total per month), who have an average household size of 4.1.

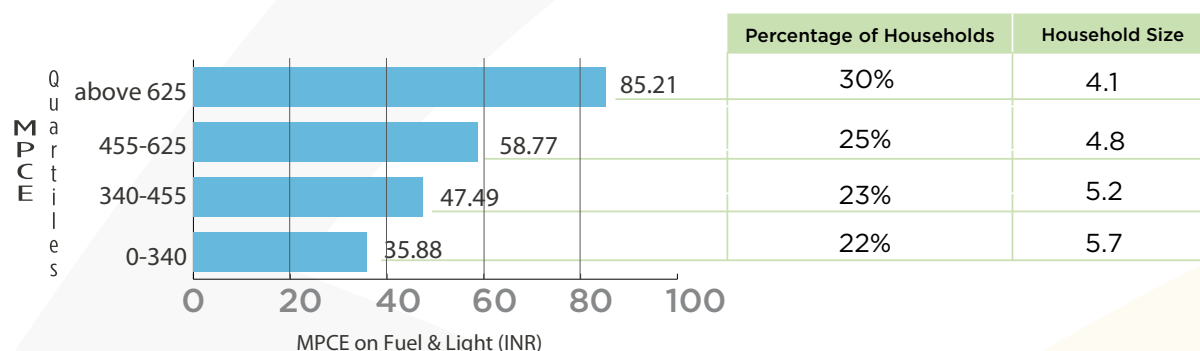


Figure 6 A : Fuel Expenditure by Rural MPCE Quartiles

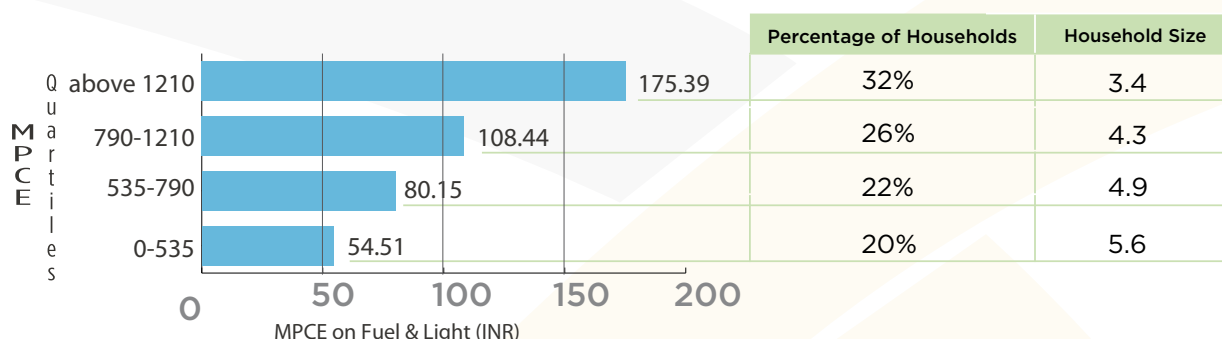


Figure 6 B : Fuel Expenditure by Urban MPCE Quartiles

## Fuel Source and Payment

Close examination of the NSS data reveals that households obtain fuels in a variety of ways<sup>22</sup> - e.g. purchasing, free collection or using homegrown stock. As shown in Figure 7, household fuel acquisition varies considerably from rural to urban areas. For example, while 67% of rural firewood users obtain their firewood through either free collection or home grown stock, 68% of their urban counterparts obtain firewood only through purchase.

The ways in which households obtain fuel wood as well as other cooking and lighting fuels has direct and substantial implications for businesses and impact investors. Isolating households that 'only purchase' fuel or obtain it through a mix of 'both purchase and home grown-stock,' uncovered new insights into the economics of India's fuel market. Specifically, this method isolates patterns and habits of consumption and expenditure among households that pay for fuel, which represents those who are perhaps most likely to purchase fuel saving technologies.

<sup>22</sup> NSS has designated 7 sources from where fuel can be acquired (only purchase, only home-grown stock, both purchase and home-grown stock, only free collection, only exchange of goods and services, only gifts/charities, and other). For this publication, exchange of goods and services and the gifts/charities sources are included within the 'other' category. More information about source codes can be found in Box 2 of the appendix B.

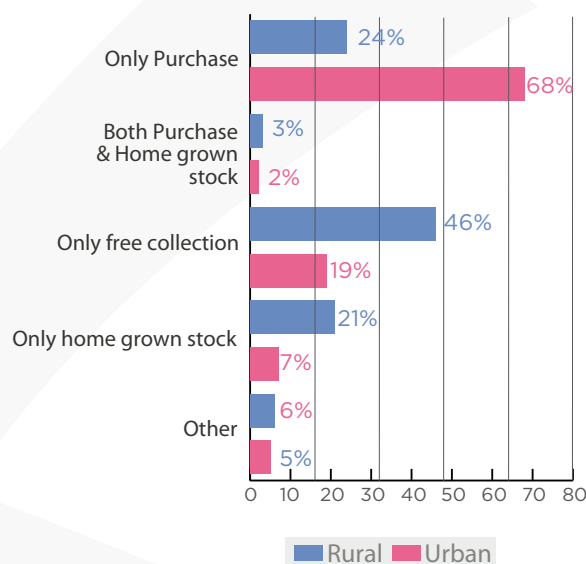


Figure 7 : Percentage of Firewood Users Obtaining Firewood by Source

Figure 8 provides an overview of the percentage of households who report paying for fuel, specifically firewood, cow dung, and electricity. Of rural households, only 27% that use firewood and 21% that use dung cake report paying for them. In stark contrast, of urban households, 69% that use firewood and 58% that use dung cake report paying for them.

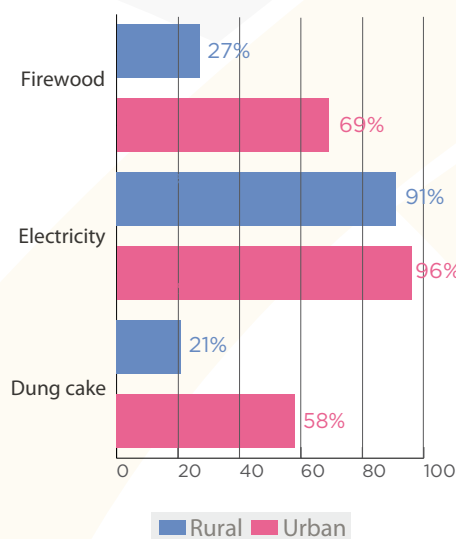


Figure 8 : Percent of Users who Pay

## Market Value vs. Financial Expenditure

As noted in the 'Expenditure on Fuel & Light' portion of Section 3, Indian households consumed a total of 812 billion INR (\$18.04 billion USD) worth of fuel for household energy purposes in the year 2004-05. This figure is often cited, and interpreted, as the amount of money Indian households spend on fuel to meet their cooking and lighting requirements<sup>23</sup>.

<sup>23</sup> These figures are often adjusted for inflation and purchasing power parity.

However, given the thorough examination of data above, the common interpretation masks the complete story of India's household fuel expenditure and, moreover, distorts the genuine potential of the rural energy market in India. While 812 billion INR worth of fuel was consumed by Indian households, 812 Billion INR was not spent on that fuel. This is because the figure reflects the market activity associated with household energy consumption, and does not accurately represent households' *financial expenditure* on these fuels (i.e., the amount of Rupees that households spent on purchases).

A close inspection of NSS methodology reveals that the survey values do not disaggregate the *financial expenditure* from the imputed market values for fuels that were collected for free (**See Appendix B, Box A**). The combination of financial expenditure and imputed values represents the *market value* of the fuel consumed by Indian households. Although market values for fuel and light help researchers and economists understand the overall value of fuel that is consumed throughout the country, they can distort market estimates if used by entrepreneurs and financial institutions looking to identify the likely consumer base for clean energy products and services. For the country, financial expenditure on household fuel and light represents only 73% of the total market value of that fuel and light. In other words, average household financial expenditure on energy is 27% less than the commonly cited market value of average household energy consumption.

## A Note on Market Value and Financial Expenditure

**Market Value** is a term used in this report to refer to the average value of fuel consumed in the past 30 days among households consuming those fuel types. The term 'value' is used because NSS records expenditure as a combination of both the amount of money paid for fuel (financial expenditure) and the imputed market value of fuels collected for free (See Appendix B, Box A).

For example, if the market value of a kilo of firewood is 4 rupees per kilo, and a family uses 10 kilos in a month, then that family consumed 40 rupees worth of firewood regardless of whether or not that family collected the firewood for free. NSS records this as an expenditure of 40 rupees even if no money was spent by the household who used that fuel. It is this 'market value' (the mix of financial expenditure and imputed market values) of fuel that is typically cited in publications analyzing NSS-based fuel consumption and expenditure data in India.

**Financial Expenditure** is a term used in this report to refer to the actual monetary expenditure incurred by the household for the purchase of fuel.

*Households can have access to fuel in different ways:*

- from purchase
- from the receipt in exchange of goods and services
- from free collection
- from home grown stock, gifts, etc.

As mentioned earlier, the value recorded in the NSS survey is the combination of the actual monetary expenditure on fuel through purchase as well as the imputed market value of fuel that was not purchased (such as gathered from home free collection). Financial expenditure excludes these imputed values to show the average amount of money that is spent to purchase fuel.

Financial Expenditure is calculated by filtering the expenditure figures for each fuel type in Block 6 by households acquiring the fuel under source codes 1 or 3 ('only purchase' or 'both purchase and home-grown stock'). This method reveals the consumption and expenditure habits exclusively from families who pay for fuel. More specifically, this shows the INR amount that exchanged hands for fuel purchases.

## Market Value Vs. Financial Expenditure

	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel & Light (INR)	41,667,000,000	24,513,000,000	25,998,000,000	24,854,000,000
Average MPHE on Fuel & Light (INR)	277.49	163.25	456.48	436.38
Percentage of Market Value		59%		96%

Table 5

Table 5 shows that there is a substantial difference between *market value* and *financial expenditure* for household fuel consumption (percentages highlighted in red). This difference is most striking in rural India where financial expenditure makes up just 59% of the market value for fuel and light. In aggregate, the total financial expenditure for fuel and light across India in 2004-05 was 49.37 billion INR (\$1.10 billion USD) per month, or 592.4 billion INR (\$13.16 billion USD) annually.

Interestingly, the total financial expenditure (24.5 Billion INR/month) on fuel and light by India's 150 million rural households is nearly equal to the financial expenditure (24.8 Billion INR/month) on fuel and light by India's 57 million urban households. This insight has direct implications for organisations attempting to tap into the rural energy market as rural households are spending the equivalent of \$3.63 USD/month for fuel and light, not \$6.16 USD/month as often assumed.

### 3.4 Consumption and Expenditure Patterns for Individuals Fuel Types

#### Fuel Usage Figures

As evidenced above, the NSS data provide rich insight into aggregate fuel use and consumption among Indian households. In addition to the broader perspective, NSS data also contain information about household consumption and expenditure patterns for individual fuel types. This section provides a specific overview of fuel usage, consumption and expenditure for each major fuel category.

Monthly Consumption of Firewood	All India	Rural	Urban
Number of Households Using	147,169,000	129,694,000	17,475,000
Average Quantity/HH/Mo (kg.)	117.4	121.2	89.5
% of Users Paying	32%	27%	69%
Average MPHE (INR)	138.12	139.86	133.17

Table 6

Approximately 147 million households across India report consuming firewood, with 88% of these households residing in rural locales. According to the NSS data, firewood-using households consume approximately 117 kg of firewood, with rural households and urban households consuming 121 kg and 90 kg respectively. At this level of usage, households across India consumed 17.2 billion kg of firewood per month during the 2004-5 survey period, representing a market value of almost 20 billion INR (\$438 million USD) per month.

As shown in Table 6, only 27% of rural households and 69% of urban households report paying for firewood. The analysis presented here suggests that in aggregate, households spend approximately 6.5 billion INR (\$144 million USD) per month on firewood with approximately 4.9 billion INR (\$108 million USD) of this expenditure coming from rural households.

Monthly Consumption of Dung Cake	All India	Rural	Urban
Number of Households Using	74,604,000	68,801,000	5,803,000
% of Users Paying	24%	21%	58%
Average MPHE (INR)	70.07	71.57	63.75

Table 7

According to the NSS data, approximately 74 million households across India use dung cakes for fuel<sup>24</sup>, 92% of which are rural. The total all-India market value of household dung cake consumption is approximately 5.2 billion INR (\$115 million USD) per month. As observed with firewood use, a limited number of households across India report paying for dung. Table 7 shows that only 24% of households that use dung cake purchase it. As might be expected, only 21% of rural dung cake-using households report purchase. In contrast, 58% of their urban counterparts report purchasing dung cake for fuel. According to our estimates, the all-India household financial expenditure for dung cake is 1.24 billion INR (\$27.6 million USD) per month.

Monthly Consumption of Kerosene	All India	Rural	Urban
Number of Households Using	163,247,000	134,324,000	28,922,000
Average Quantity/HH/Mo (litre)	3.7	3.4	5.3
Average MPHE (INR)	45.64	39.86	72.50

Table 8

<sup>24</sup> NSS does not collect data on the quantities of dung cake used

According to the NSS data, over 163 million households use kerosene to meet their lighting and cooking fuel needs. Over 82% of kerosene-using households (134.3 million) are rural. The average rural kerosene-using household reported consuming 3.4 liters of kerosene per month for lighting and cooking. In contrast, urban kerosene-using households reported consuming 5.3 liters of kerosene per month. Table 8 shows that the total all-India consumption of kerosene was over 600 million liters per month, with a market value of approximately 7.45 billion INR (\$165 million USD).

## Market value of Kerosene in India

In India, kerosene can be obtained through the Public Distribution System (PDS) at a highly subsidized rate, and through market distributors at market rates. Indian households typically acquire kerosene from both sources (subsidized and unsubsidized). In the NSSO survey, kerosene is disaggregated into two categories: 'Kerosene PDS' and 'Kerosene Other'. The Kerosene PDS is assigned a mandatory code of purchase. In the 'Kerosene Other' category, over 99% of respondents report paying for it. As the percentage of households that manage to acquire kerosene without purchase is negligible (less than 1%), the two source codes have been combined for analysis in this report. Furthermore, the difference in the financial value of kerosene is negligible from the market value. Therefore, only average household market value of kerosene is presented in this report.

Monthly Consumption of LPG	All India	Rural	Urban
Number of Households Using	51,052,000	17,502,000	33,550,000
Average Quantity/HH/Mo (Kg.)	10.9	9.0	11.9
Average MPHE (INR)	228.63	189.73	248.92

Table 9

According to NSS data, 51 million households in India consume LPG, more than half (66%) of which are urban. Table 9 shows that, according to NSS data, the all-India average monthly consumption of LPG is approximately 557 million kg. As is the case with kerosene, there is no option to acquire LPG without purchase, so the financial and market values are statistically equal. The all-India household market value of LPG is approximately 11.7 billion INR (\$259 million USD) per month.

Monthly Consumption of Electricity	All India	Rural	Urban
Number of Households Using	133,160,000	81,801,000	51,359,000
Average Quantity/HH/Mo (kwh)	68.4	50.7	96.6
% of Users Paying	93%	91%	96%
Average MPHE (INR)	159.45	106.02	240.50

Table 10

According to NSS data, approximately 133 million households across India report consuming electricity, with approximately 61% in rural areas. As shown in Table 10, rural households who use electricity consumed approximately 51 kwh of electricity per month, while their urban counterparts consumed 97 kwh per month. In total, households across India reported consuming over 9 billion kwh of electricity per month over the survey period. The consumption represents a market value of approximately 20.5 billion INR (\$456 million USD) per month.

93% of households in India report paying for electricity services. Of urban households who consume electricity, 96% report paying for, while 91% of their rural counterparts report paying for electricity. Based on the 2004-05 NSSO data, the total household financial expenditure on electricity was approximately 19.7 billion INR per month (\$438 million USD).

## Section 4: State Comparisons (Rural Perspective)

India is a vast country with exceptional diversity at the regional, state, and sub-state levels. Aggregate national data provide useful insights on the large-scale patterns of energy usage and consumption for India as a whole. However, aggregate data mask important variations in household fuel usage and consumption, as evidenced by the distinctions in consumption and usage patterns between urban and rural households highlighted in this report.

The next two sections provide a more granular presentation of the household fuel use, consumption and expenditure that are described in Sections 1 through 3. Specifically, the following sections present the NSS data in several charts that highlight the variations in rural household characteristics, as well as fuel consumption and expenditure, across states. Section 4 compares states' rural household characteristics that are pertinent to fuel use. The charts highlight distinctions of rural household fuel use across India's states. Section 5 provides a summary of usage, consumption and expenditure data for each state.

Figure 9 : Rural Household Size

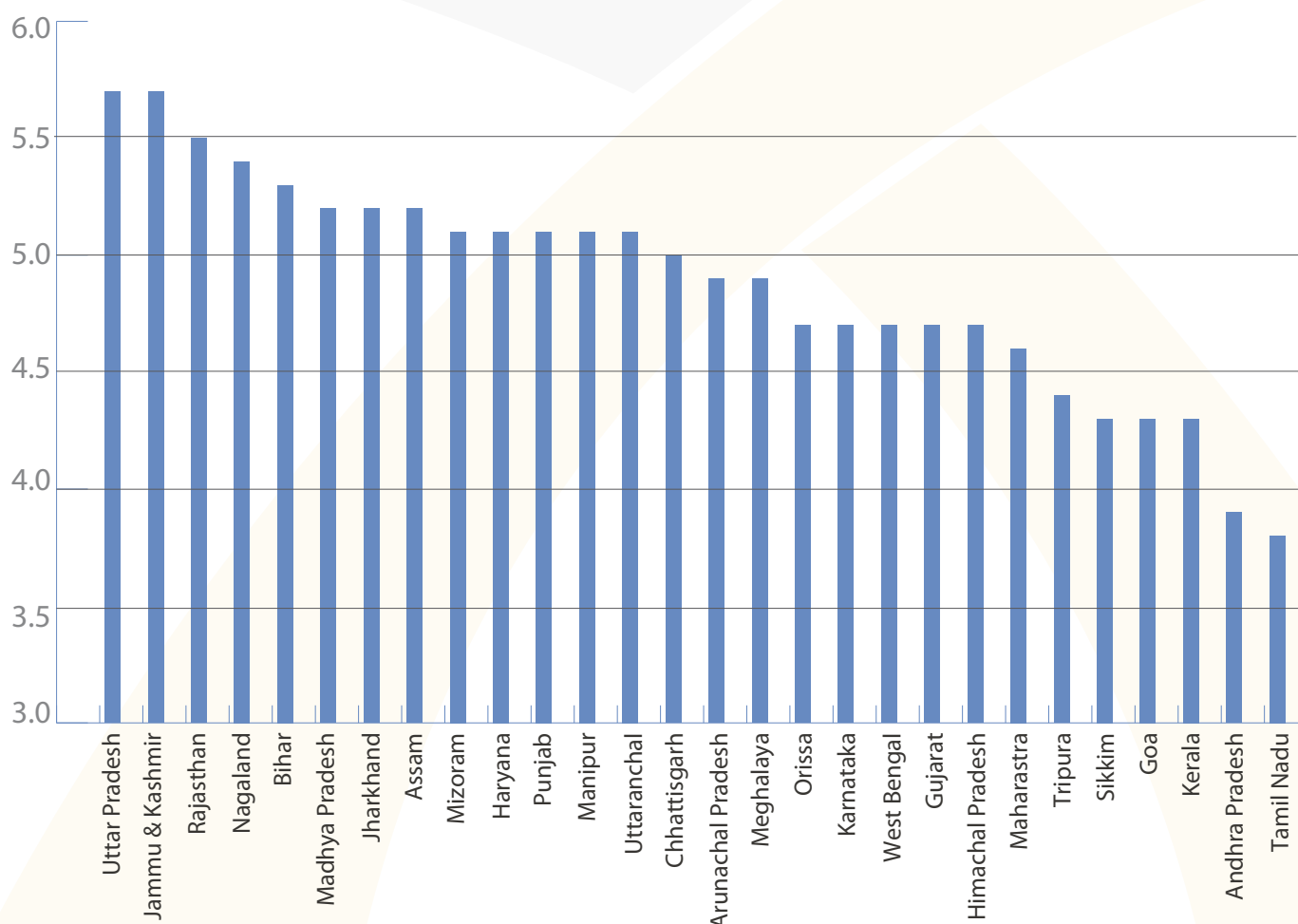


Figure 10 : Percent of Rural Households Using Each Energy Type as a Primary Cooking Fuel

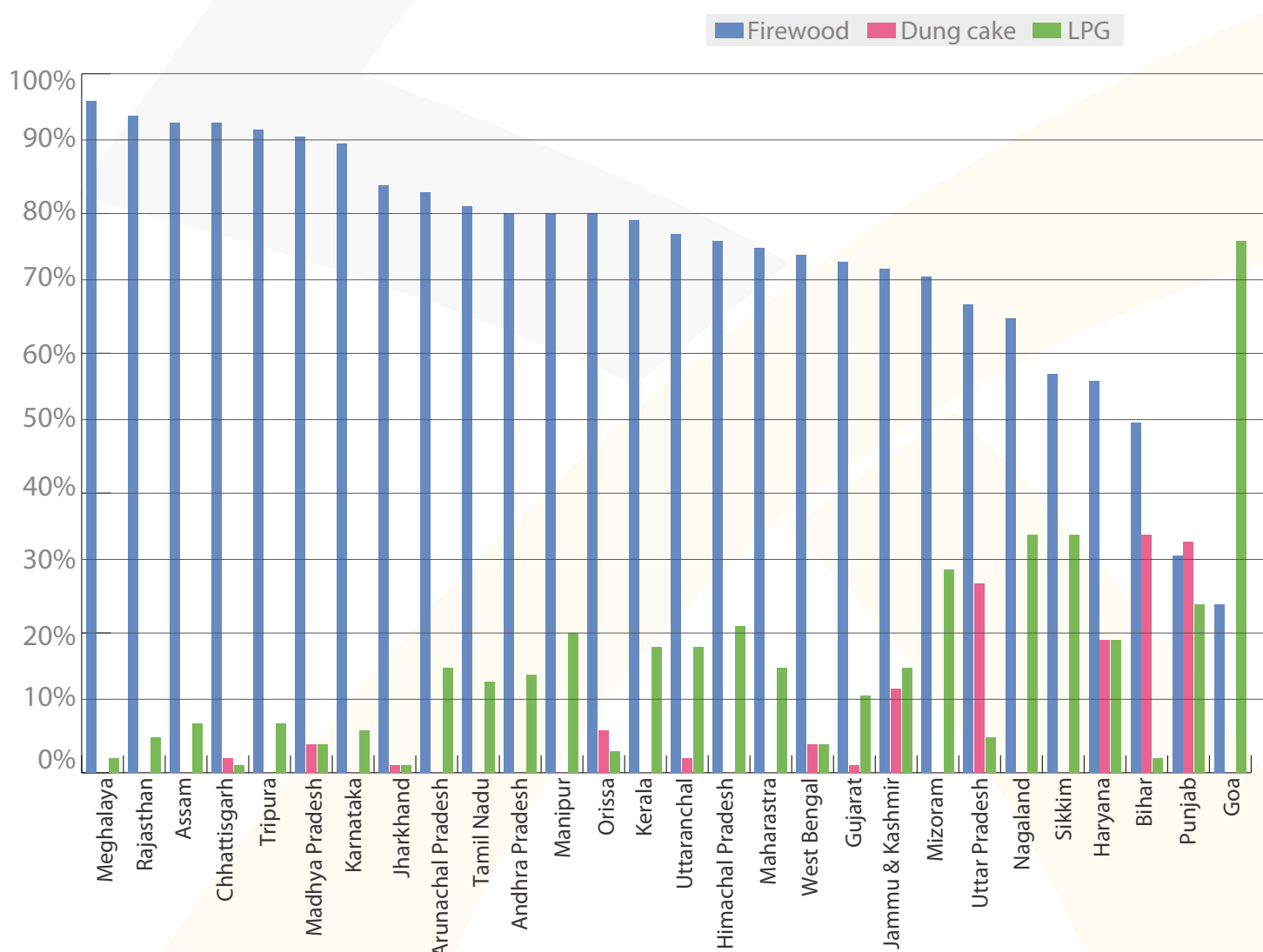


Figure 11 : Percent of Rural Households Using Each Energy Type as a Primary Lighting Source

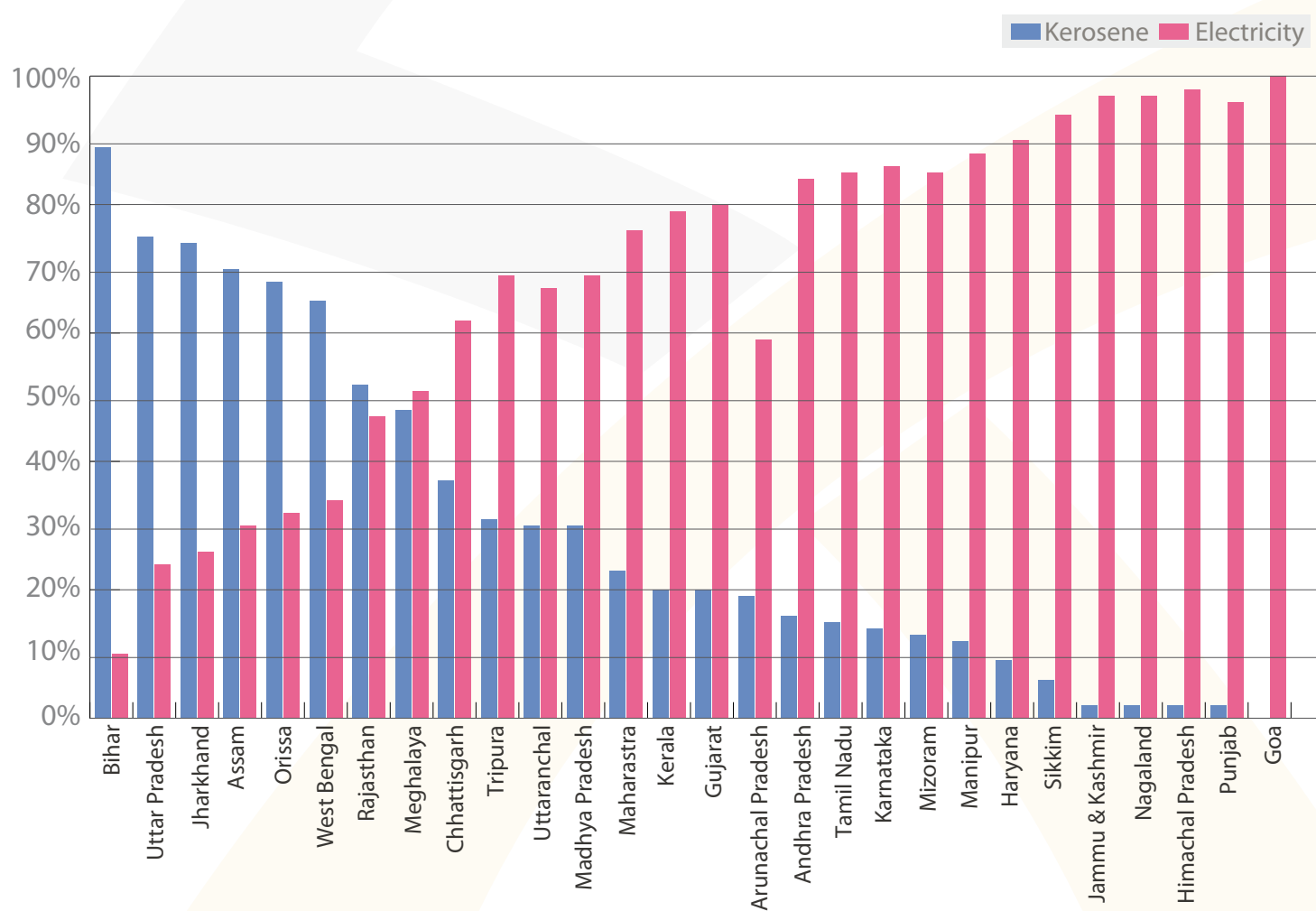


Figure 12 : Rural MPHE on Fuel & Light in Rupees/MO  
(Financial Expenditure)

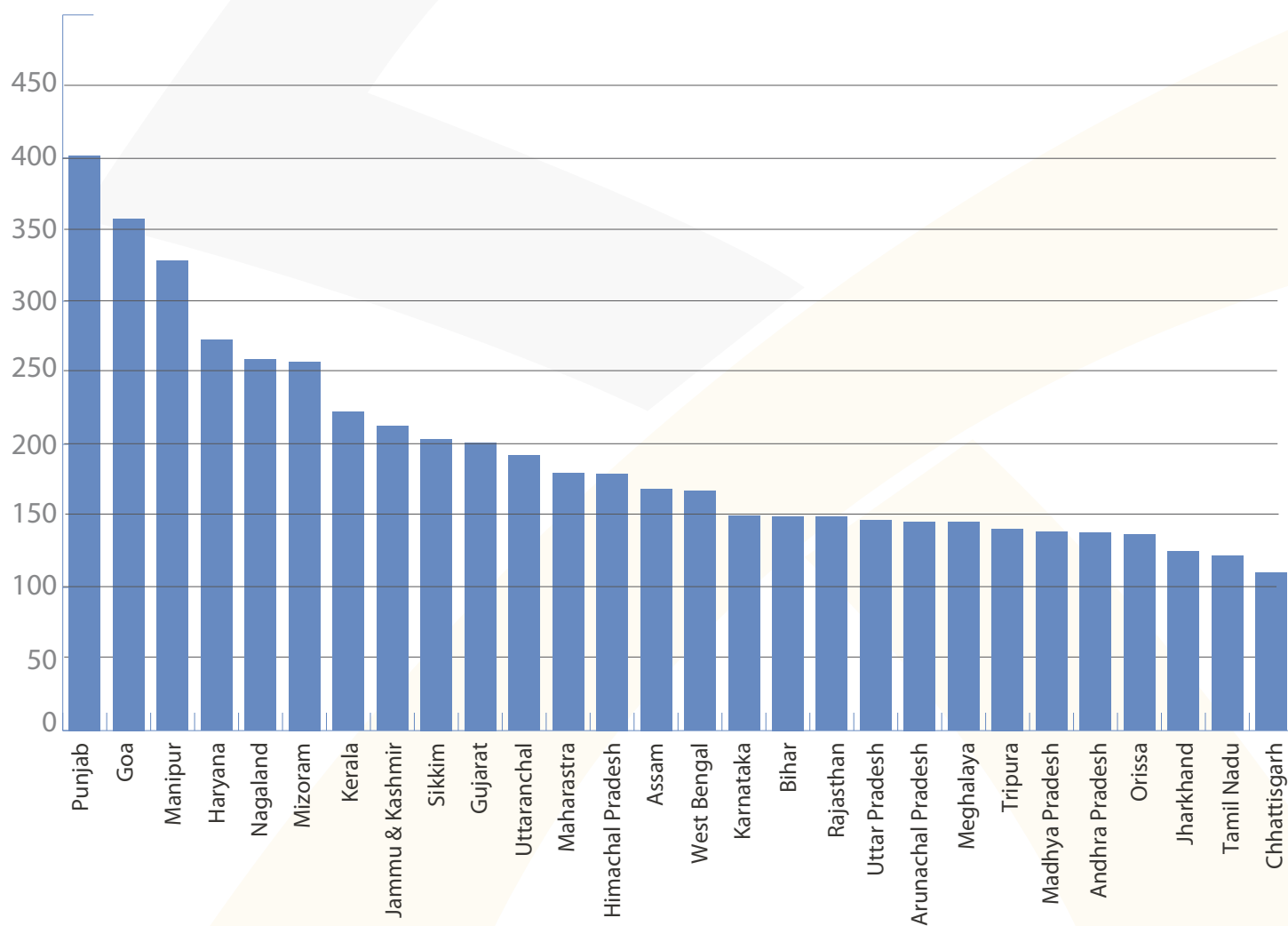


Figure 13 : Percent of Rural Households Using Dung Cake

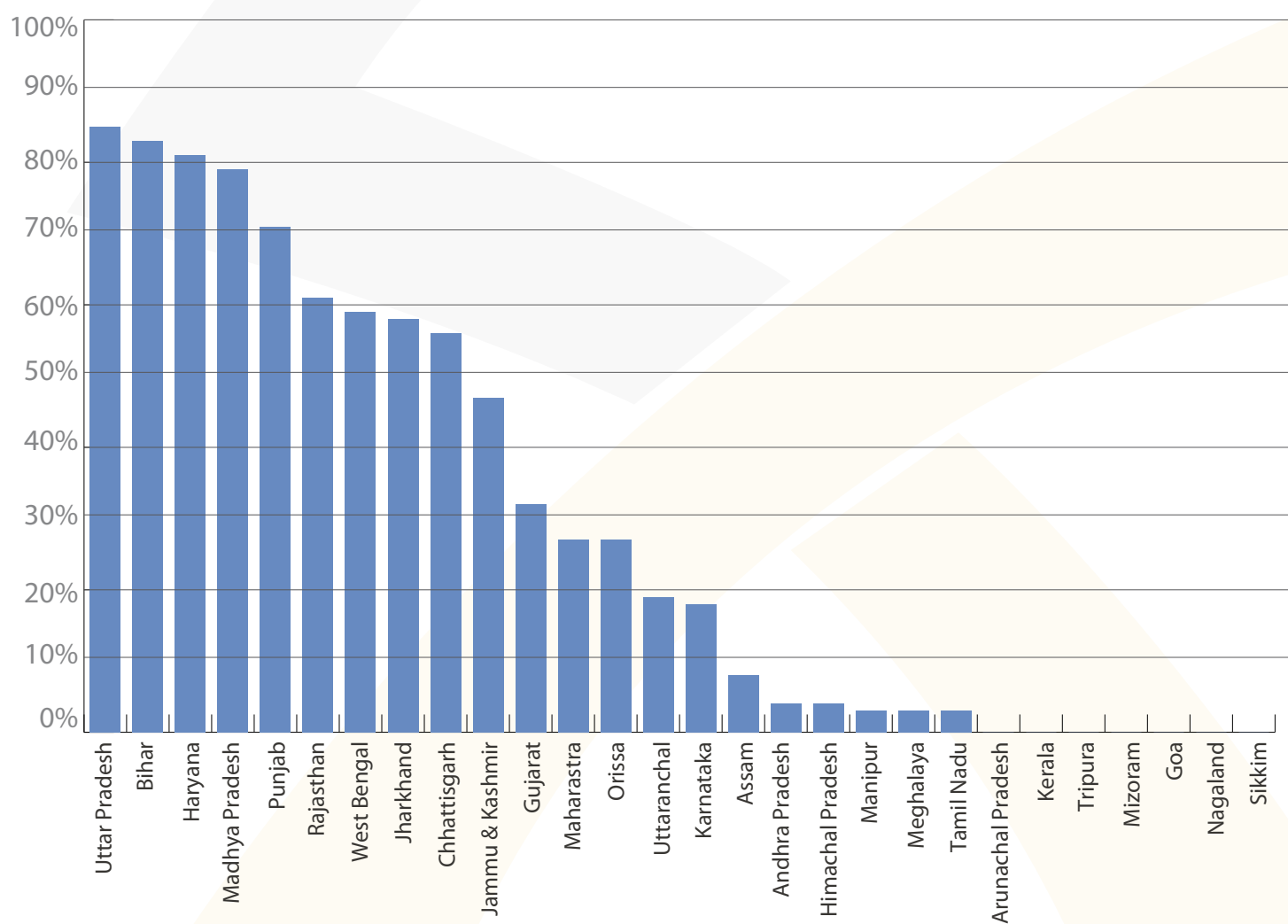


Figure 14 : Percent of Rural Households Using Firewood

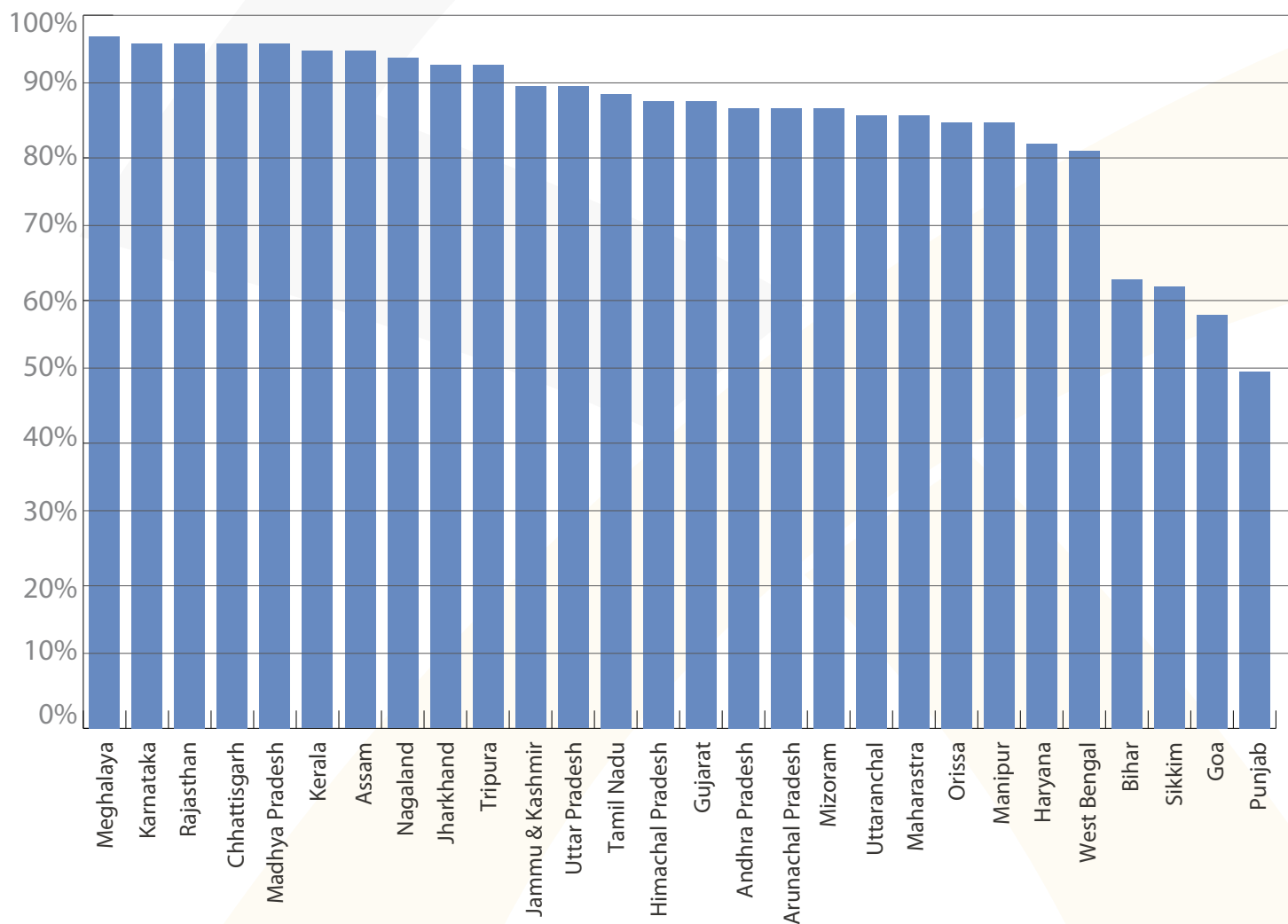


Figure 15 : Percent of Rural Households Using Kerosene

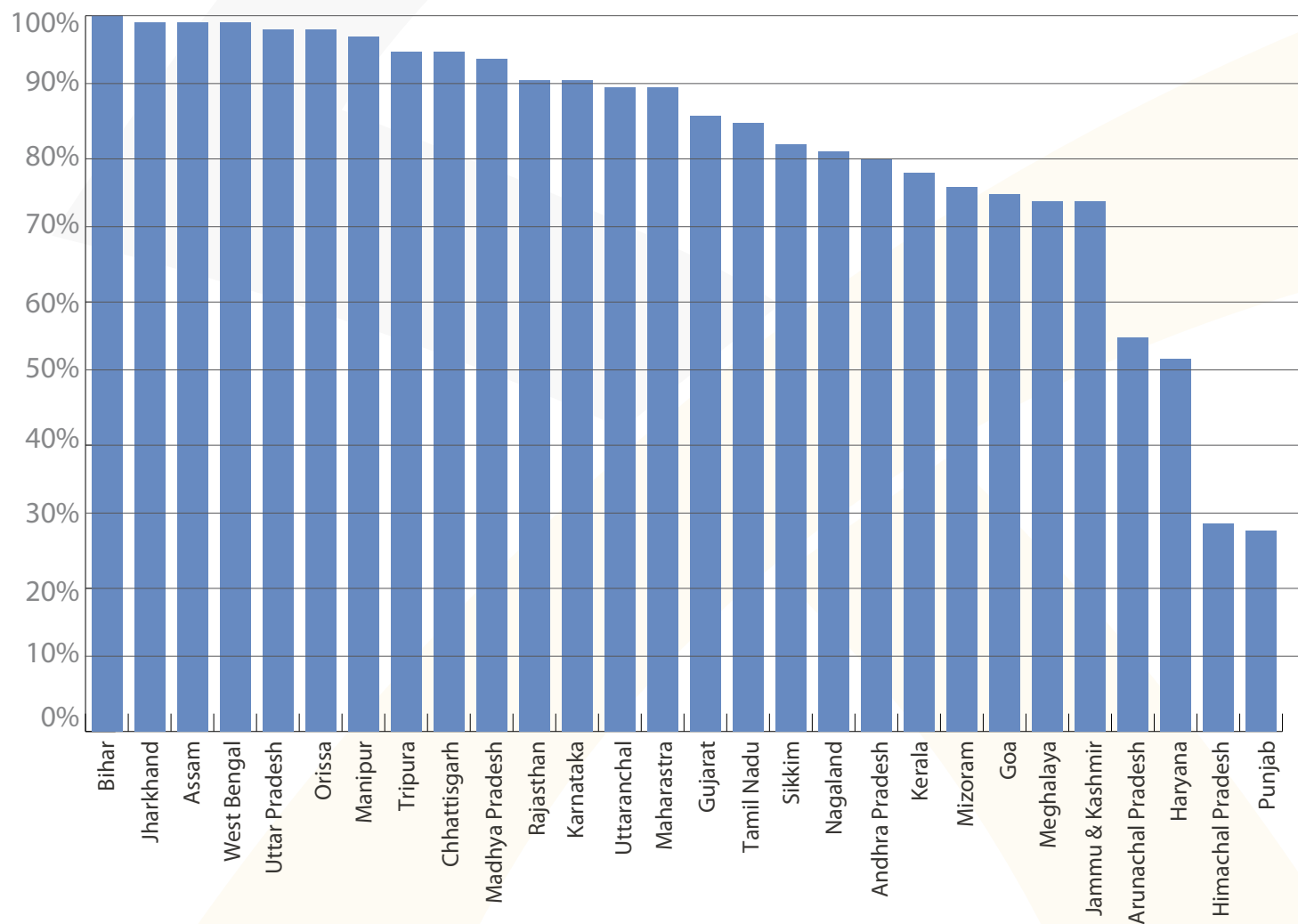


Figure 16 : Percent of Rural Households Using LPG

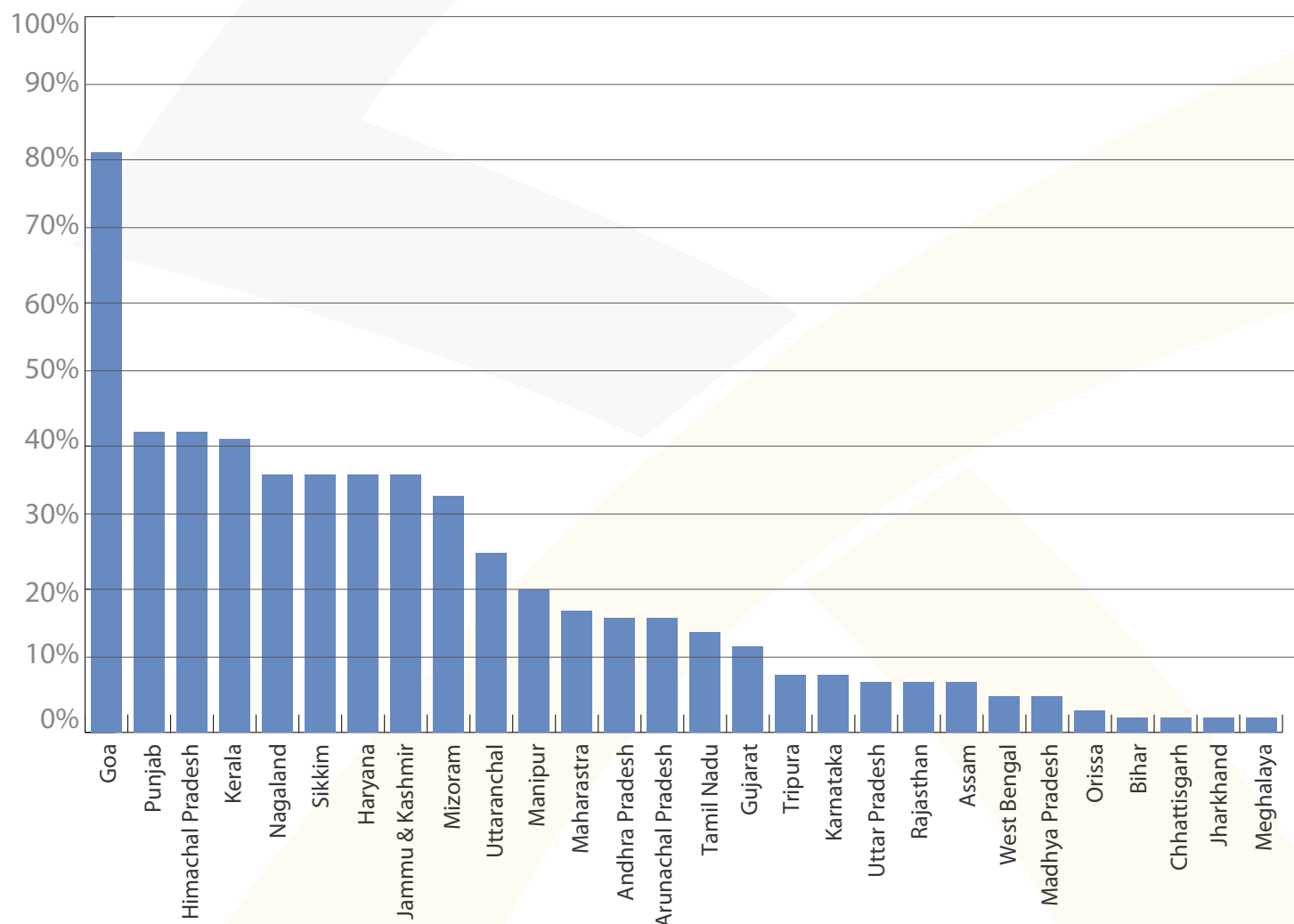


Figure 17 : Percent of Rural Households Using Electricity

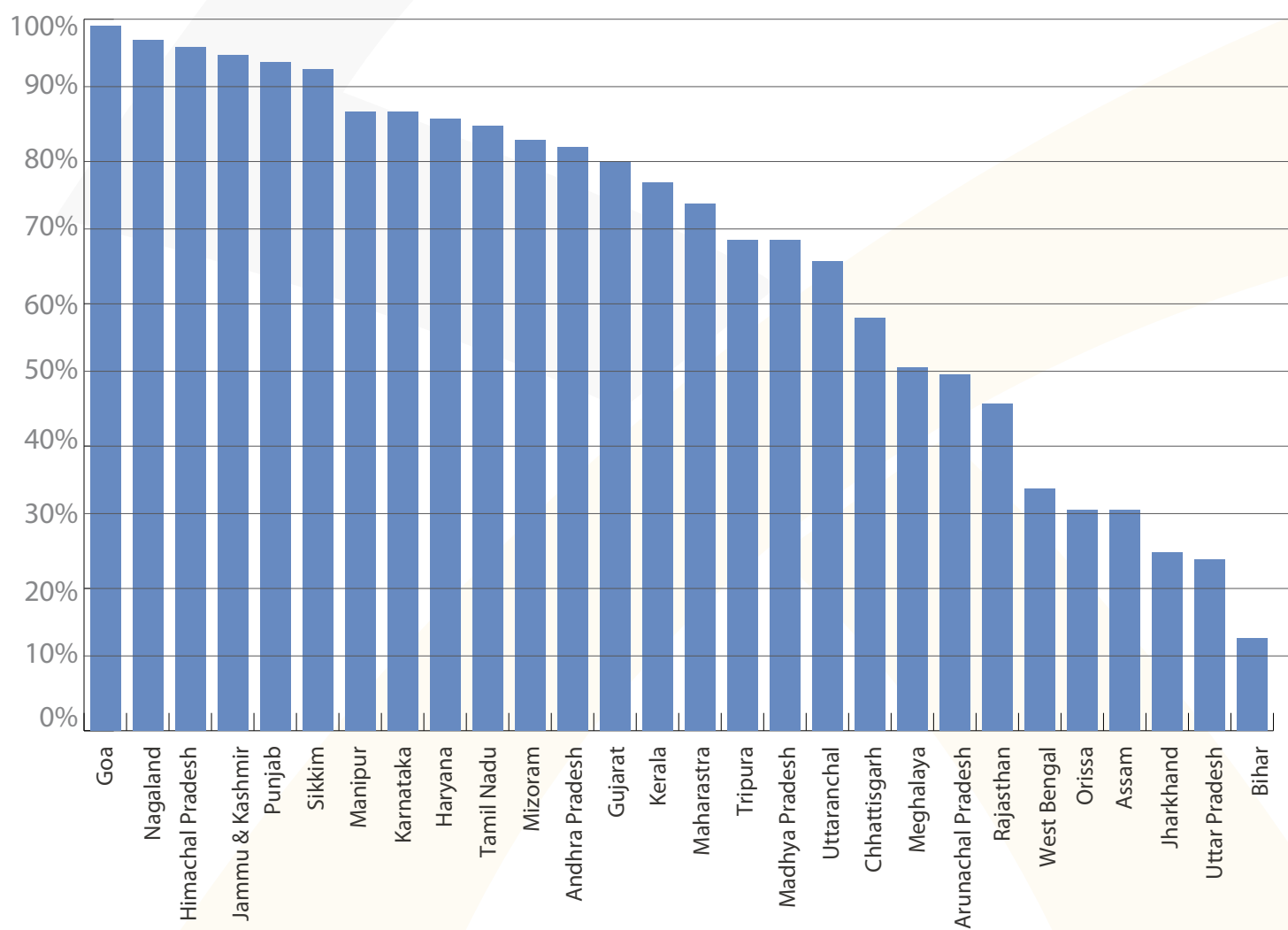
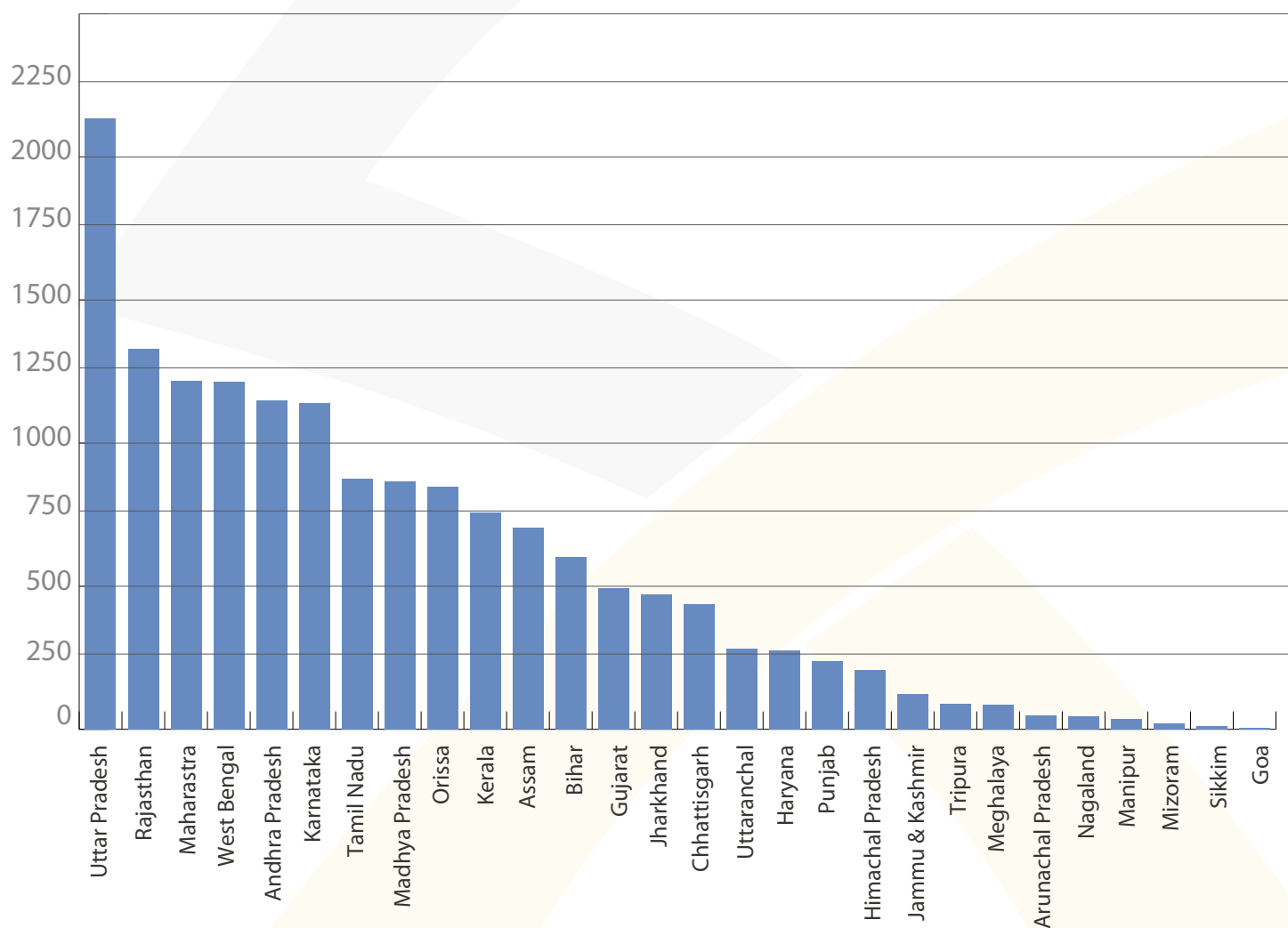


Figure 18 : Total Quantity of Firewood Consumed by Rural Households Per Month  
(In Millions of Kilograms)



## Section 5: Household Energy Data by State

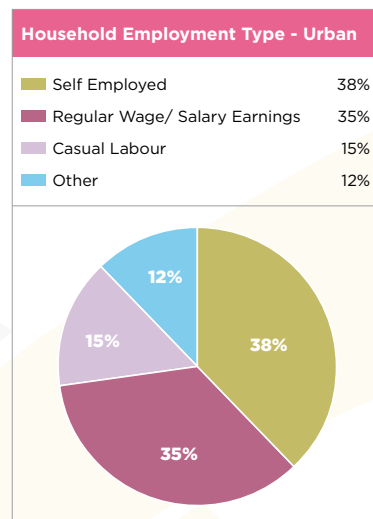
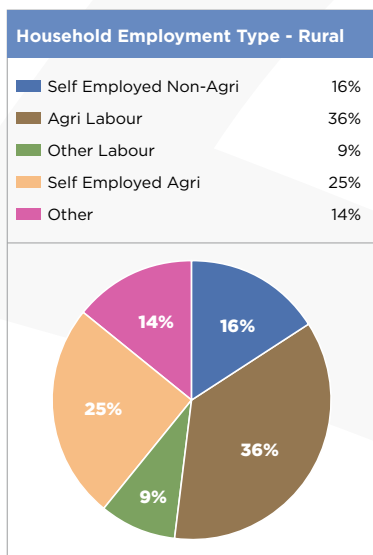
This section disaggregates the 'All India' data for household fuel usage, expenditure and consumption described in Section 3 for each of India's 28 states (rural & urban). Data from Union Territories are not included in this section due to small sample sizes. All 28 states are represented in alphabetical order from Andhra Pradesh to West Bengal. A detailed explanation of similar data for all India is described in Section 3.

1. Andhra Pradesh .....	37
2. Arunachal Pradesh .....	41
3. Assam.....	45
4. Bihar .....	49
5. Chhattisgarh .....	53
6. Goa .....	57
7. Gujarat .....	61
8. Haryana .....	65
9. Himachal Pradesh .....	69
10. Jammu and Kashmir .....	73
11. Jharkhand .....	77
12. Karnataka .....	81
13. Kerala .....	85
14. Madhya Pradesh .....	89
15. Maharashtra .....	93
16. Manipur .....	97
17. Meghalaya .....	101
18. Mizoram .....	105
19. Nagaland.....	109
20. Orissa .....	113
21. Punjab.....	117
22. Rajasthan .....	121
23. Sikkim.....	125
24. Tamil Nadu .....	129
25. Tripura.....	133
26. Uttar Pradesh .....	137
27. Uttaranchal .....	141
28. West Bengal .....	145

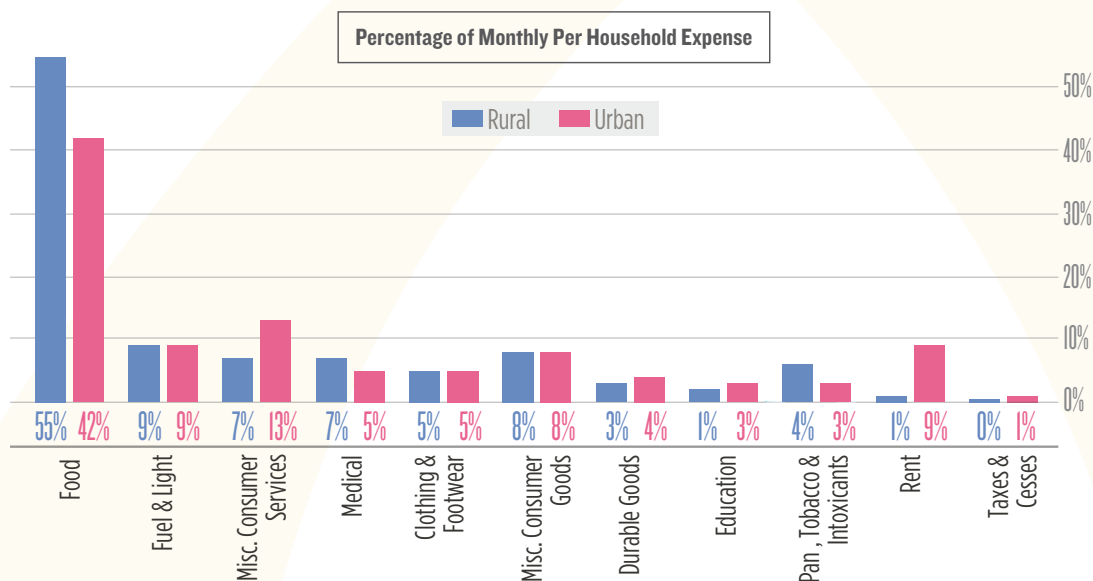


## Section 1: Andhra Pradesh overview (Households, Employment and Expenditure)

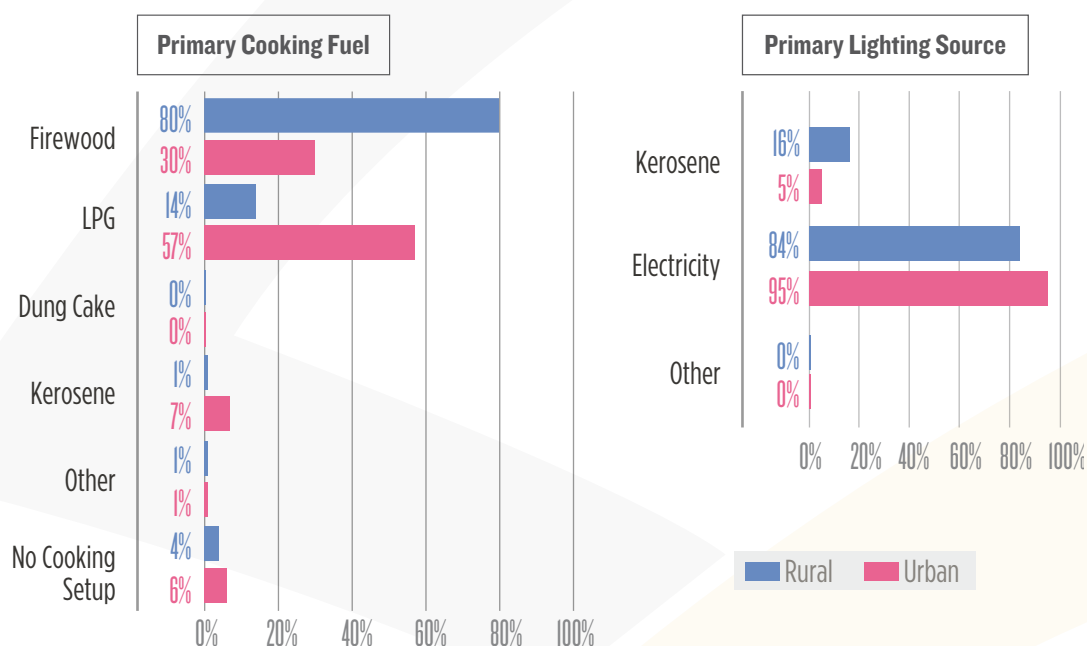
	Rural	Urban
No. of Households	13,770,712	4,731,801
% of India's Household Population	8.9%	
Average Household Size	3.94	3.94



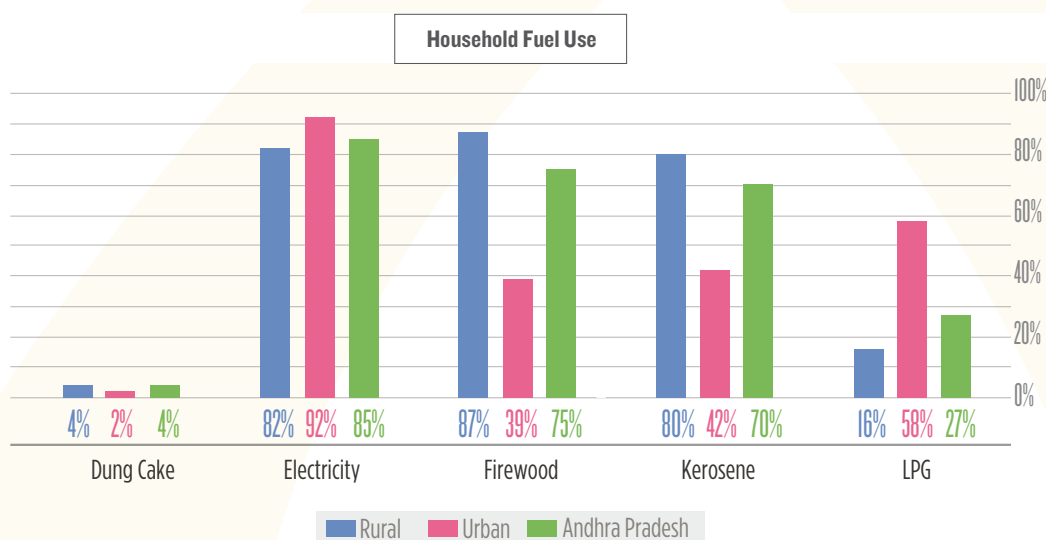
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	2,302.62	4,005.65	2,738.15

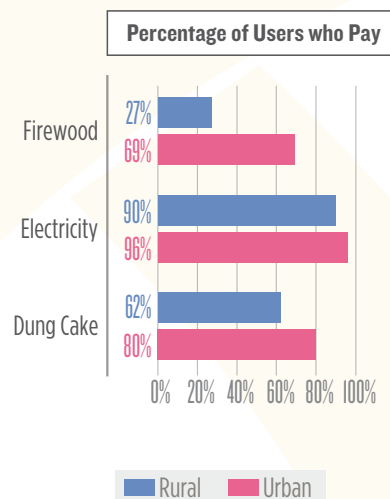
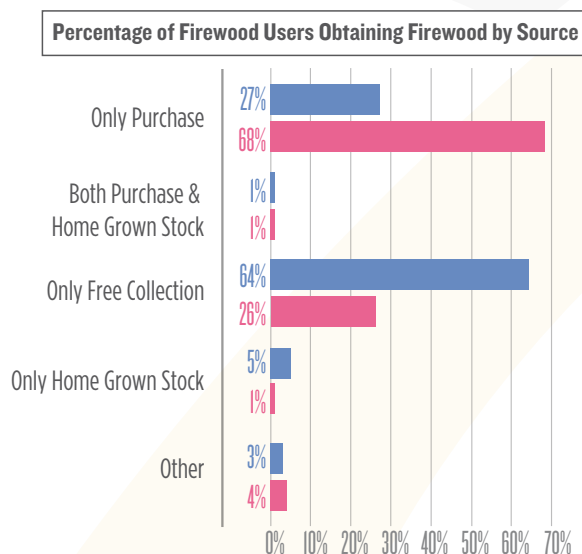
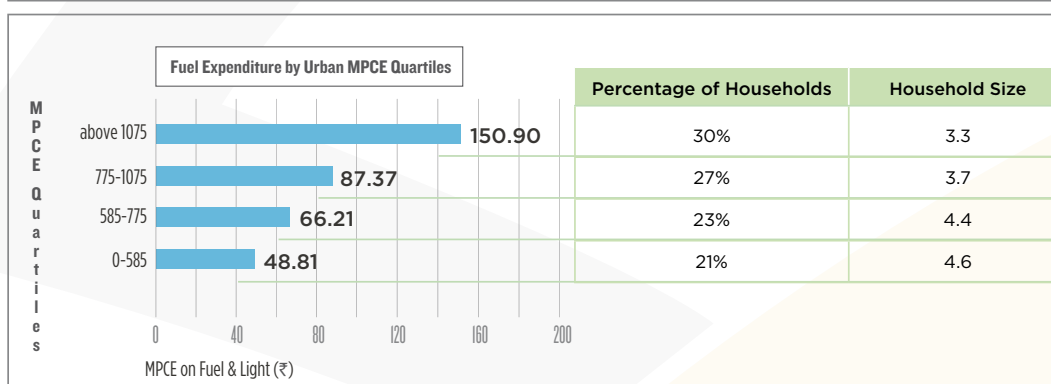
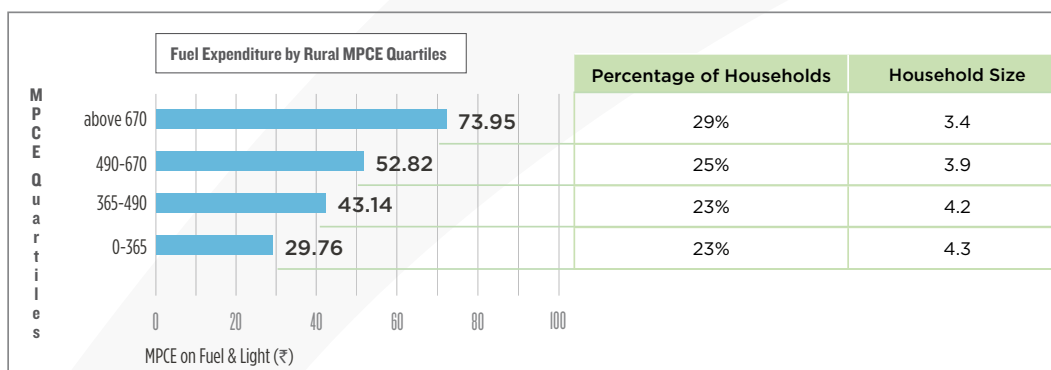


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	2,706,445,272	1,645,922,833	4,352,367,770
Average MPHE on Fuel & Light	196.54	347.84	253.23





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	2,706,445,272	1,906,118,860	1,645,922,833	1,578,168,968
Average MPHE on Fuel (₹)	196.54	138.42	347.84	333.52
Percentage of Market Value		70%		96%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Andhra Pradesh
Number of Households Using	11,991,597	1,863,565	13,855,163
Average Quantity/HH/Mo (kg.)	95.7	73.1	92.7
% of Users Paying	27%	69%	33%
Average MPHE (₹)	93.86	97.92	95.00

Monthly Consumption of Dung Cake	Rural	Urban	Andhra Pradesh
Number of Households Using	611,847	80,271	692,118
% of Users Paying	62%	80%	64%
Average MPHE (₹)	25.62	21.80	25.07

Monthly Consumption of Kerosene	Rural	Urban	Andhra Pradesh
Number of Households Using	11,037,228	1,970,013	13,007,241
Average Quantity/HH/Mo (litre)	2.3	4.4	2.6
Average MPHE (₹)	24.55	56.64	29.41

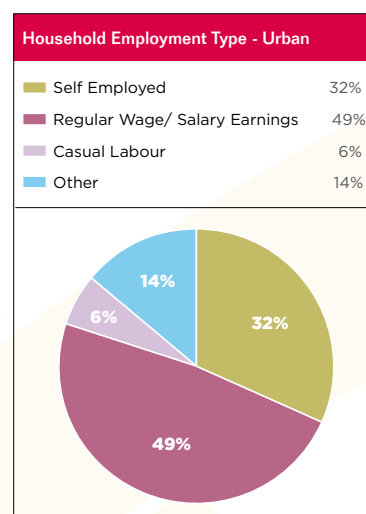
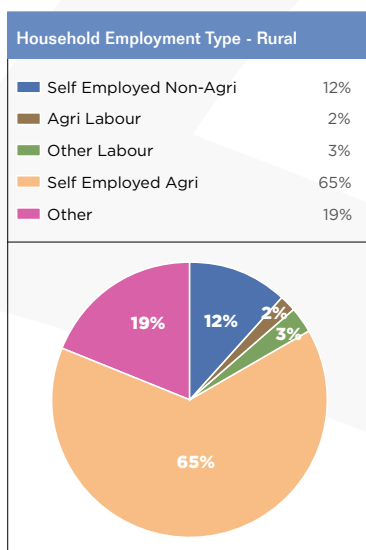
Monthly Consumption of LPG	Rural	Urban	Andhra Pradesh
Number of Households Using	2,207,441	2,759,379	4,966,820
Average Quantity/HH/Mo (kg.)	7.8	9.6	8.8
Average MPHE (₹)	166.81	205.58	188.35

Monthly Consumption of Electricity	Rural	Urban	Andhra Pradesh
Number of Households Using	11,325,530	4,370,408	15,695,938
Average Quantity/HH/Mo (std. units)	44.6	80.0	54.48
% of Users Paying	90%	96%	92%
Average MPHE (₹)	87.00	179.18	113.83

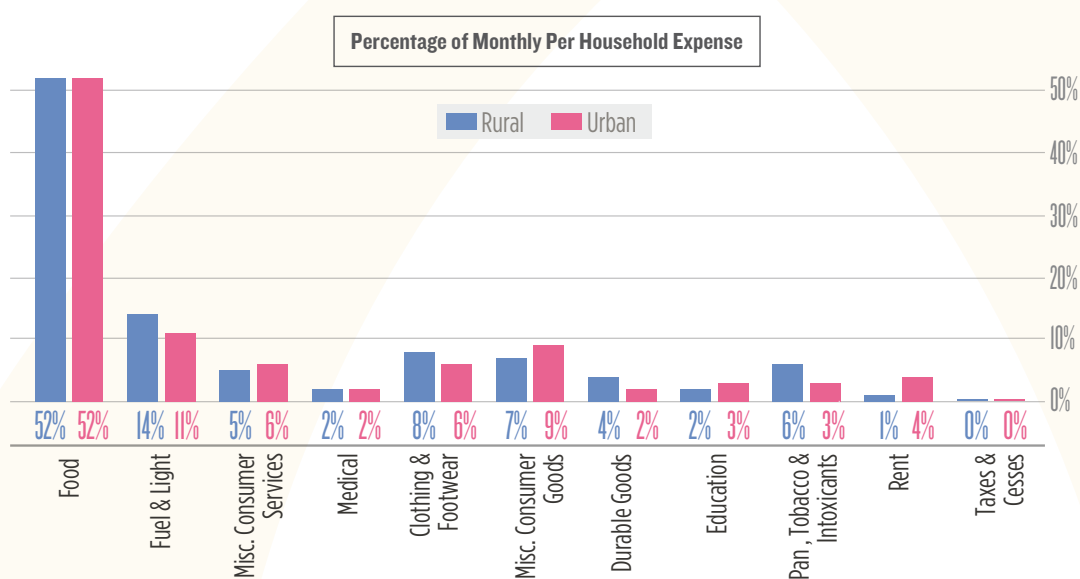


## Section 1: Arunachal Pradesh overview (Households, Employment and Expenditure)

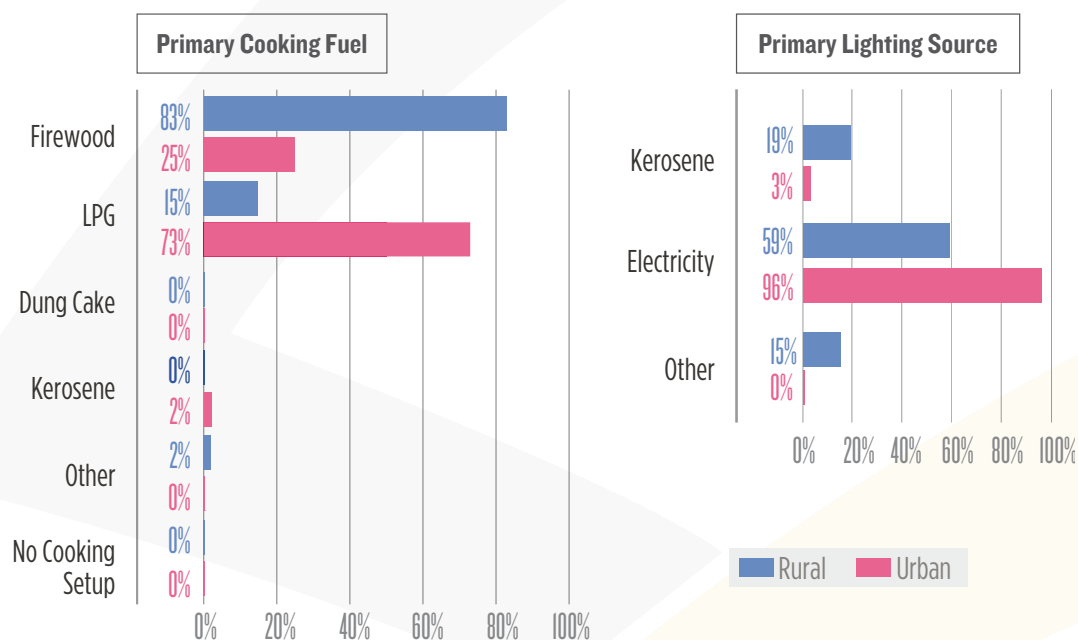
	Rural	Urban
No. of Households	158,244	26,408
% of India's Household Population	0.1%	
Average Household Size	4.87	3.78



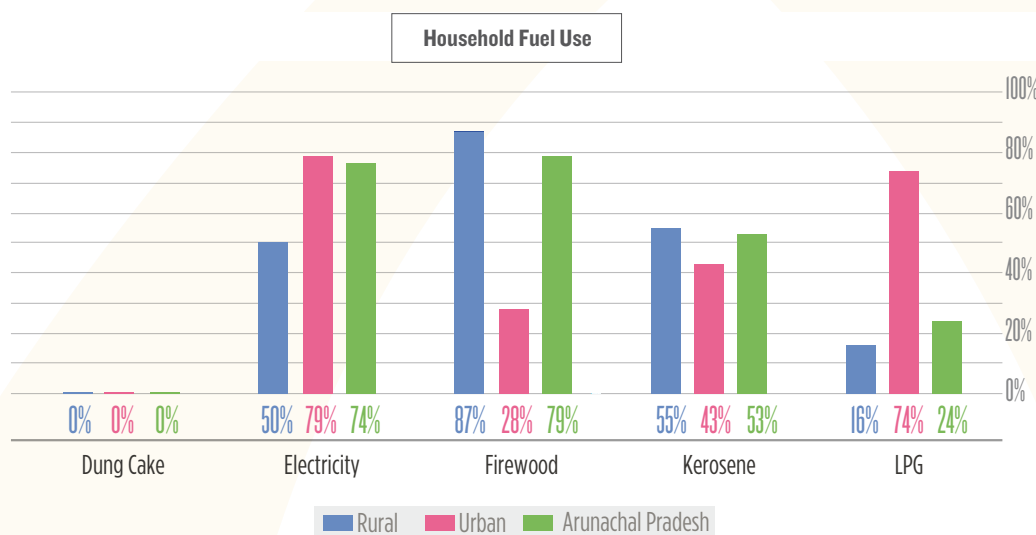
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	3,694.35	3,284.70	3,635.76

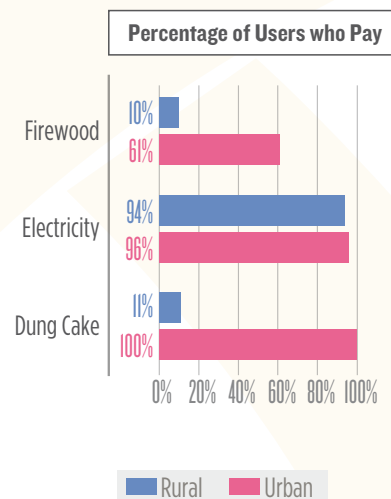
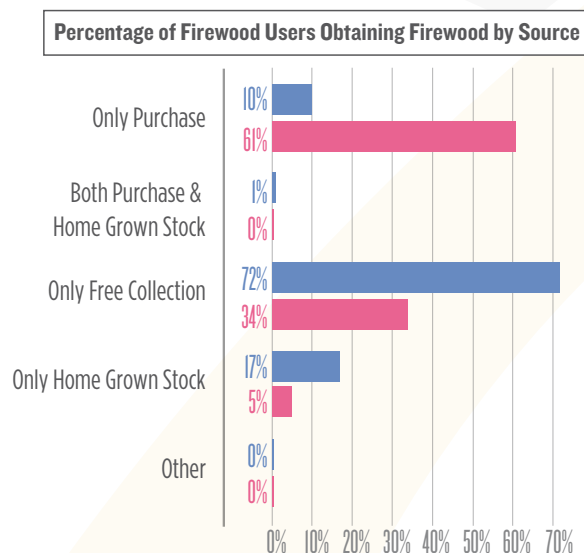
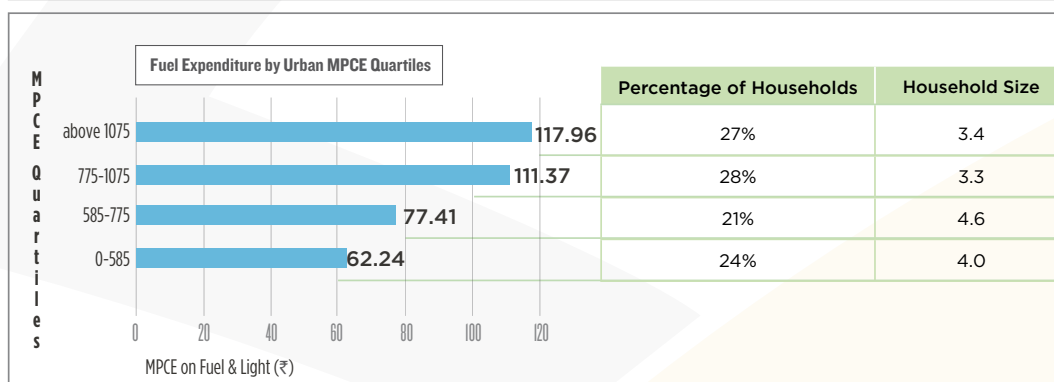
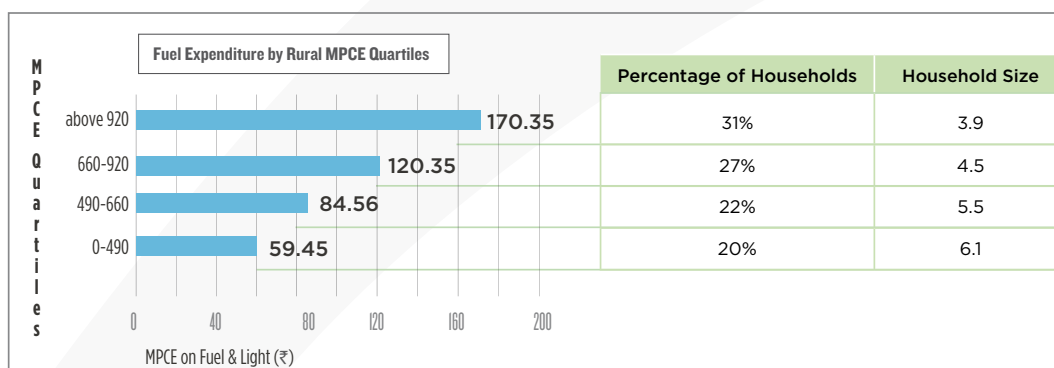


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	83,726,234	9,188,855	92,915,085
Average MPHE on Fuel & Light	529.09	347.96	503.19





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	83,726,234	23,104,155	9,188,855	8,317,520
Average MPHE on Fuel	529.09	146.00	347.96	314.97
Percentage of Market Value		28%		91%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Arunachal Pradesh
Number of Households Using	137,731	7,455	145,185
Average Quantity/HH/Mo (kg.)	343.4	231.7	337.7
% of Users Paying	10%	61%	13%
Average MPHE (₹)	445.19	247.29	397.73

Monthly Consumption of Dung Cake	Rural	Urban	Arunachal Pradesh
Number of Households Using	605	90	695
% of Users Paying	11%	100%	23%
Average MPHE (₹)	193.90	50.24	111.66

Monthly Consumption of Kerosene	Rural	Urban	Arunachal Pradesh
Number of Households Using	86,656	11,367	98,023
Average Quantity/HH/Mo (litre)	4.8	3.6	4.7
Average MPHE (₹)	50.81	47.86	50.46

Monthly Consumption of LPG	Rural	Urban	Arunachal Pradesh
Number of Households Using	24,788	19,632	44,420
Average Quantity/HH/Mo (kg.)	14.8	13.4	14.2
Average MPHE (₹)	297.34	276.86	288.29

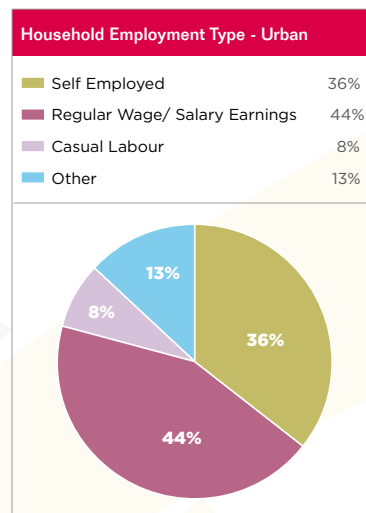
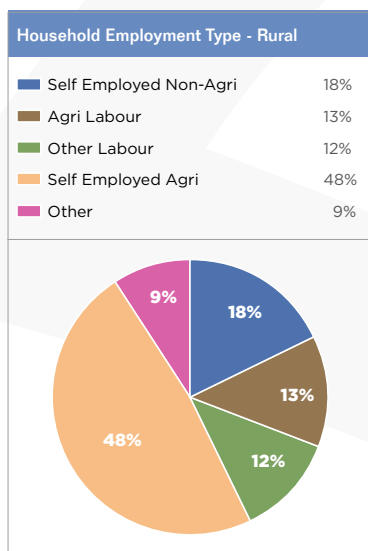
Monthly Consumption of Electricity	Rural	Urban	Arunachal Pradesh
Number of Households Using	78,595	20,962	99,557
Average Quantity/HH/Mo (std. units)	29.6	31.5	29.98
% of Users Paying	94%	96%	94%
Average MPHE (₹)	51.03	52.69	51.39



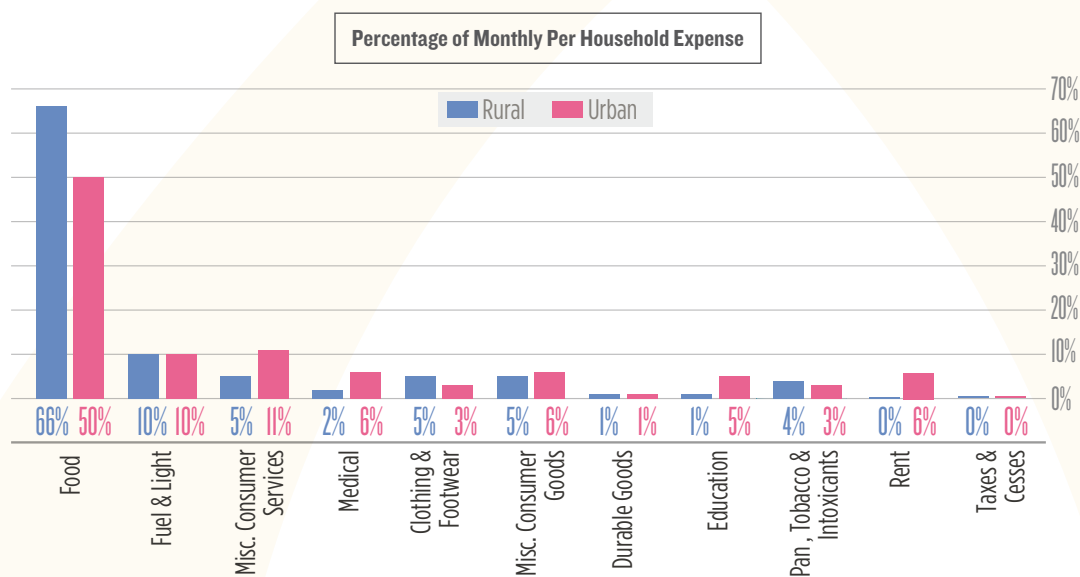
## Section 1: Assam overview

(Households, Employment and Expenditure)

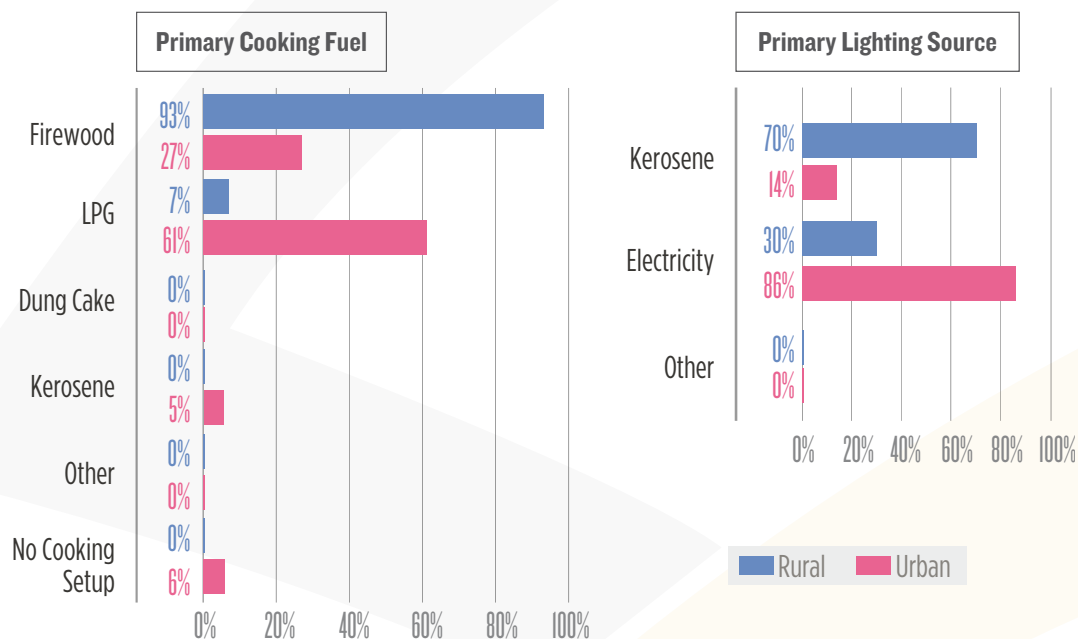
	Rural	Urban
No. of Households	4,442,793	606,068
% of India's Household Population	2.4%	
Average Household Size	5.16	3.86



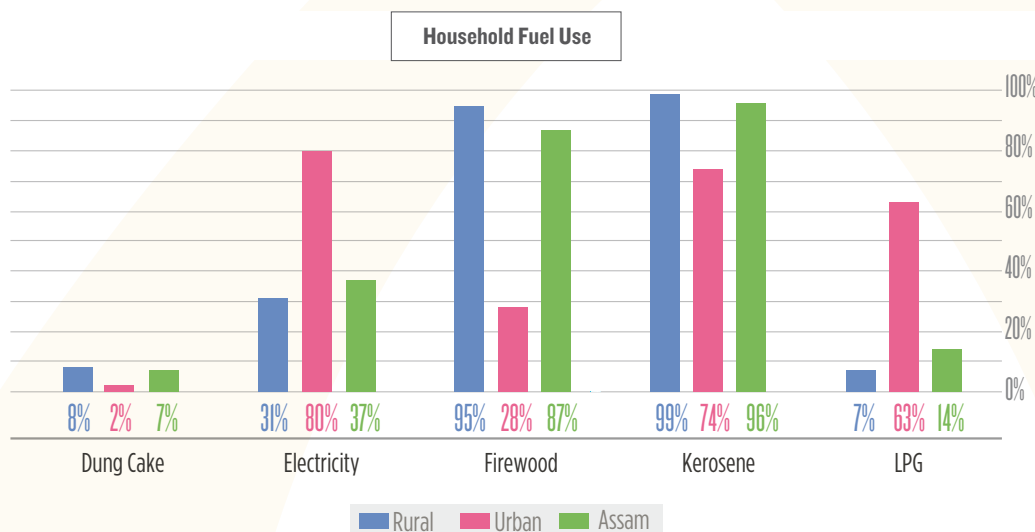
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	2,787.93	4,071.06	2,941.96

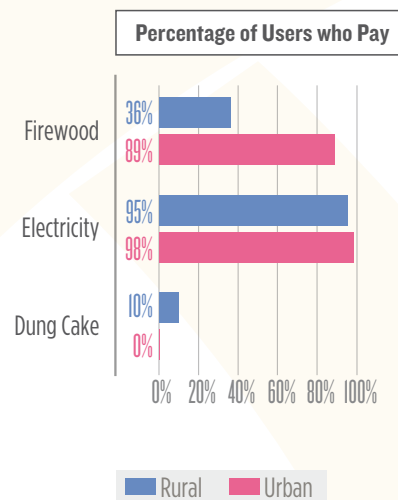
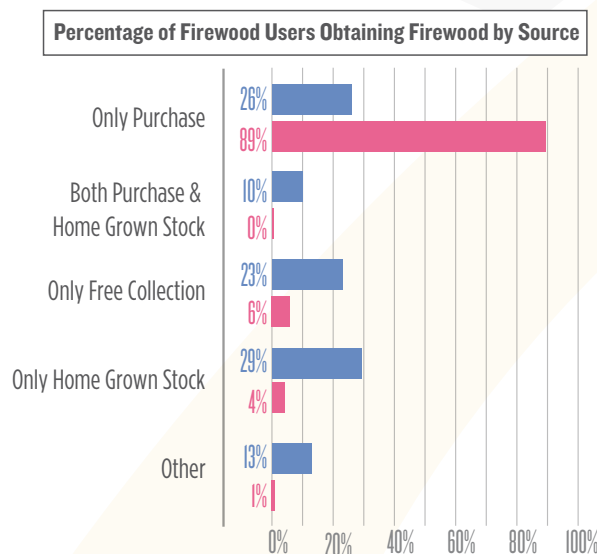
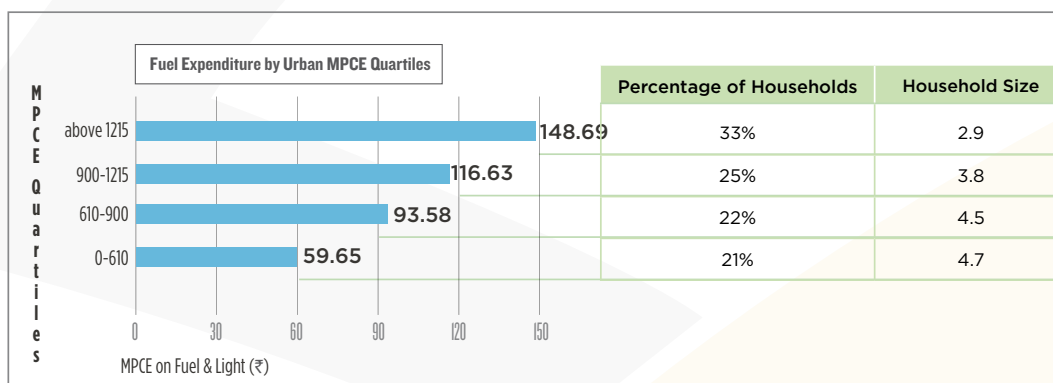
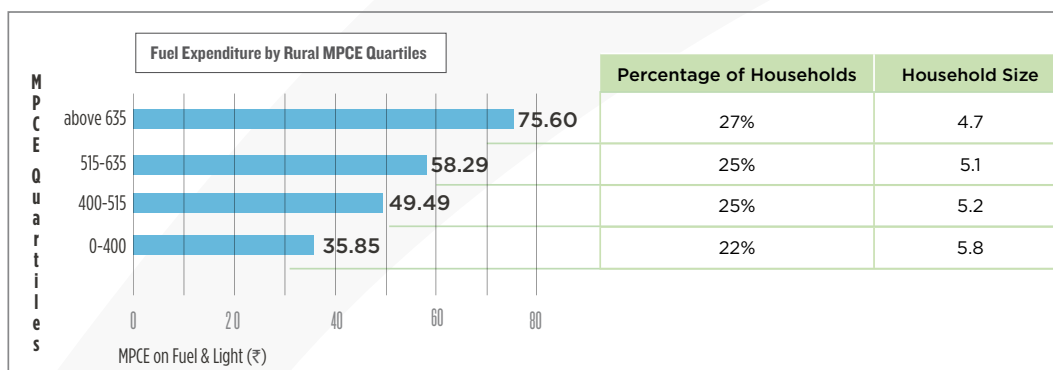


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	1,255,579,237	244,107,325	1,499,686,335
Average MPHE on Fuel & Light	282.61	402.77	297.03





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	1,255,579,237	750,361,108	244,107,325	234,838,722
Average MPHE on Fuel (₹)	282.61	168.89	402.77	387.48
Percentage of Market Value		60%		96%

### Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Assam
Number of Households Using	4,217,090	167,681	4,384,770
Average Quantity/HH/Mo (kg.)	166.7	132.8	165.4
% of Users Paying	36%	89%	38%
Average MPHE (₹)	169.52	169.18	169.49

Monthly Consumption of Dung Cake	Rural	Urban	Assam
Number of Households Using	350,679	10,634	361,313
% of Users Paying	10%	0%	10%
Average MPHE (₹)	29.72	-	29.72

Monthly Consumption of Kerosene	Rural	Urban	Assam
Number of Households Using	4,415,997	445,730	4,861,727
Average Quantity/HH/Mo (litre)	4.0	3.3	3.9
Average MPHE (₹)	53.63	45.92	52.92

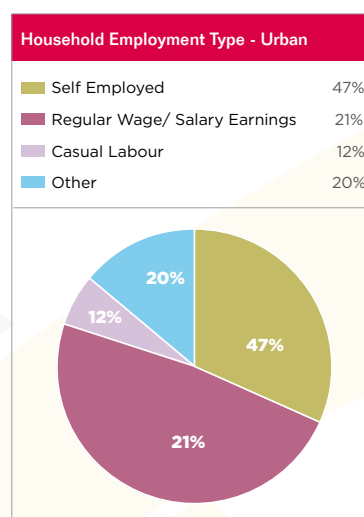
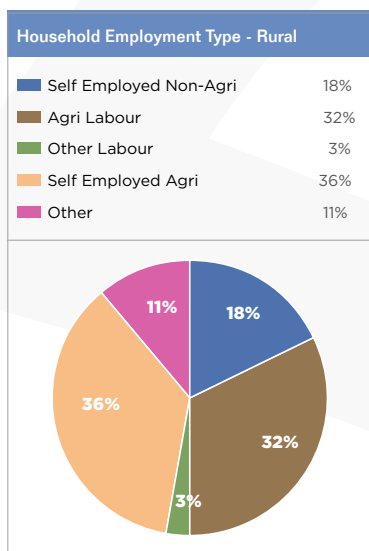
Monthly Consumption of LPG	Rural	Urban	Assam
Number of Households Using	304,702	380,296	684,999
Average Quantity/HH/Mo (kg.)	14.4	13.3	13.8
Average MPHE (₹)	293.57	278.58	285.25

Monthly Consumption of Electricity	Rural	Urban	Assam
Number of Households Using	1,361,417	486,268	1,847,686
Average Quantity/HH/Mo (std. units)	43.2	64.2	48.74
% of Users Paying	95%	98%	96%
Average MPHE (₹)	102.60	168.40	120.31



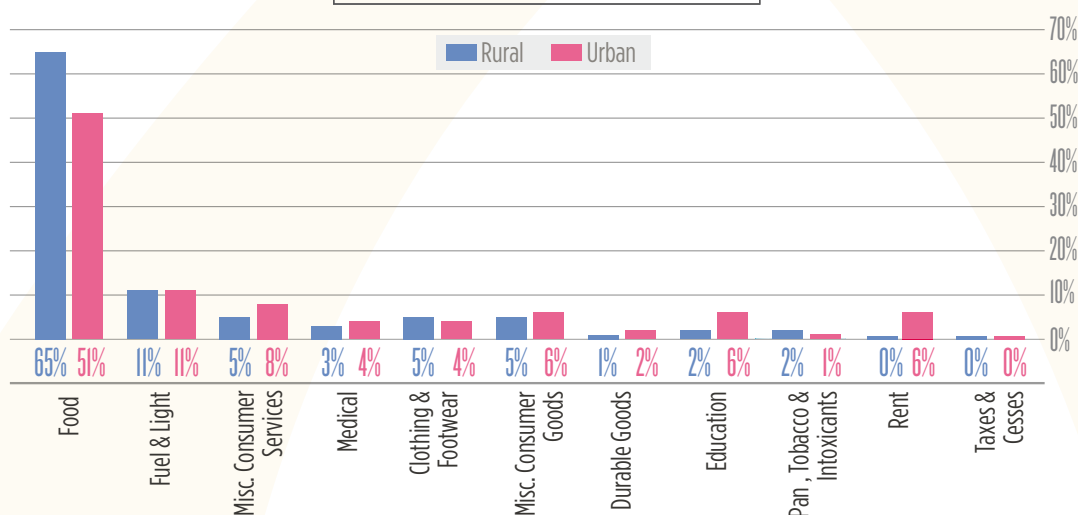
## Section 1: Bihar overview (Households, Employment and Expenditure)

	Rural	Urban
No. of Households	12,673,382	1,377,492
% of India's Household Population	6.8%	
Average Household Size	5.27	4.94

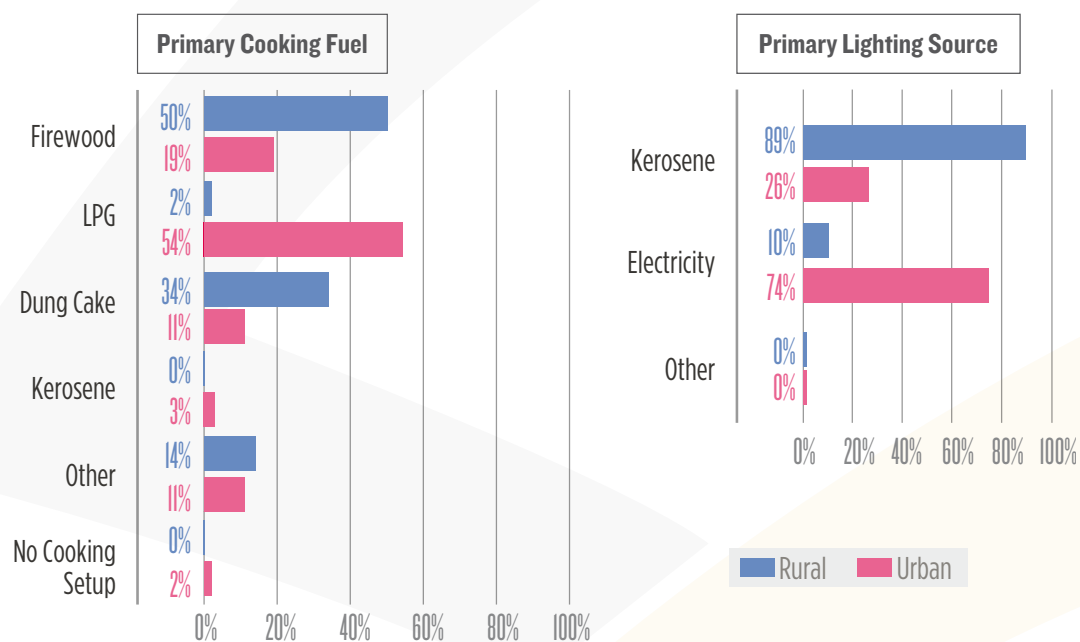


	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	2,187.79	3,435.54	2,310.11

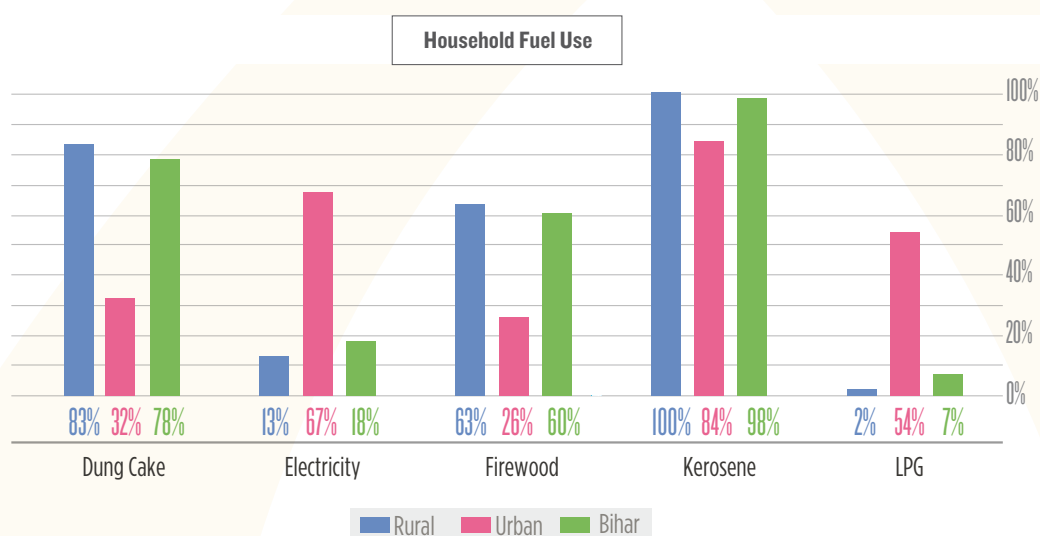
### Percentage of Monthly Per Household Expense

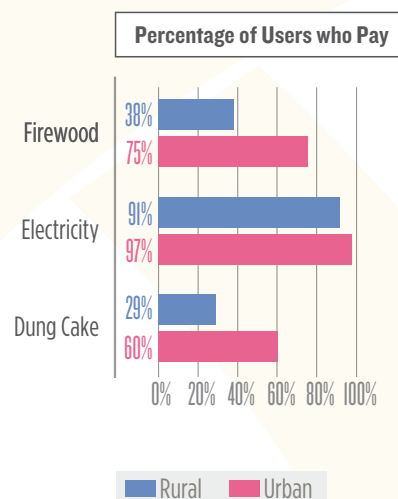
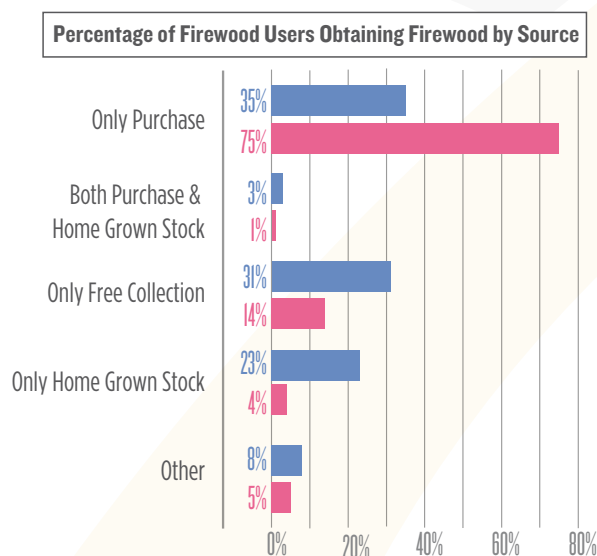
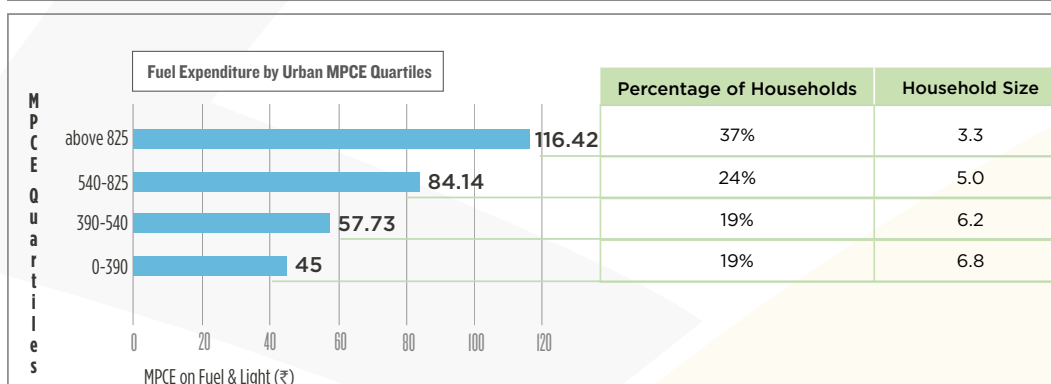
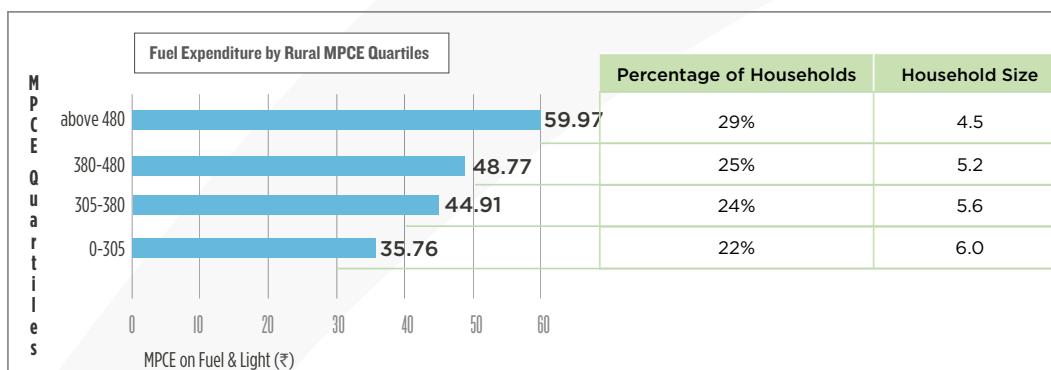


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	3,160,799,165	514,014,220	3,674,813,345
Average MPHE on Fuel & Light	249.40	373.15	261.54





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	3,160,799,165	1,896,772,946	514,014,220	470,972,229
Average MPHE on Fuel (₹)	249.40	149.67	373.15	341.91
Percentage of Market Value		60%		92%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Bihar
Number of Households Using	8,020,501	359,179	8,379,680
Average Quantity/HH/Mo (kg.)	74.8	63.4	74.3
% of Users Paying	38%	75%	40%
Average MPHE (₹)	119.01	136.11	120.40

Monthly Consumption of Dung Cake	Rural	Urban	Bihar
Number of Households Using	10,496,407	441,797	10,938,203
% of Users Paying	29%	60%	30%
Average MPHE (₹)	89.91	84.78	89.50

Monthly Consumption of Kerosene	Rural	Urban	Bihar
Number of Households Using	12,629,850	1,158,004	13,787,853
Average Quantity/HH/Mo (litre)	3.6	3.4	3.6
Average MPHE (₹)	50.83	55.44	51.22

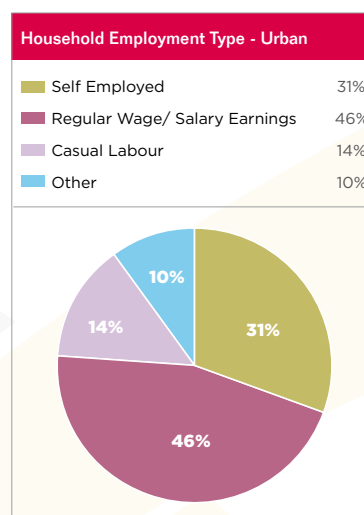
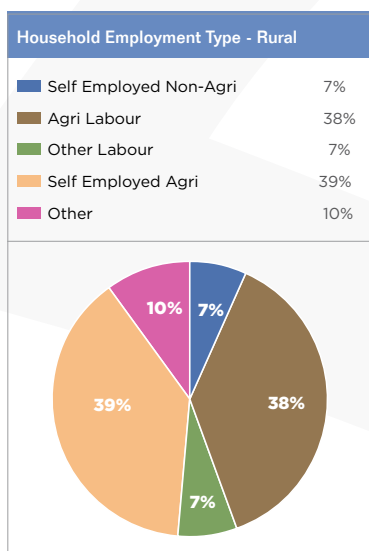
Monthly Consumption of LPG	Rural	Urban	Bihar
Number of Households Using	273,447	747,648	1,021,096
Average Quantity/HH/Mo (kg.)	12.0	11.8	11.9
Average MPHE (₹)	259.36	257.88	258.27

Monthly Consumption of Electricity	Rural	Urban	Bihar
Number of Households Using	1,608,917	921,421	2,530,338
Average Quantity/HH/Mo (std. units)	32.8	63.8	44.11
% of Users Paying	91%	97%	93%
Average MPHE (₹)	65.39	135.60	91.97

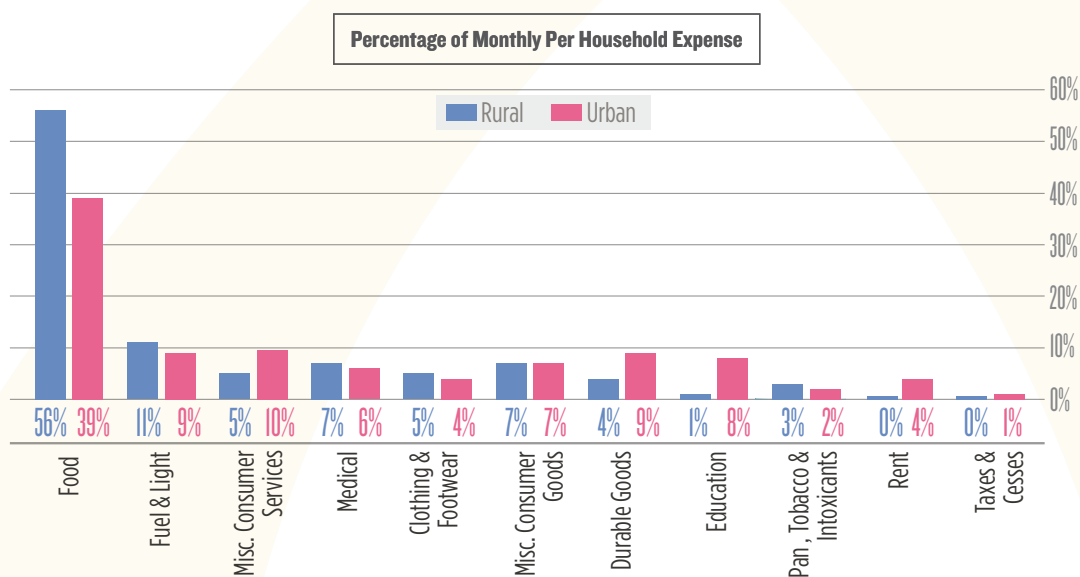


## Section 1: Chhattisgarh overview (Households, Employment and Expenditure)

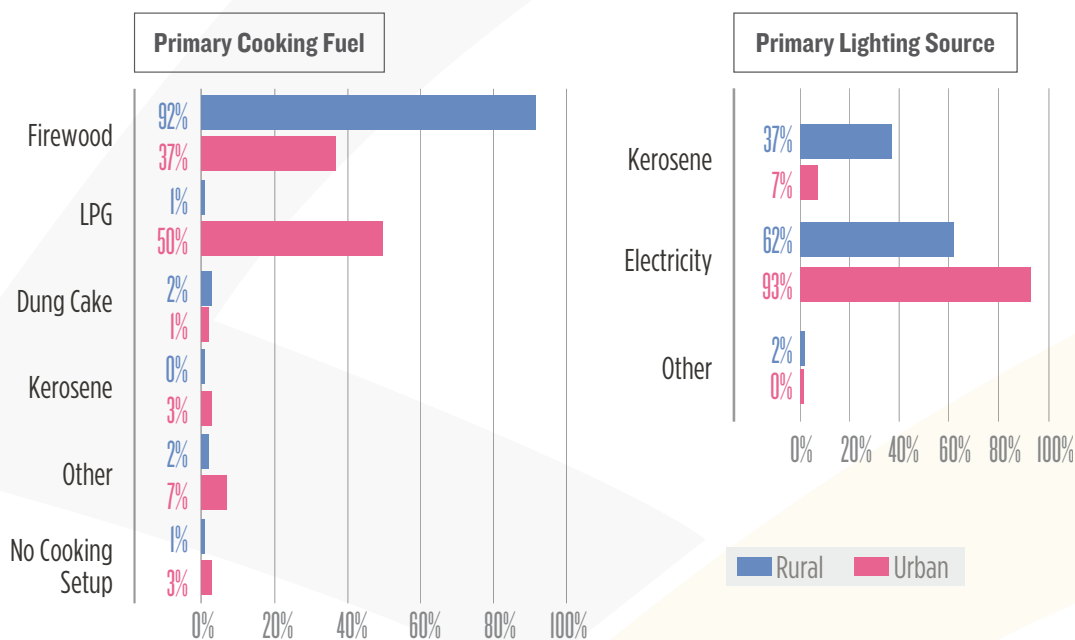
	Rural	Urban
No. of Households	3,643,512	733,319
% of India's Household Population	2.1%	
Average Household Size	4.99	4.49



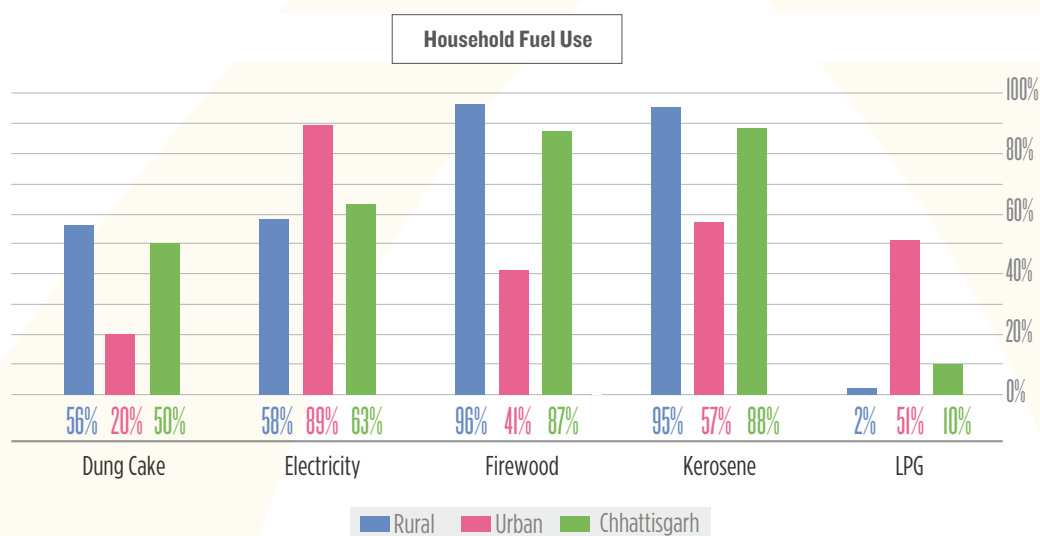
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	2,119.55	4,435.79	2,507.62

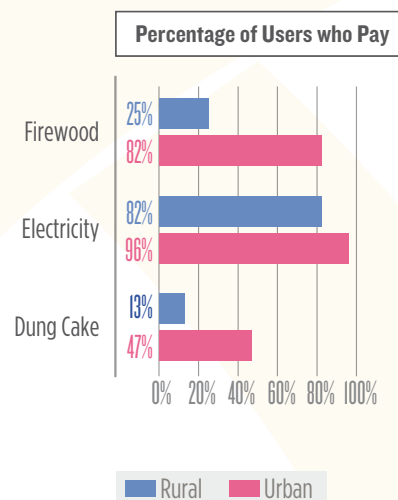
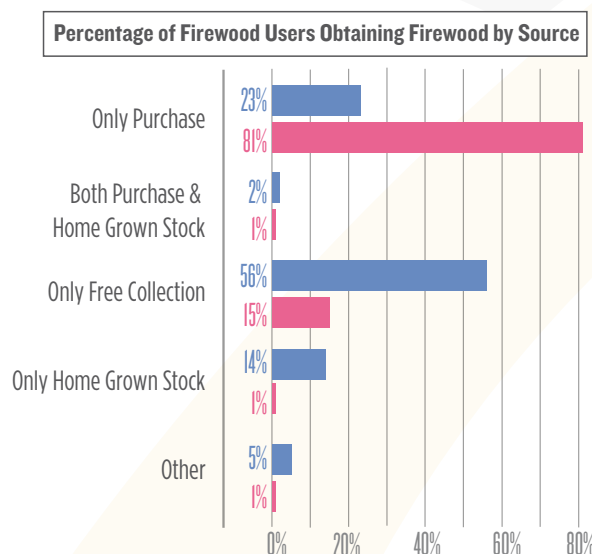
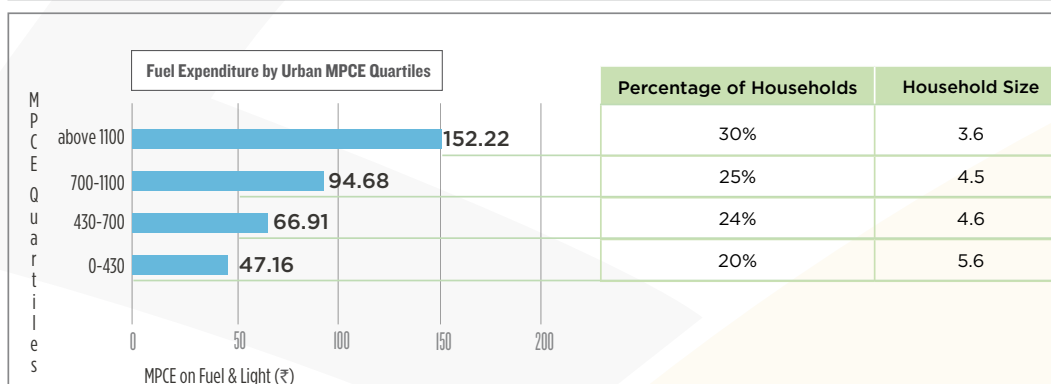
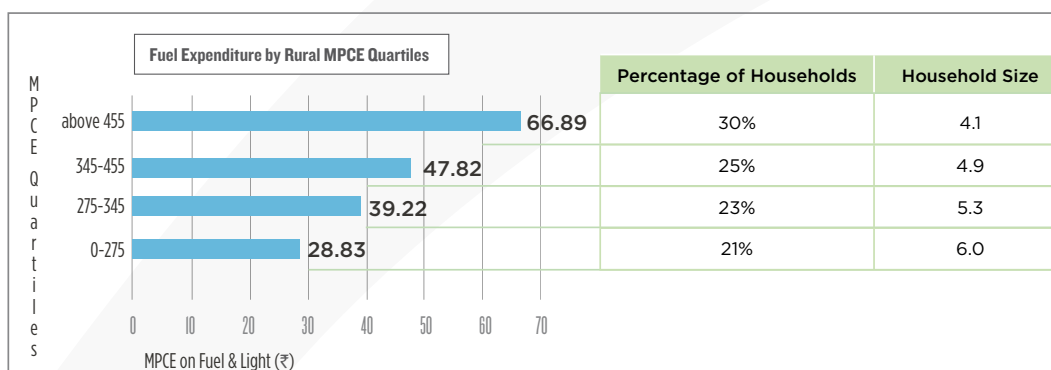


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total Monthly Expenditure on Fuel & Light	830,717,928	295,707,488	1,126,425,100
Average MPHE on Fuel & Light	228.00	403.25	257.36





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	830,717,928	401,321,364	295,707,488	281,286,423
Average MPHE on Fuel (₹)	228.00	110.15	403.25	383.58
Percentage of Market Value		48%		95%

### Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Chhattisgarh
Number of Households Using	3,497,760	298,185	3,795,945
Average Quantity/HH/Mo (kg.)	125.2	104.5	123.6
% of Users Paying	25%	82%	30%
Average MPHE (₹)	148.52	160.75	151.20

Monthly Consumption of Dung Cake	Rural	Urban	Chhattisgarh
Number of Households Using	2,051,743	143,745	2,195,488
% of Users Paying	13%	47%	15%
Average MPHE (₹)	40.51	25.78	37.54

Monthly Consumption of Kerosene	Rural	Urban	Chhattisgarh
Number of Households Using	3,453,999	417,247	3,871,246
Average Quantity/HH/Mo (litre)	2.6	3.4	2.7
Average MPHE (₹)	26.88	32.79	27.52

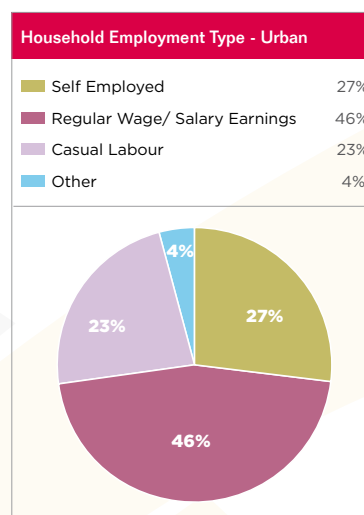
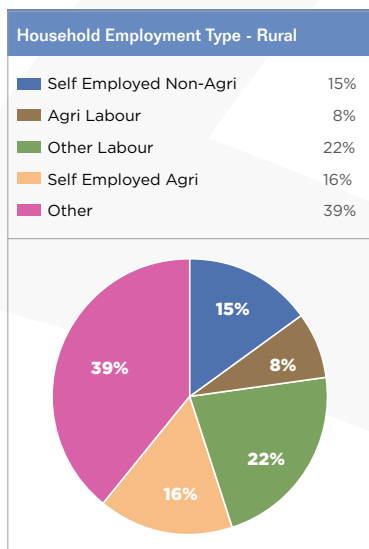
Monthly Consumption of LPG	Rural	Urban	Chhattisgarh
Number of Households Using	74,656	374,620	449,276
Average Quantity/HH/Mo (kg.)	10.7	12.7	12.3
Average MPHE (₹)	228.39	262.14	256.53

Monthly Consumption of Electricity	Rural	Urban	Chhattisgarh
Number of Households Using	2,125,571	650,213	2,775,784
Average Quantity/HH/Mo (std. units)	47.6	111.0	62.47
% of Users Paying	82%	96%	85%
Average MPHE (₹)	79.59	193.07	109.48



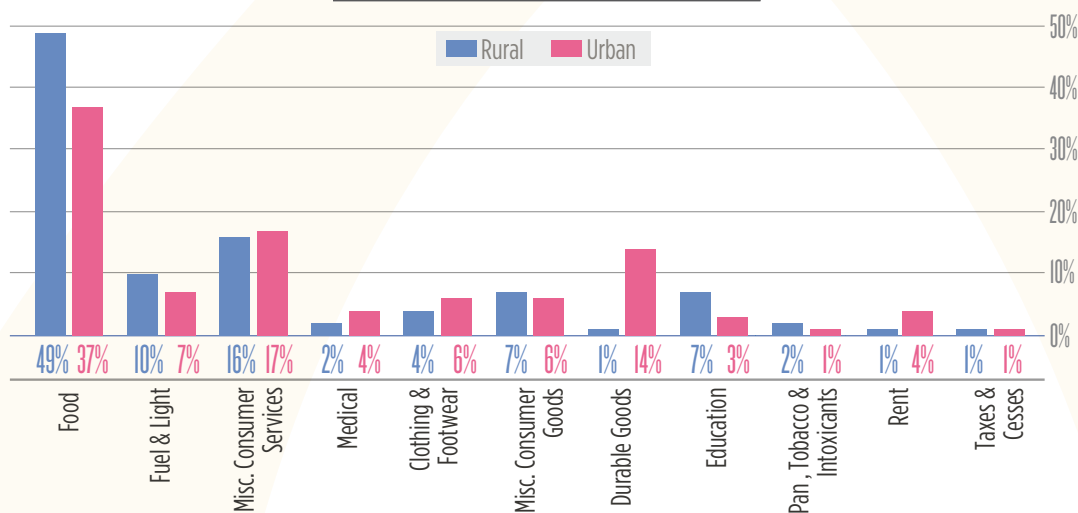
## Section 1: Goa overview (Households, Employment and Expenditure)

	Rural	Urban
No. of Households	154,298	89,212
% of India's Household Population	0.1%	
Average Household Size	4.35	4.52

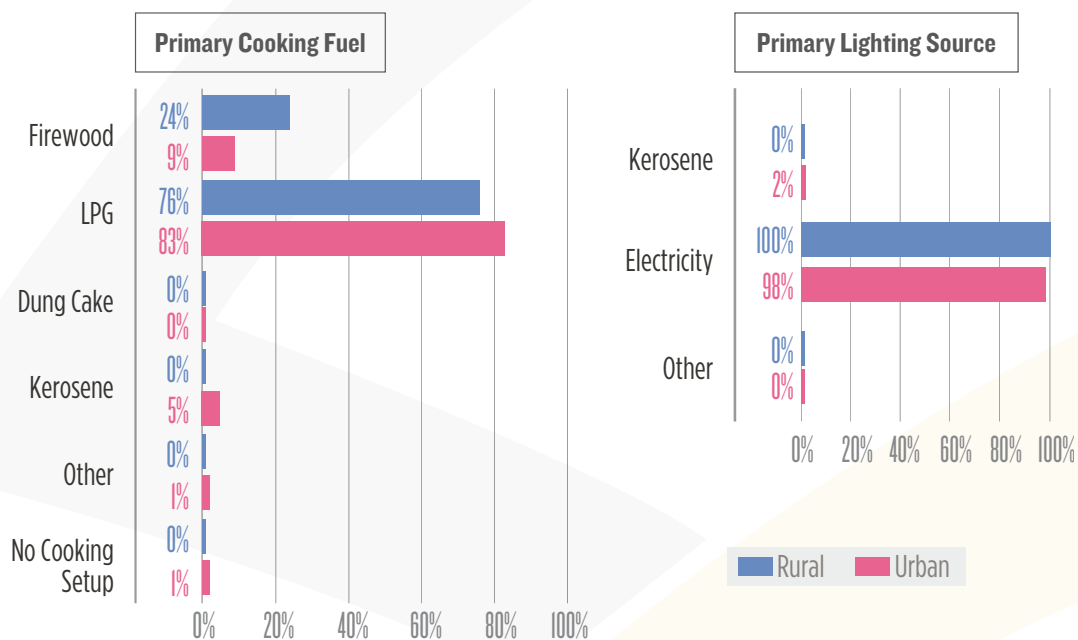


	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	4,274.68	6,453.29	5,072.83

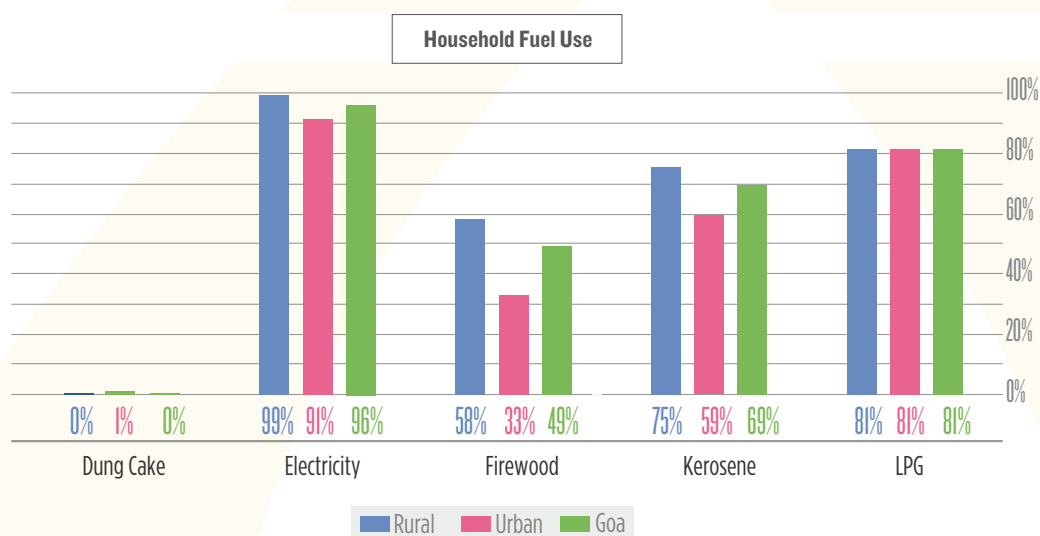
Percentage of Monthly Per Household Expense

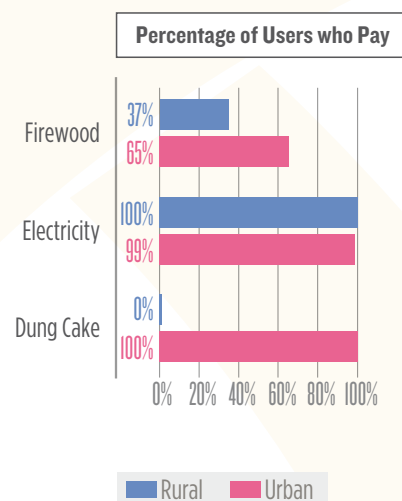
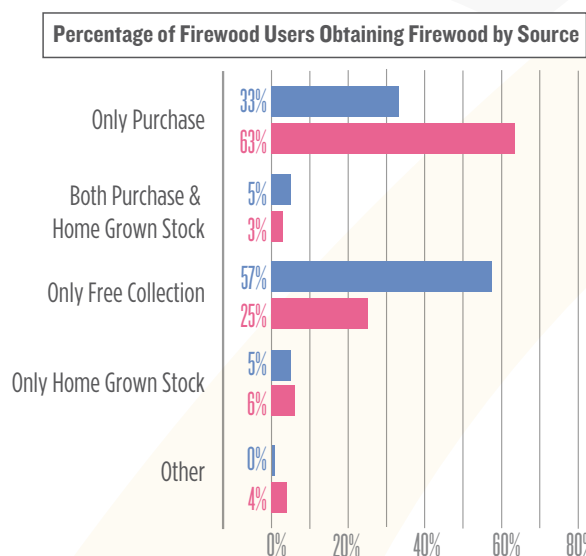
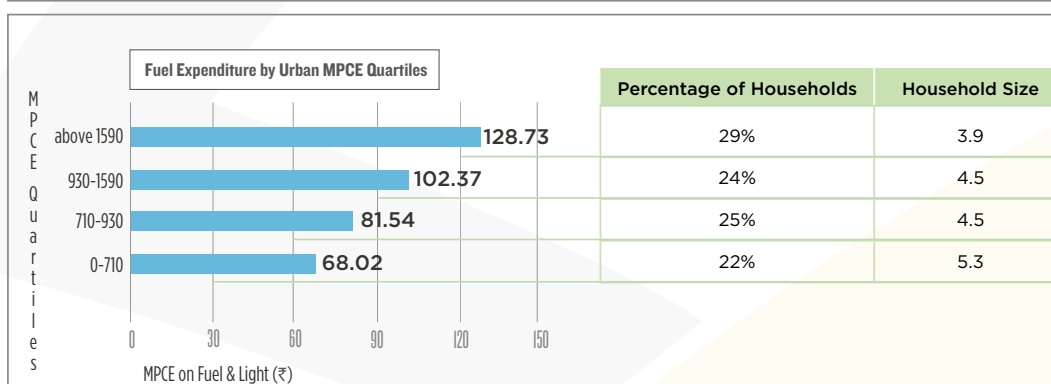
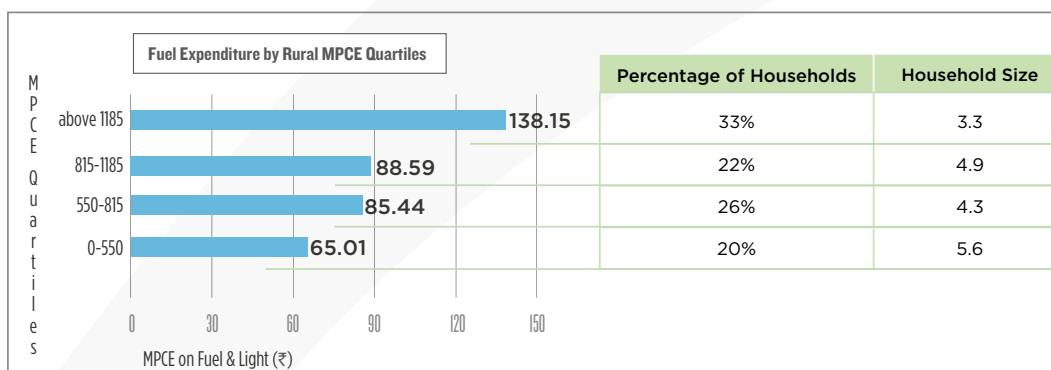


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total Monthly Expenditure on Fuel & Light	63,128,513	38,213,936	101,342,442
Average MPHE on Fuel & Light	409.13	428.35	416.17





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	63,128,513	55,195,551	38,213,936	36,626,162
Average MPHE on Fuel (₹)	409.13	357.72	428.35	410.55
Percentage of Market Value		87%		96%

### Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Goa
Number of Households Using	90,220	29,203	119,424
Average Quantity/HH/Mo (kg.)	62.8	67.1	63.8
% of Users Paying	37%	65%	44%
Average MPHE (₹)	124.48	136.89	128.95

Monthly Consumption of Dung Cake	Rural	Urban	Goa
Number of Households Using	0	587	587
% of Users Paying	-	100%	100%
Average MPHE (₹)	-	47.50	47.50

Monthly Consumption of Kerosene	Rural	Urban	Goa
Number of Households Using	115,269	52,742	168,011
Average Quantity/HH/Mo (litre)	3.8	4.7	4.1
Average MPHE (₹)	40.66	57.22	45.86

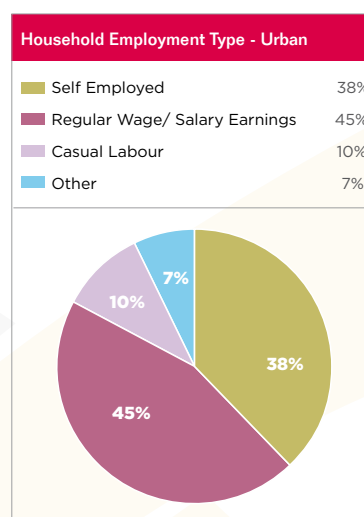
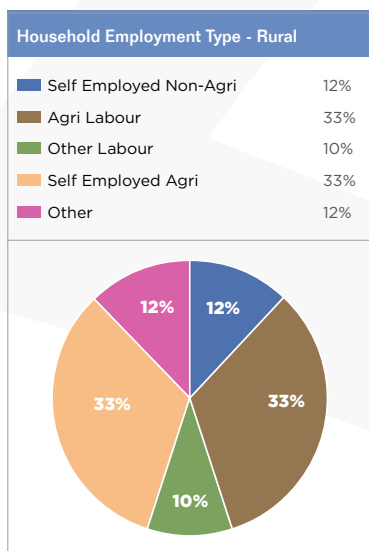
Monthly Consumption of LPG	Rural	Urban	Goa
Number of Households Using	125,441	72,439	197,880
Average Quantity/HH/Mo (kg.)	10.8	12.3	11.4
Average MPHE (₹)	210.27	244.91	222.95

Monthly Consumption of Electricity	Rural	Urban	Goa
Number of Households Using	153,000	81,227	234,227
Average Quantity/HH/Mo (std. units)	91.9	108.2	97.54
% of Users Paying	100%	99%	99%
Average MPHE (₹)	121.64	151.77	132.07



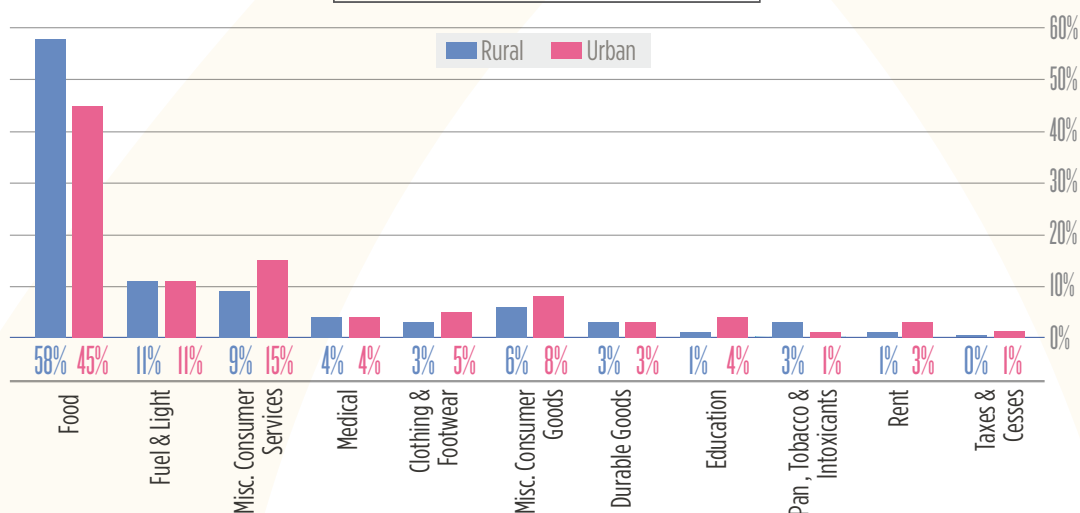
## Section 1: Gujarat overview (Households, Employment and Expenditure)

	Rural	Urban
No. of Households	6,595,005	3,544,510
% of India's Household Population	4.9%	
Average Household Size	4.69	4.59

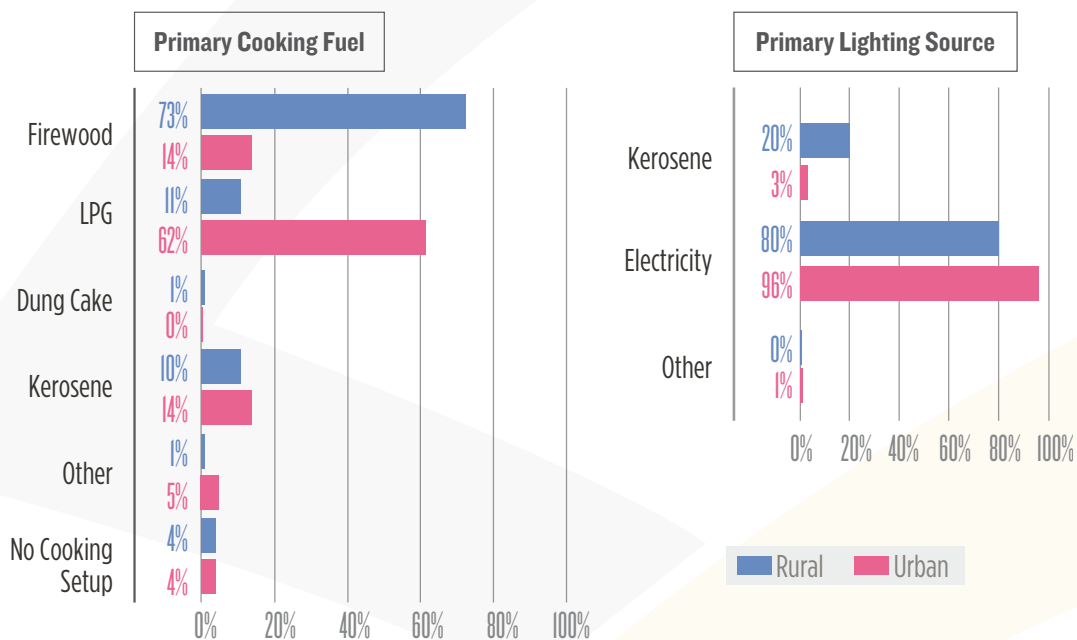


	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	2,792.39	5,110.76	3,602.83

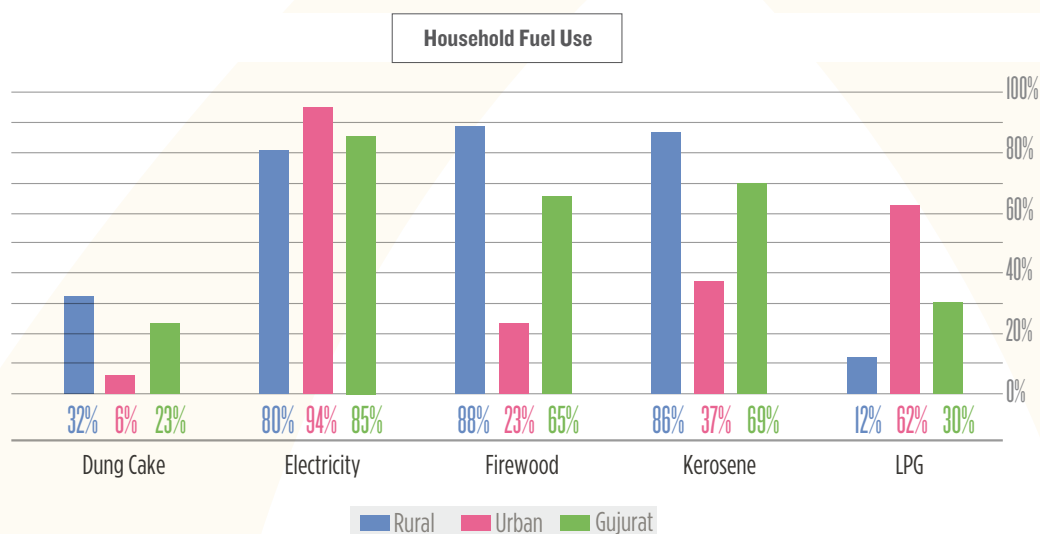
### Percentage of Monthly Per Household Expense

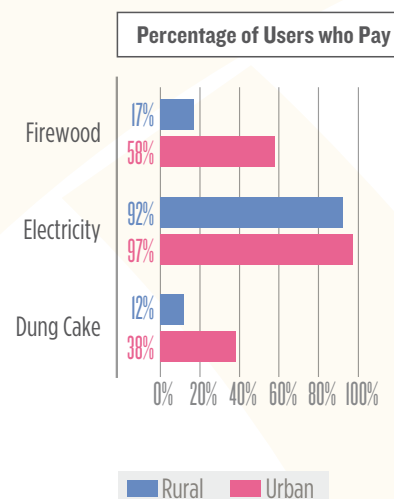
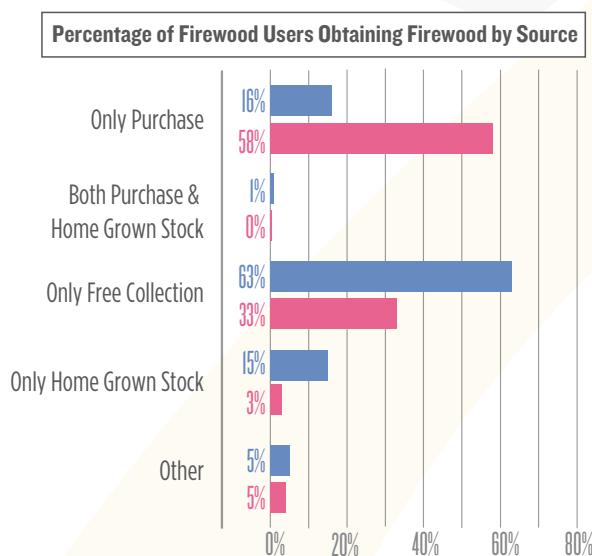
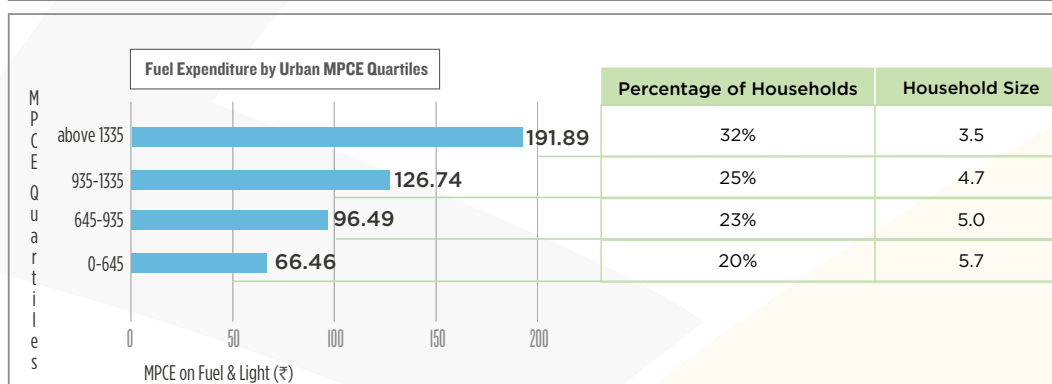
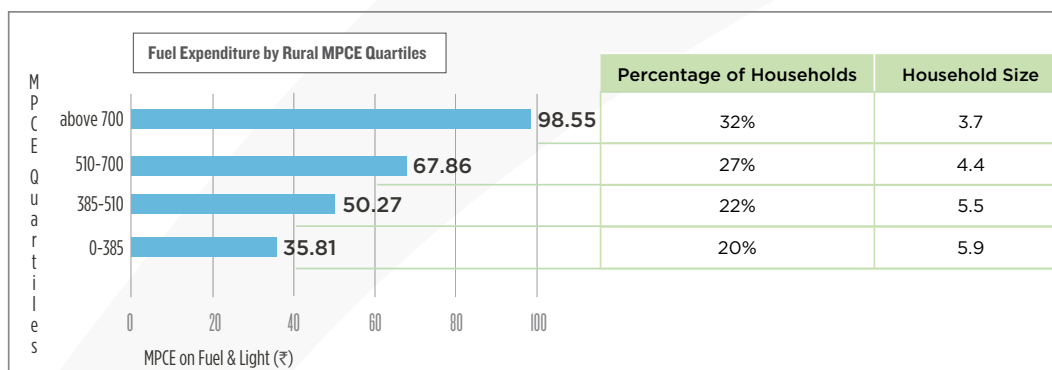


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total Monthly Expenditure on Fuel & Light	1,951,988,698	1,954,823,678	3,906,812,887
Average MPHE on Fuel & Light	295.98	551.51	385.31





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	1,951,988,698	1,326,917,386	1,954,823,678	1,901,573,458
Average MPHE on Fuel (₹)	295.98	201.20	551.51	536.48
Percentage of Market Value		68%		97%

### Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Gujarat
Number of Households Using	5,774,223	803,044	6,577,267
Average Quantity/HH/Mo (kg.)	85.5	55.6	81.8
% of Users Paying	17%	58%	22%
Average MPHE (₹)	103.26	112.84	106.36

Monthly Consumption of Dung Cake	Rural	Urban	Gujarat
Number of Households Using	2,083,626	227,394	2,311,020
% of Users Paying	12%	38%	15%
Average MPHE (₹)	34.02	46.64	37.30

Monthly Consumption of Kerosene	Rural	Urban	Gujarat
Number of Households Using	5,677,191	1,294,956	6,972,147
Average Quantity/HH/Mo (litre)	6.1	8.2	6.5
Average MPHE (₹)	63.36	118.95	73.69

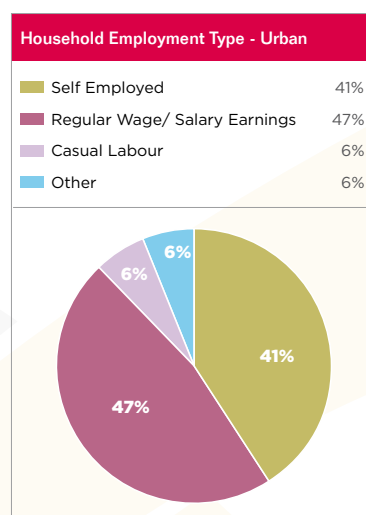
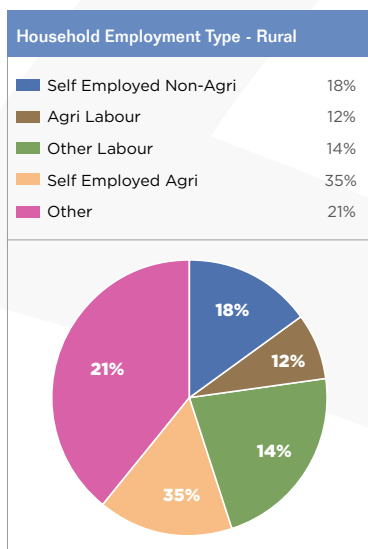
Monthly Consumption of LPG	Rural	Urban	Gujarat
Number of Households Using	802,017	2,208,650	3,010,667
Average Quantity/HH/Mo (kg.)	7.9	10.6	9.9
Average MPHE (₹)	186.74	248.51	232.05

Monthly Consumption of Electricity	Rural	Urban	Gujarat
Number of Households Using	5,247,334	3,328,518	8,575,852
Average Quantity/HH/Mo (std. units)	40.0	92.8	60.52
% of Users Paying	92%	97%	94%
Average MPHE (₹)	137.38	334.86	216.77

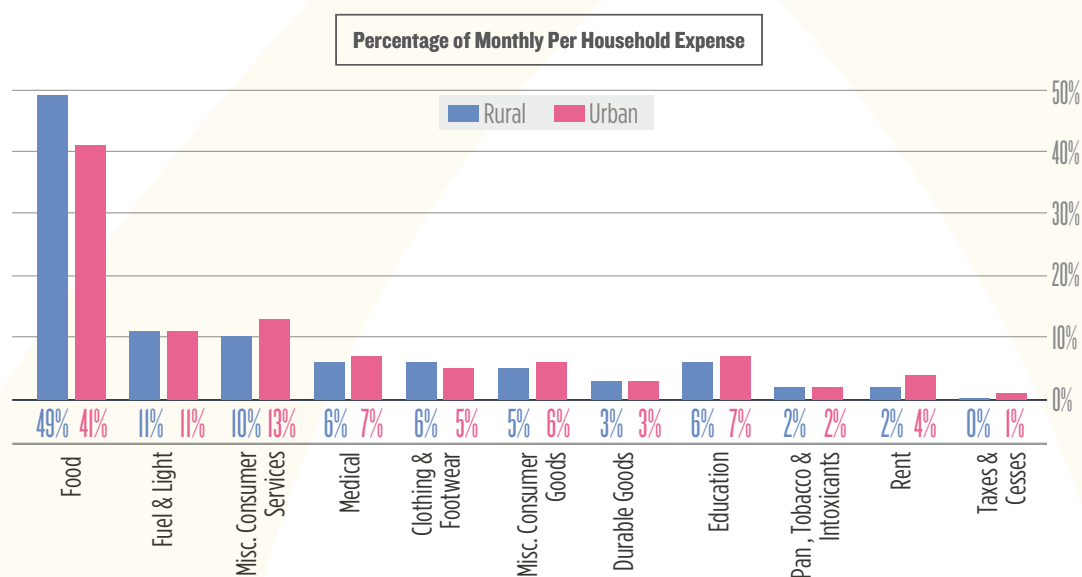


## Section 1: Haryana overview (Households, Employment and Expenditure)

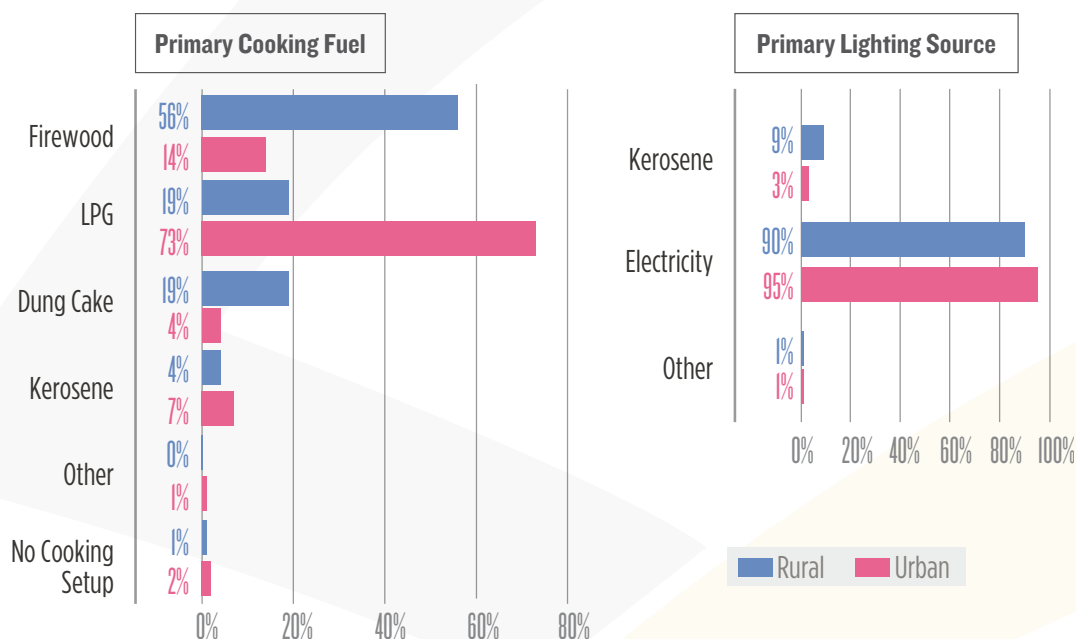
	Rural	Urban
No. of Households	3,095,441	1,295,301
% of India's Household Population	2.1%	
Average Household Size	5.11	4.43



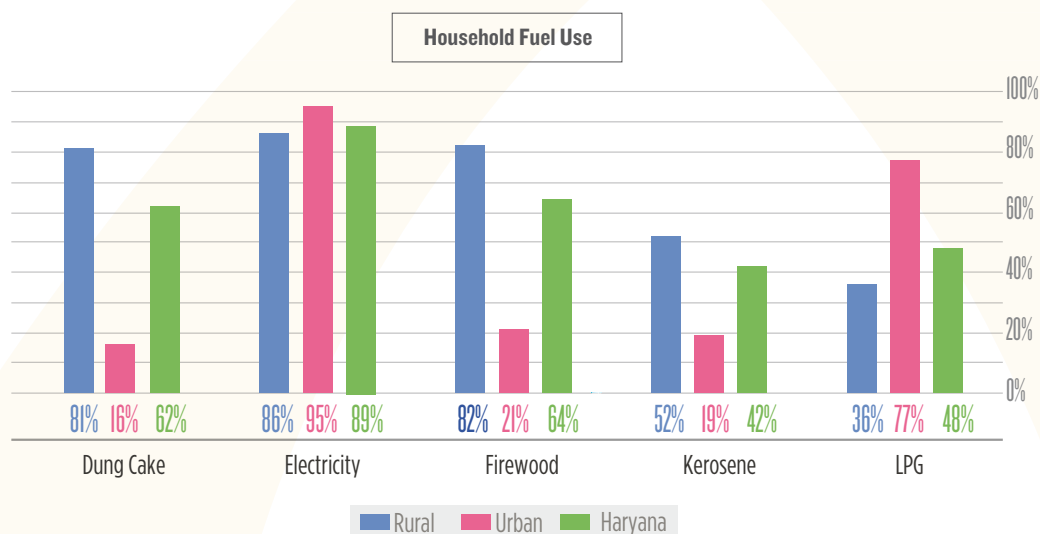
	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	4,399.34	5,055.18	4,592.82

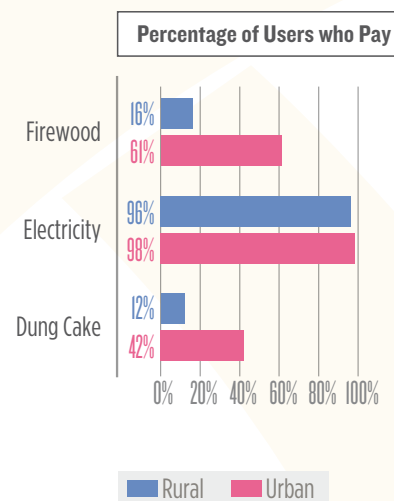
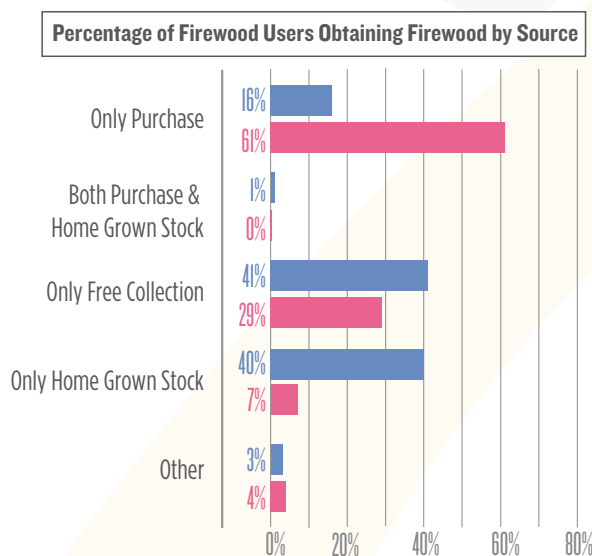
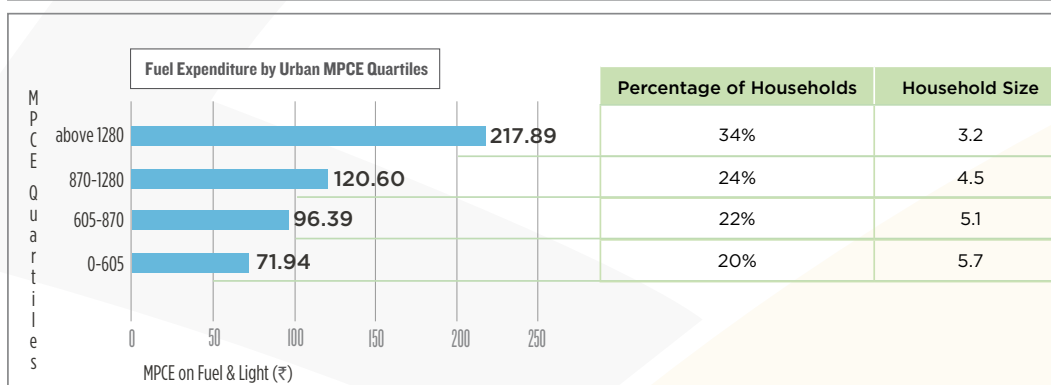
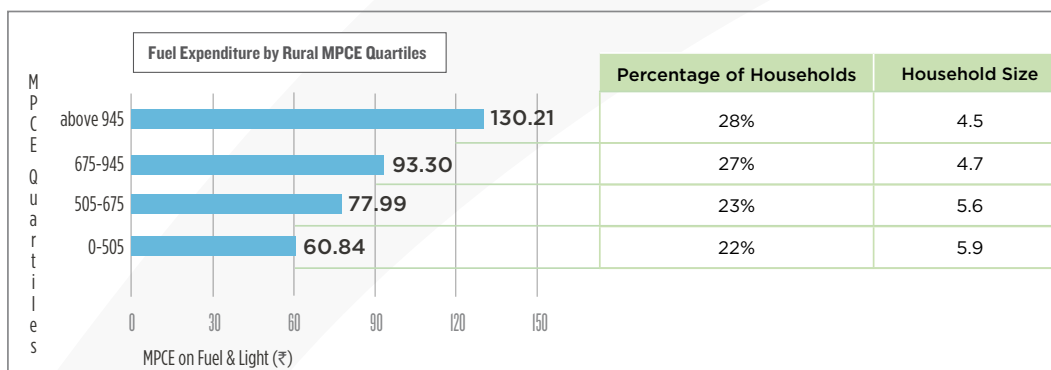


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total Monthly Expenditure on Fuel & Light	1,432,713,546	726,870,265	2,159,583,643
Average MPHE on Fuel & Light	462.85	561.16	491.85





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	1,432,713,546	844,706,083	726,870,265	689,878,337
Average MPHE on Fuel (₹)	462.85	272.89	561.16	532.60
Percentage of Market Value		59%		95%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Haryana
Number of Households Using	2,528,760	269,457	2,798,217
Average Quantity/HH/Mo (kg.)	108.5	91.9	106.9
% of Users Paying	16%	61%	21%
Average MPHE (₹)	128.04	151.84	134.77

Monthly Consumption of Dung Cake	Rural	Urban	Haryana
Number of Households Using	2,501,243	213,574	2,714,818
% of Users Paying	12%	42%	14%
Average MPHE (₹)	115.00	87.56	108.62

Monthly Consumption of Kerosene	Rural	Urban	Haryana
Number of Households Using	1,610,606	249,783	1,860,389
Average Quantity/HH/Mo (litre)	3.4	5.2	3.6
Average MPHE (₹)	39.04	76.96	44.14

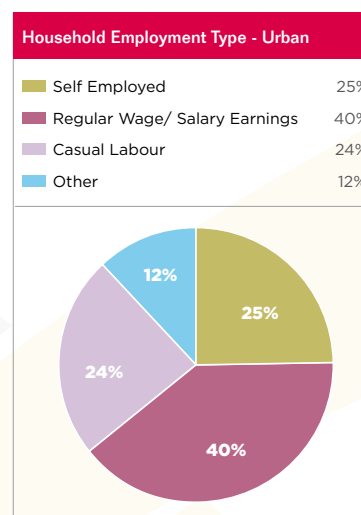
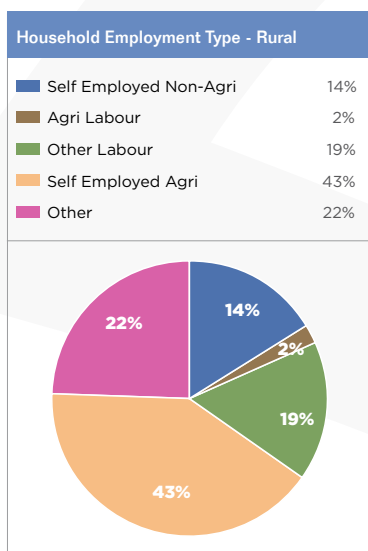
Monthly Consumption of LPG	Rural	Urban	Haryana
Number of Households Using	1,106,596	1,000,576	2,107,172
Average Quantity/HH/Mo (kg.)	8.0	11.7	9.7
Average MPHE (₹)	161.12	236.72	197.02

Monthly Consumption of Electricity	Rural	Urban	Haryana
Number of Households Using	2,659,149	1,227,703	3,886,852
Average Quantity/HH/Mo (std. units)	61.3	90.6	70.58
% of Users Paying	96%	98%	97%
Average MPHE (₹)	181.32	316.14	224.49

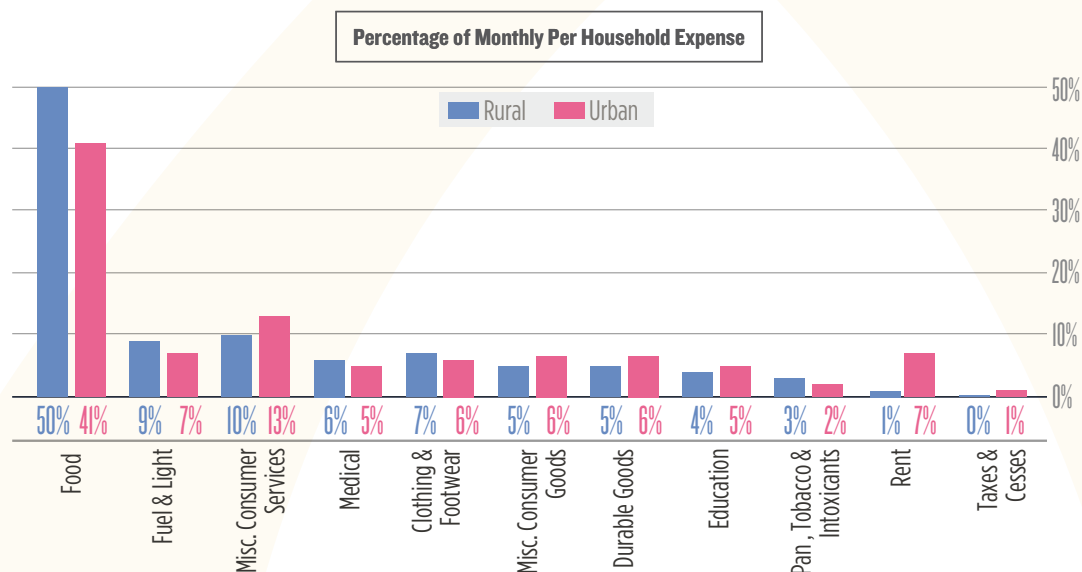


## Section 1: Himachal Pradesh overview (Households, Employment and Expenditure)

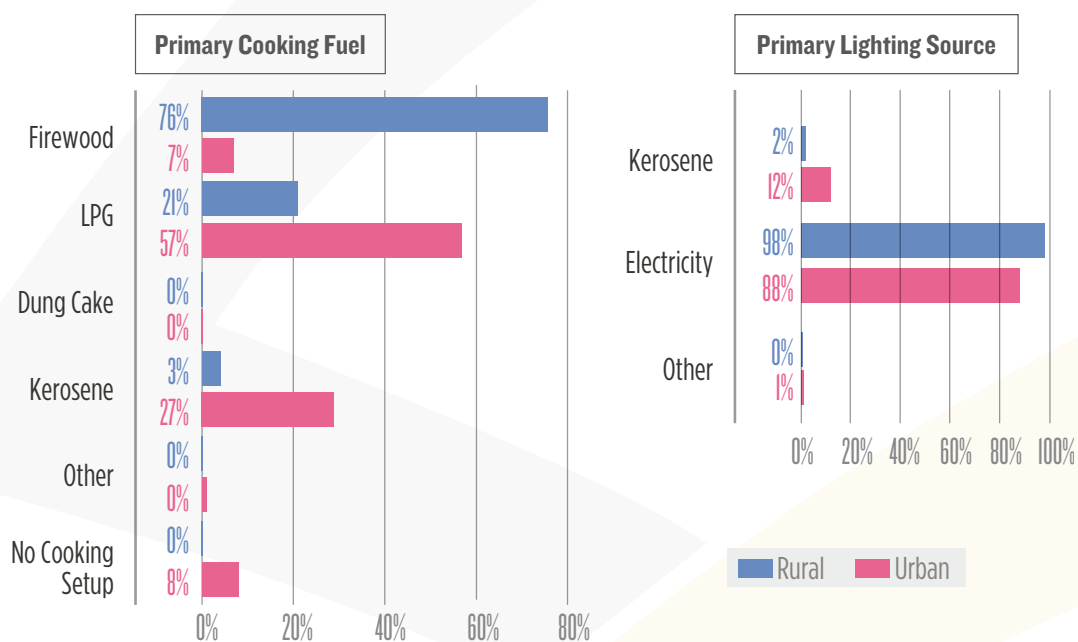
	Rural	Urban
No. of Households	1,193,351	188,373
% of India's Household Population	0.7%	
Average Household Size	4.66	3.08



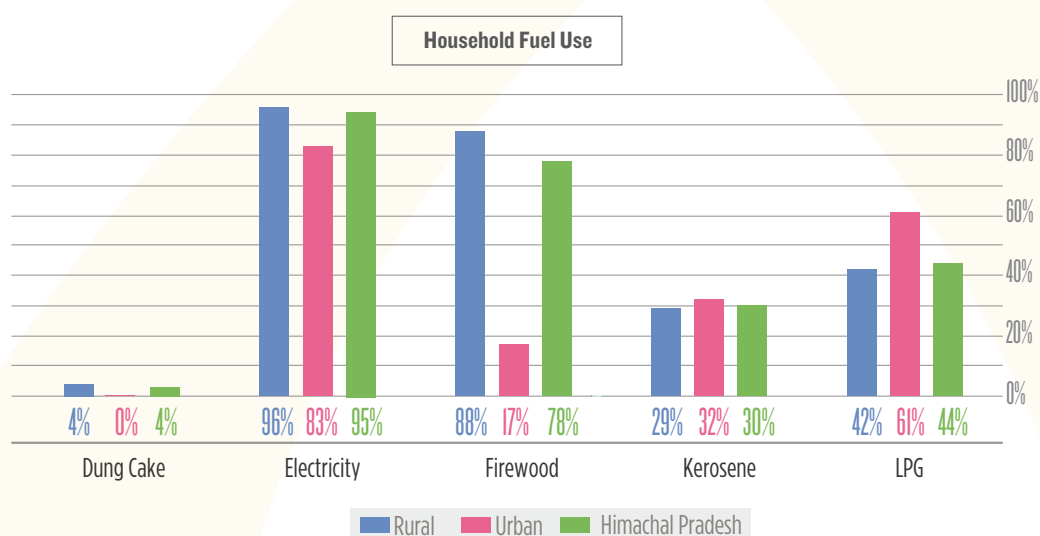
	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	3,703.54	4,277.67	3,781.81

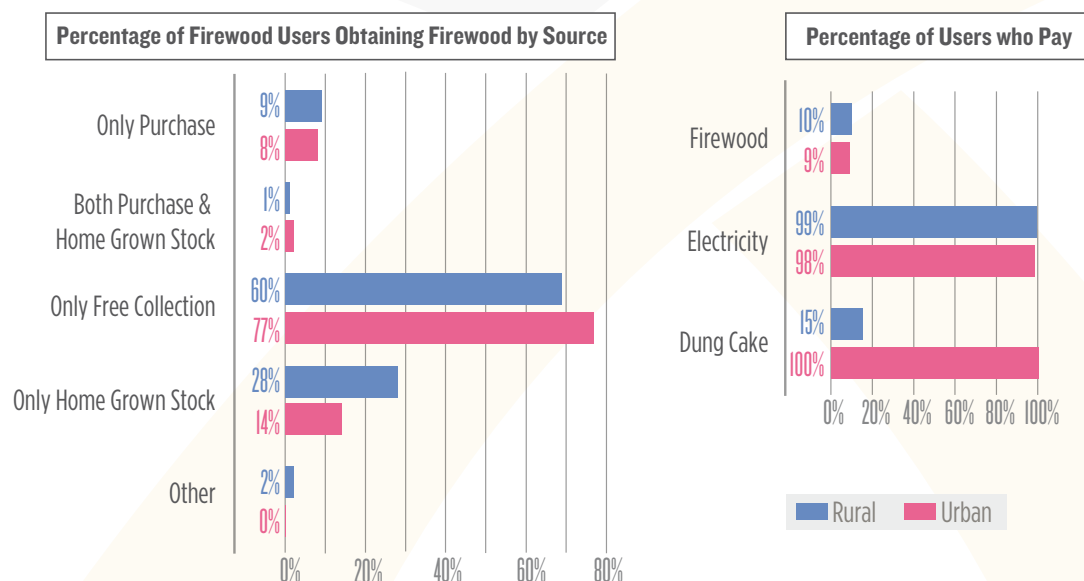
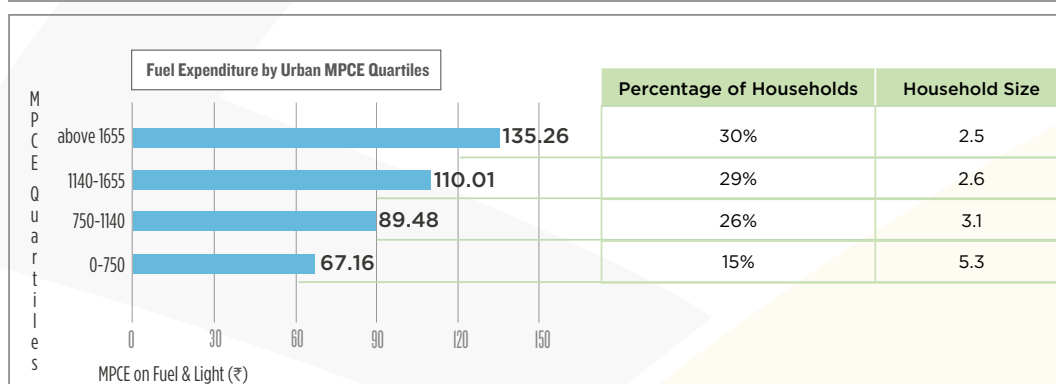
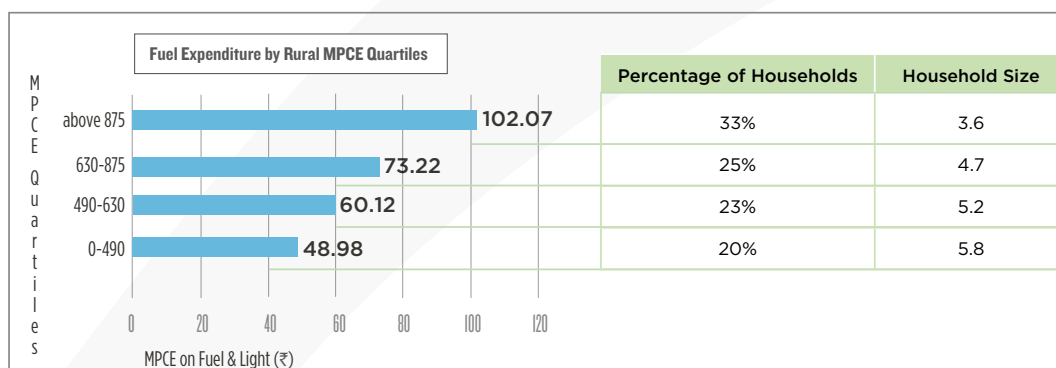


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	395,074,383	58,143,810	453,218,208
Average MPHE on Fuel & Light	331.06	308.66	328.01





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	395,074,383	214,187,305	58,143,810	55,293,384
Average MPHE on Fuel (₹)	331.06	179.48	308.66	293.53
Percentage of Market Value		54%		95%

### Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Himachal Pradesh
Number of Households Using	1,046,043	31,122	1,077,165
Average Quantity/HH/Mo (kg.)	197.5	111.3	195.0
% of Users Paying	10%	9%	10%
Average MPHE (₹)	215.61	167.10	214.28

Monthly Consumption of Dung Cake	Rural	Urban	Himachal Pradesh
Number of Households Using	51,863	66	51,929
% of Users Paying	15%	100%	15%
Average MPHE (₹)	32.31	30.00	32.29

Monthly Consumption of Kerosene	Rural	Urban	Himachal Pradesh
Number of Households Using	347,751	61,145	408,896
Average Quantity/HH/Mo (litre)	3.9	8.1	4.6
Average MPHE (₹)	40.11	102.58	49.45

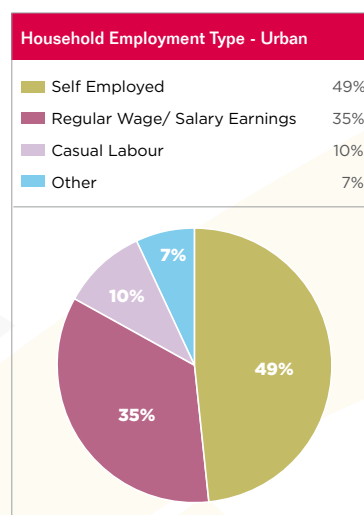
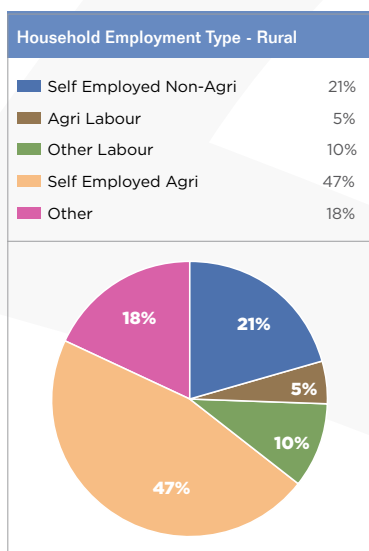
Monthly Consumption of LPG	Rural	Urban	Himachal Pradesh
Number of Households Using	495,954	114,849	610,804
Average Quantity/HH/Mo (kg.)	7.7	11.8	8.4
Average MPHE (₹)	159.49	237.00	174.06

Monthly Consumption of Electricity	Rural	Urban	Himachal Pradesh
Number of Households Using	1,151,195	156,551	1,307,746
Average Quantity/HH/Mo (std. units)	78.6	112.3	82.61
% of Users Paying	99%	98%	99%
Average MPHE (₹)	78.58	127.81	84.43



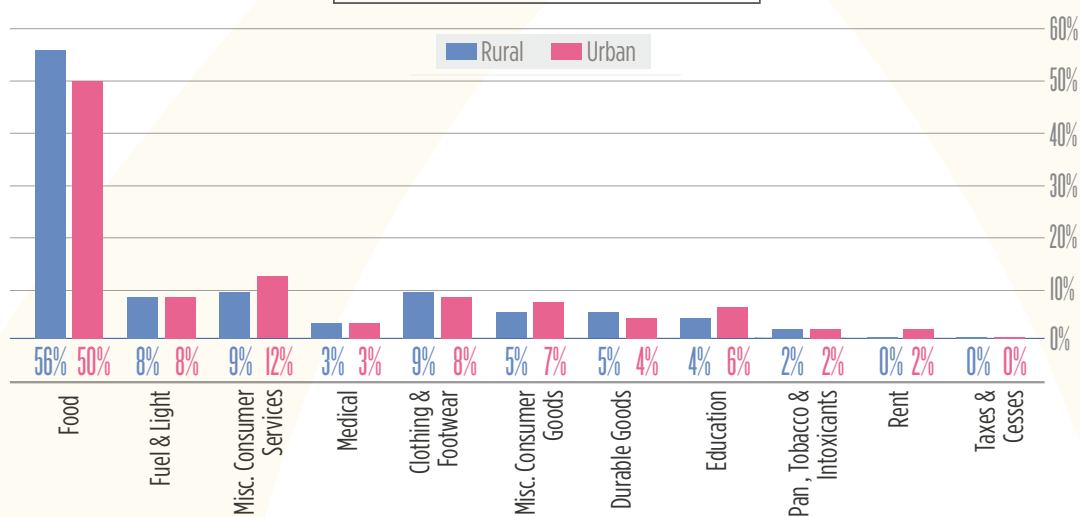
## Section 1: Jammu & Kashmir overview (Households, Employment and Expenditure)

	Rural	Urban
No. of Households	896,051	342,739
% of India's Household Population	0.6%	
Average Household Size	5.65	4.98

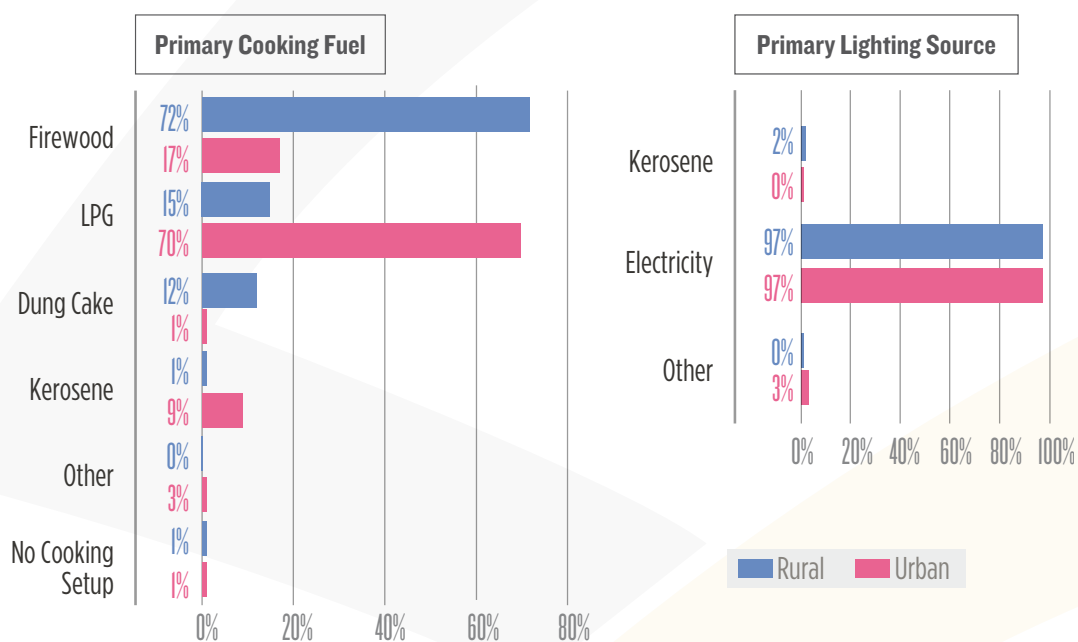


	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	4,414.54	5,282.17	4,654.59

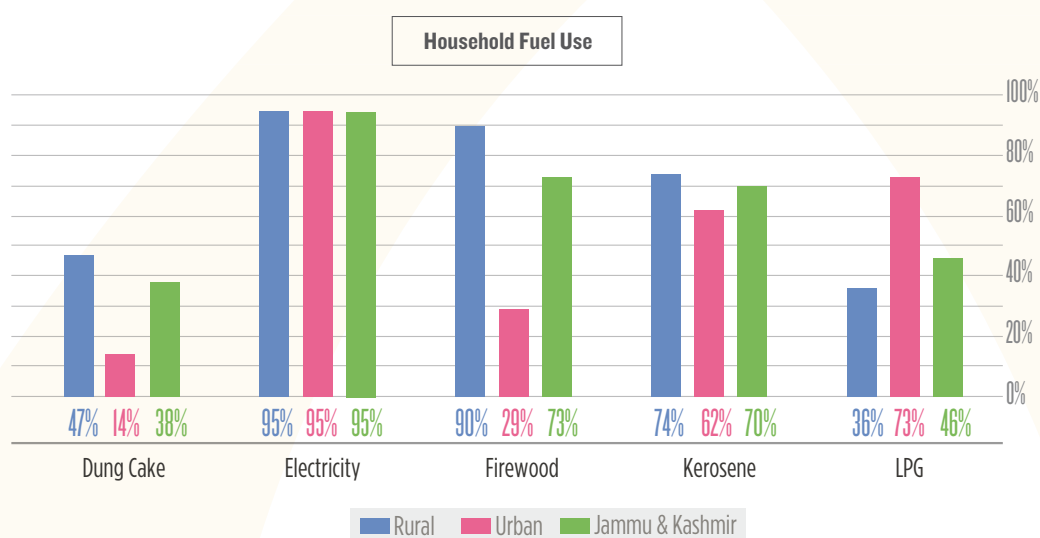
**Percentage of Monthly Per Household Expense**

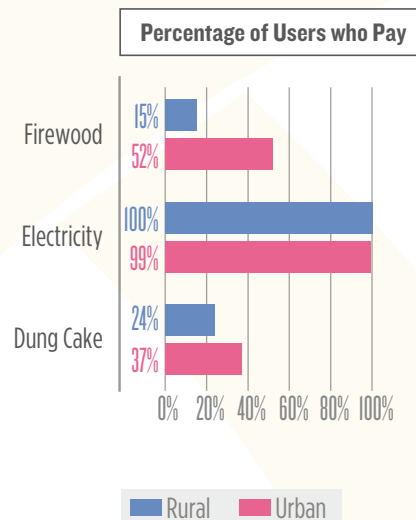
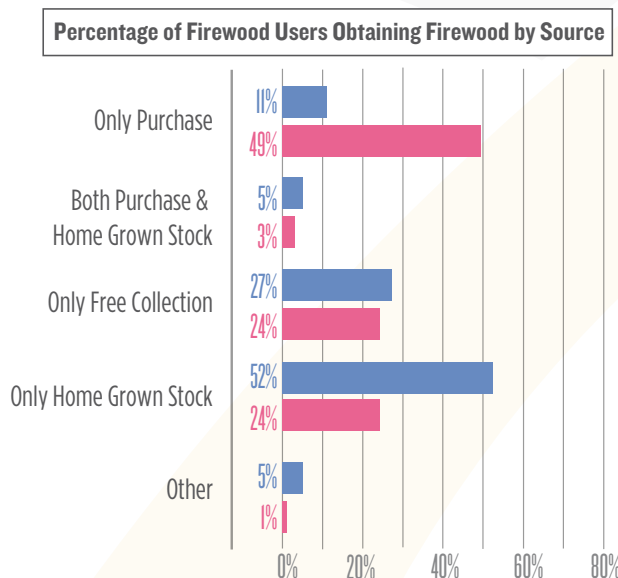
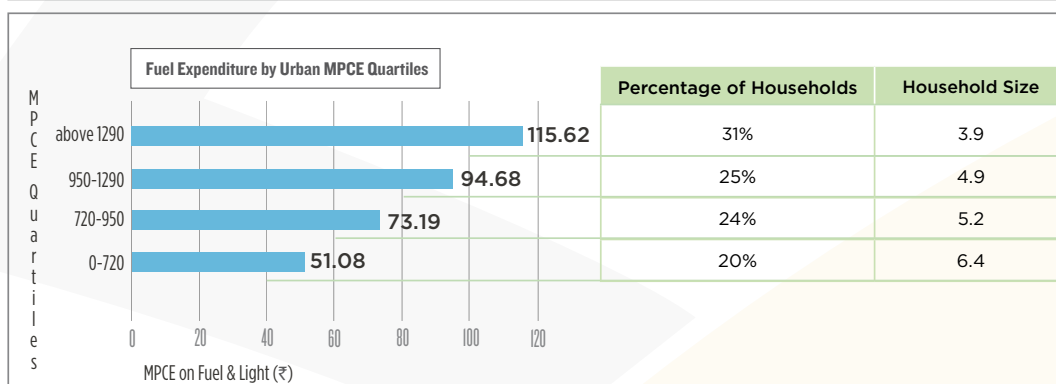
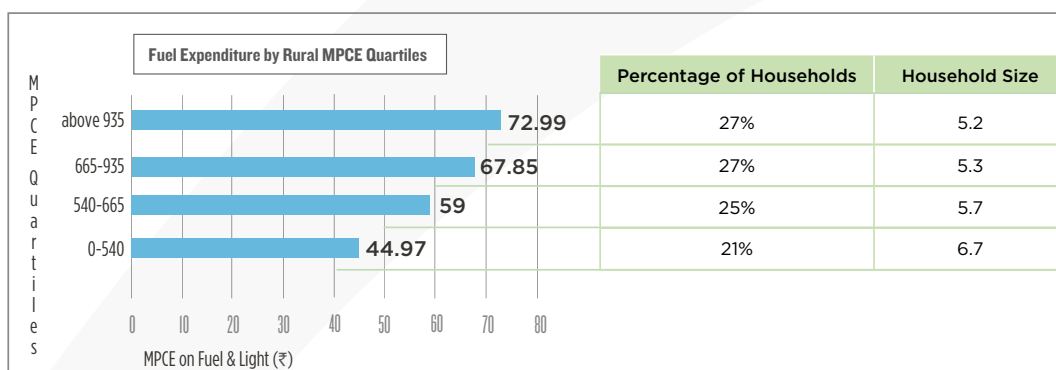


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	309,970,637	142,564,528	452,535,196
Average MPHE on Fuel & Light	345.93	415.96	365.30





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	309,970,637	190,691,132	142,564,528	134,651,080
Average MPHE on Fuel (₹)	345.93	212.81	415.96	392.87
Percentage of Market Value		62%		94%

### Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Jammu & Kashmir
Number of Households Using	810,243	97,880	908,123
Average Quantity/HH/Mo (kg.)	153.6	109.5	148.8
% of Users Paying	15%	52%	19%
Average MPHE (₹)	132.85	123.55	130.16

Monthly Consumption of Dung Cake	Rural	Urban	Jammu & Kashmir
Number of Households Using	419,154	47,023	466,177
% of Users Paying	24%	37%	26%
Average MPHE (₹)	60.72	49.64	59.12

Monthly Consumption of Kerosene	Rural	Urban	Jammu & Kashmir
Number of Households Using	662,087	210,946	873,033
Average Quantity/HH/Mo (litre)	3.0	4.5	3.3
Average MPHE (₹)	32.74	48.49	36.55

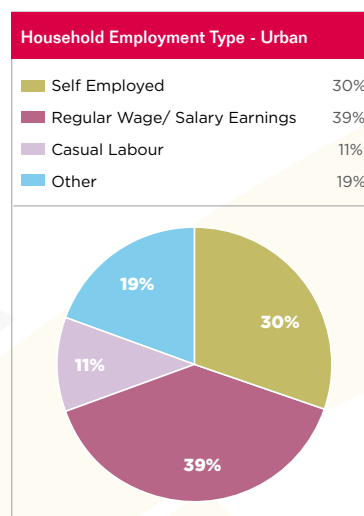
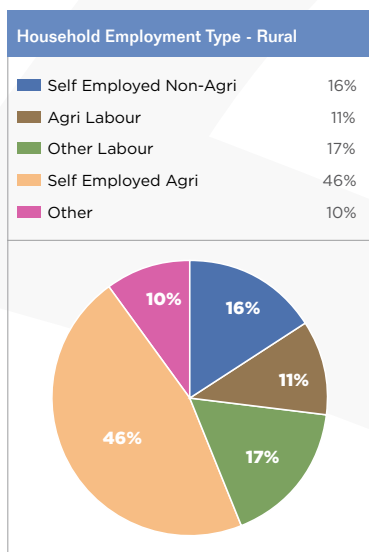
Monthly Consumption of LPG	Rural	Urban	Jammu & Kashmir
Number of Households Using	318,300	251,147	569,448
Average Quantity/HH/Mo (kg.)	6.5	12.2	9.0
Average MPHE (₹)	141.95	252.22	190.59

Monthly Consumption of Electricity	Rural	Urban	Jammu & Kashmir
Number of Households Using	851,055	324,102	1,175,158
Average Quantity/HH/Mo (std. units)	65.7	85.7	71.20
% of Users Paying	100%	99%	100%
Average MPHE (₹)	98.70	141.18	110.40

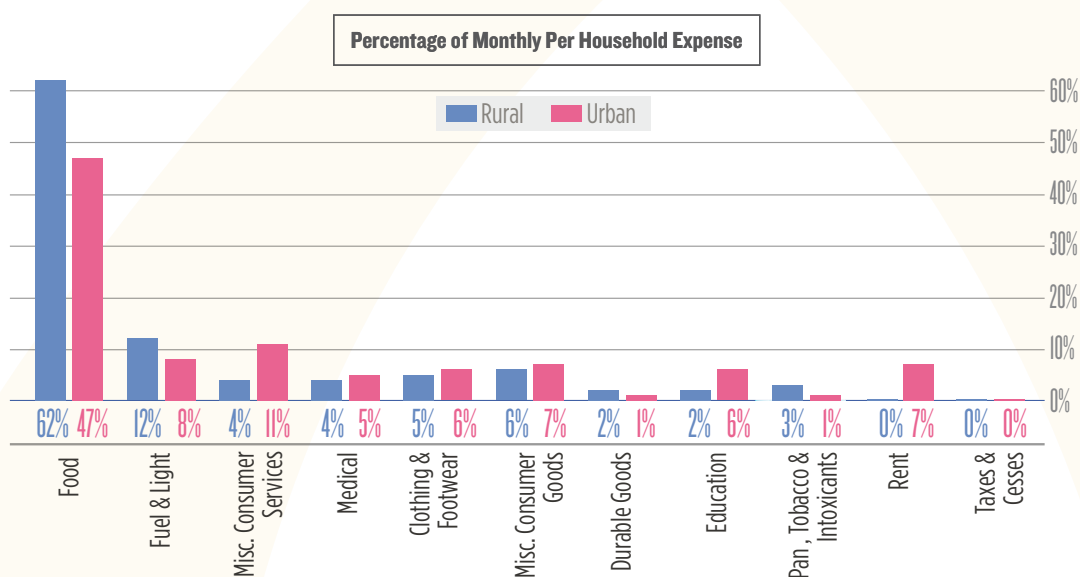


## Section 1: Jharkhand overview (Households, Employment and Expenditure)

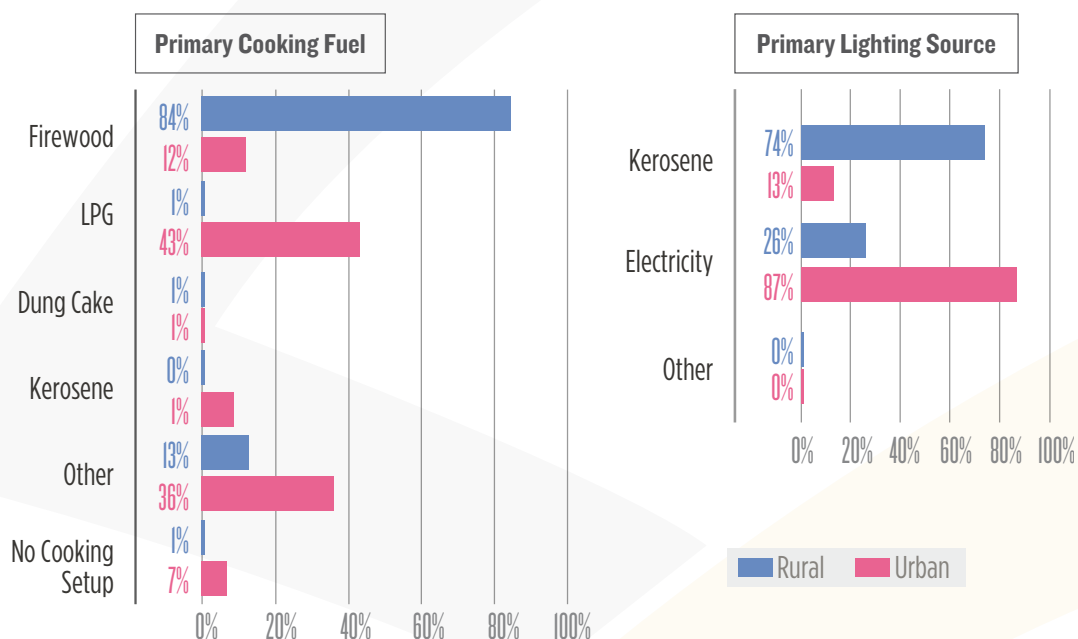
	Rural	Urban
No. of Households	3,929,655	844,630
% of India's Household Population	2.3%	
Average Household Size	5.18	4.63



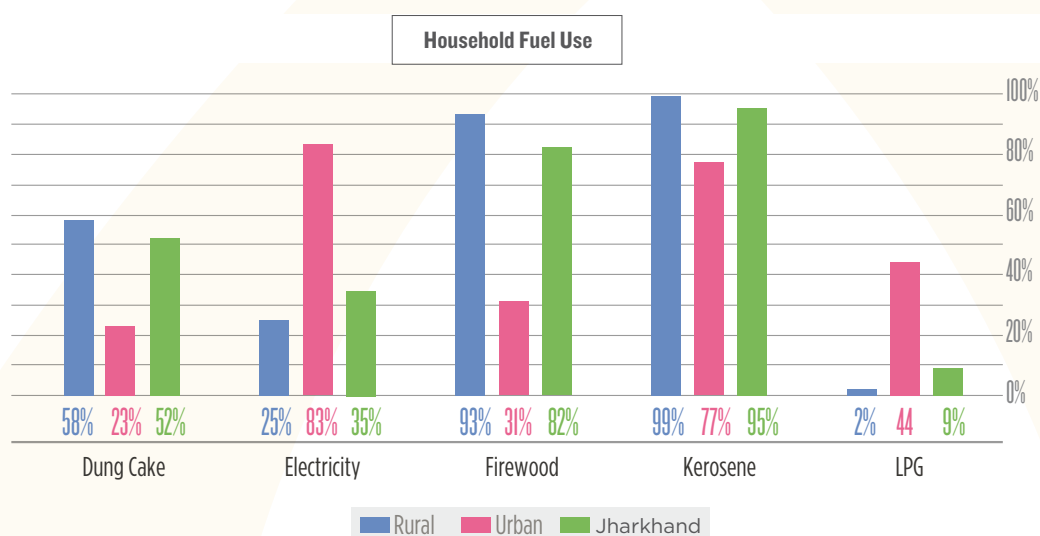
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	2,196.40	4,551.92	2,613.12

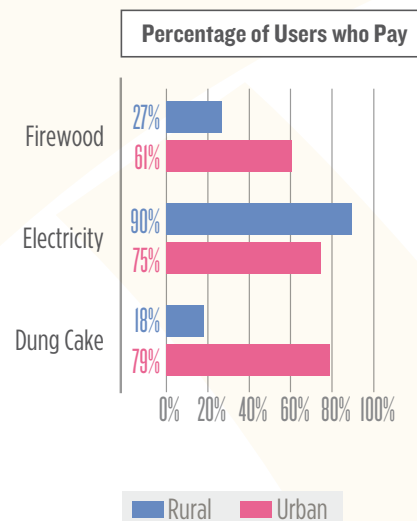
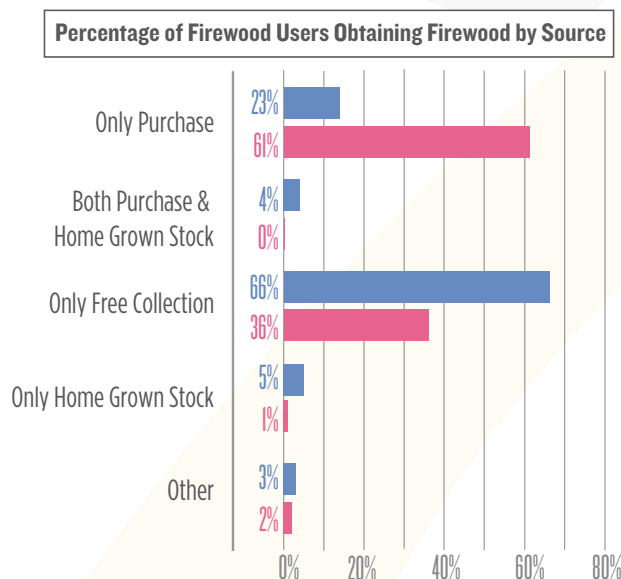
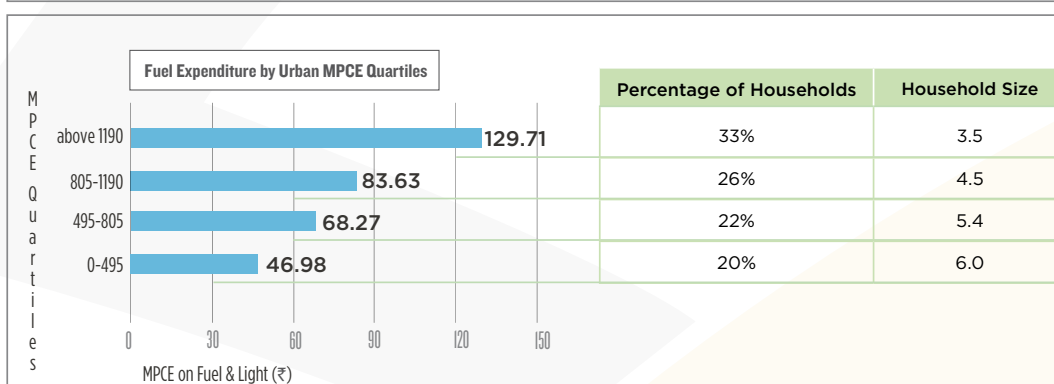
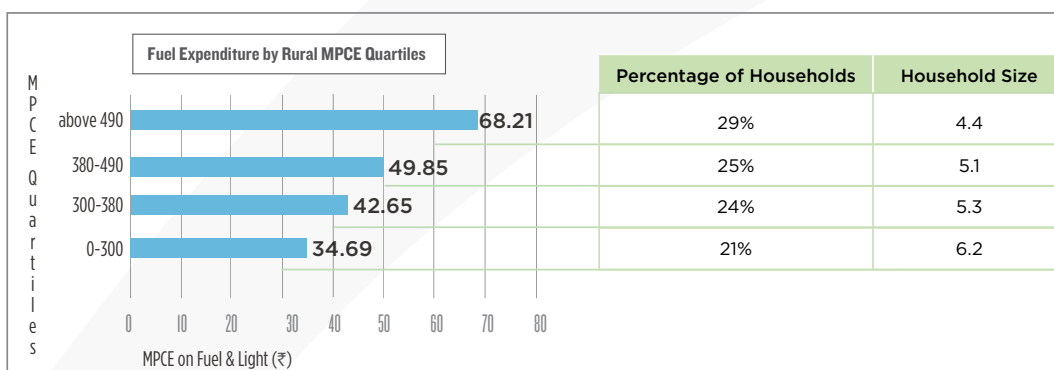


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total Monthly Expenditure on Fuel & Light	992,953,944	320,991,137	1,313,945,233
Average MPHE on Fuel & Light	252.68	380.04	275.21





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	992,953,944	492,730,443	320,991,137	281,300,779
Average MPHE on Fuel (₹)	252.68	125.39	380.04	333.05
Percentage of Market Value		50%		88%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Jharkhand
Number of Households Using	3,667,440	265,817	3,933,256
Average Quantity/HH/Mo (kg.)	128.7	86.5	125.9
% of Users Paying	27%	61%	29%
Average MPHE (₹)	140.85	112.91	136.85

Monthly Consumption of Dung Cake	Rural	Urban	Jharkhand
Number of Households Using	2,289,226	193,738	2,482,964
% of Users Paying	18%	79%	23%
Average MPHE (₹)	26.75	27.41	26.93

Monthly Consumption of Kerosene	Rural	Urban	Jharkhand
Number of Households Using	3,908,600	648,619	4,557,220
Average Quantity/HH/Mo (litre)	3.6	2.9	3.5
Average MPHE (₹)	48.75	46.52	48.43

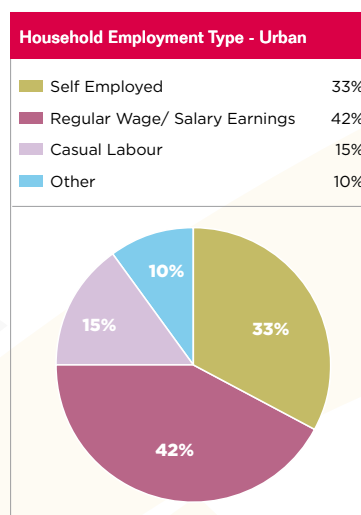
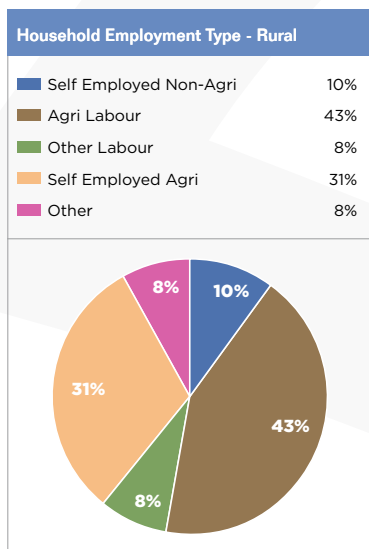
Monthly Consumption of LPG	Rural	Urban	Jharkhand
Number of Households Using	62,586	373,930	436,516
Average Quantity/HH/Mo (kg.)	14.2	15.5	15.3
Average MPHE (₹)	244.15	305.57	296.77

Monthly Consumption of Electricity	Rural	Urban	Jharkhand
Number of Households Using	977,838	703,075	1,680,913
Average Quantity/HH/Mo (std. units)	39.4	84.6	58.34
% of Users Paying	90%	75%	83%
Average MPHE (₹)	58.22	144.91	90.63

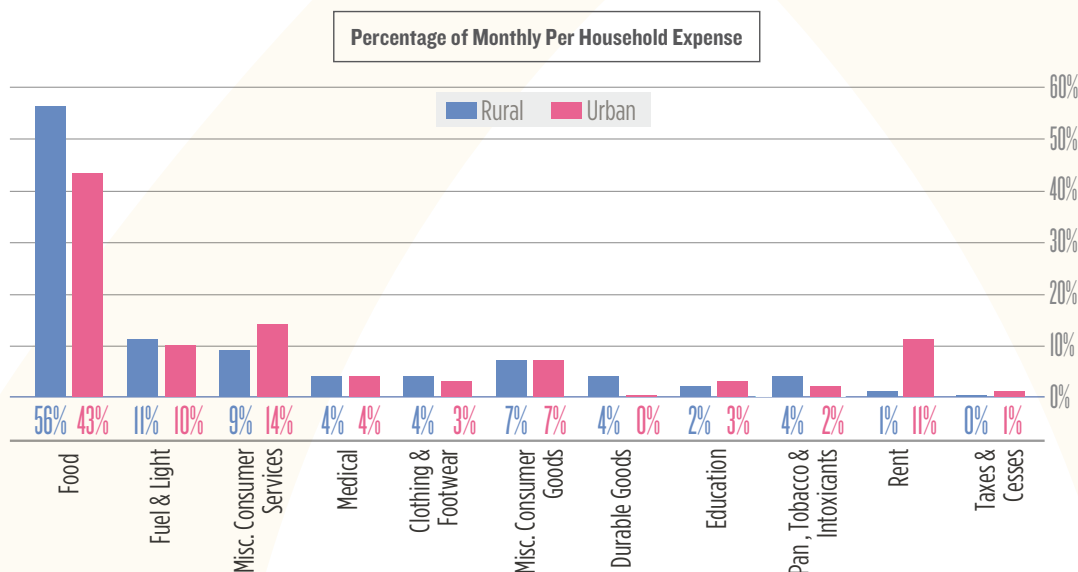


## Section 1: Karnataka overview (Households, Employment and Expenditure)

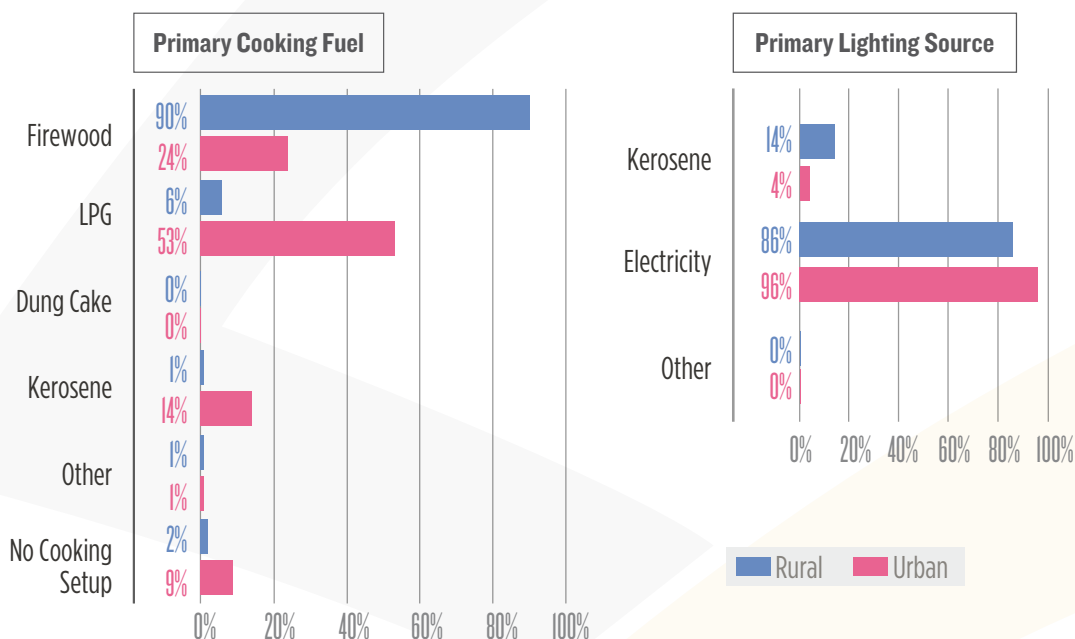
	Rural	Urban
No. of Households	7,255,724	3,619,456
% of India's Household Population	5.3%	
Average Household Size	4.70	4.19



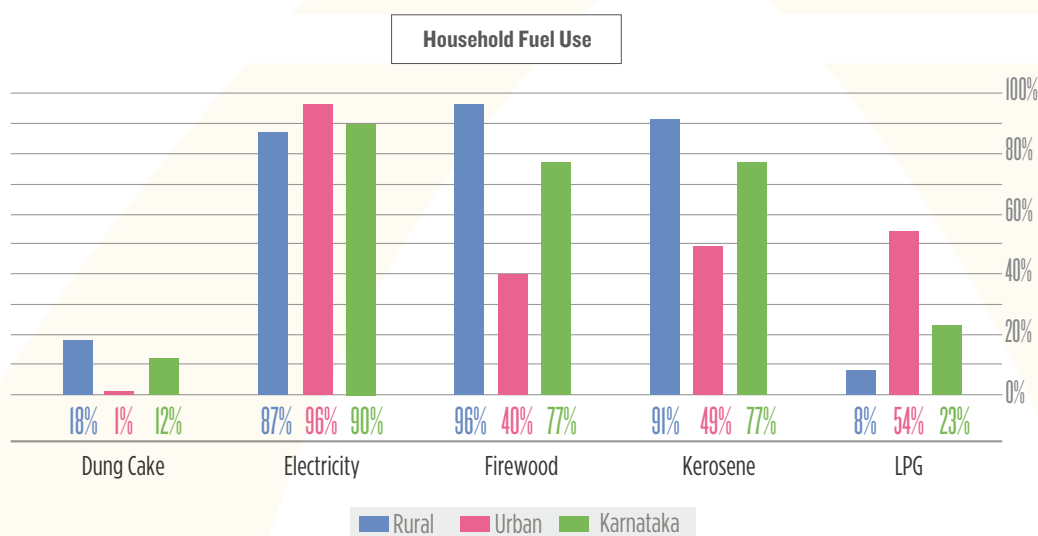
	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	2,386.86	4,314.65	3,028.47

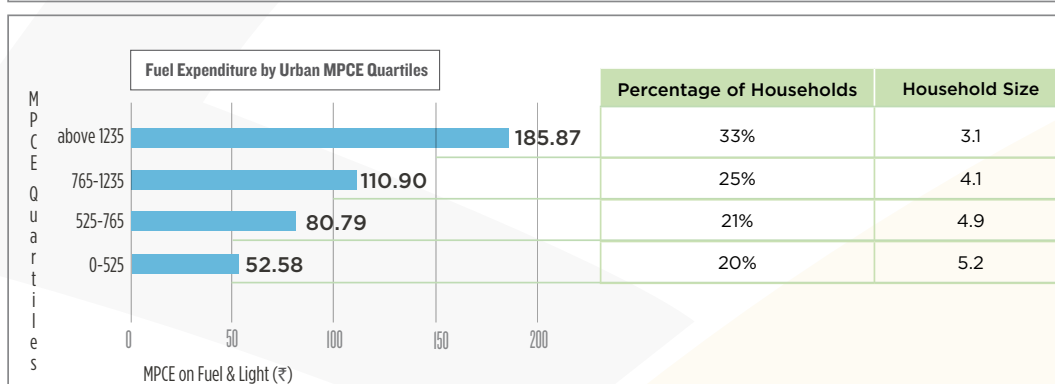
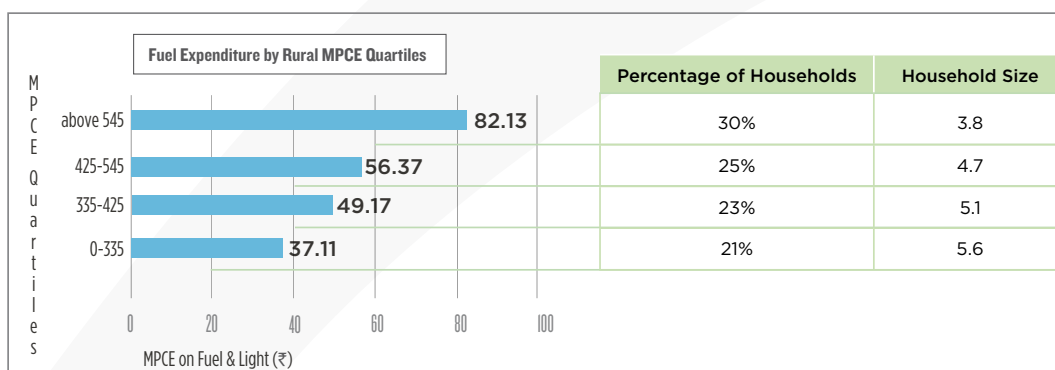


## Section 2: Energy Use (Consumption and Expenditure)

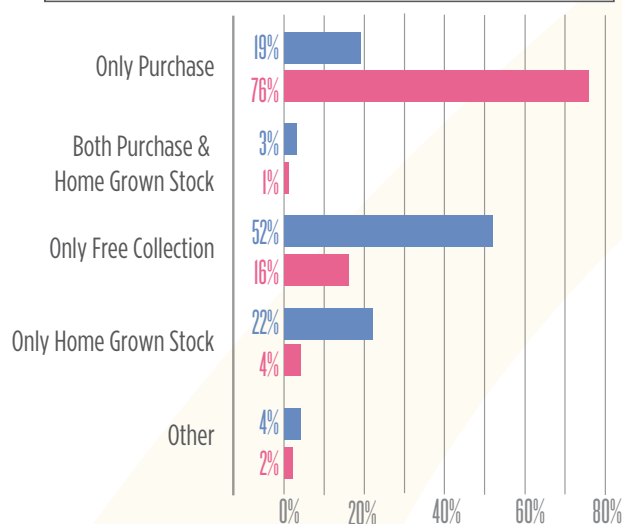


	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	1,915,040,790	1,630,222,594	3,545,263,620
Average MPHE on Fuel & Light	263.94	450.41	326.00

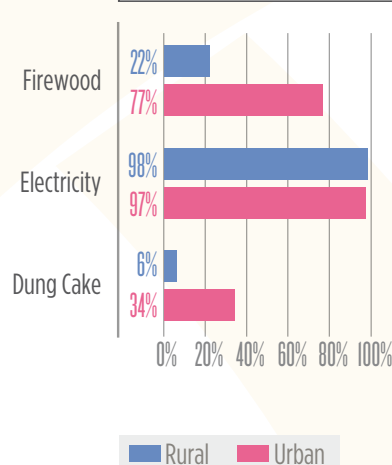




**Percentage of Firewood Users Obtaining Firewood by Source**



**Percentage of Users who Pay**



Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	1,915,040,790	1,089,179,190	1,630,222,594	1,584,494,744
Average MPHE on Fuel (₹)	263.94	150.11	450.41	437.77
Percentage of Market Value		57%		97%

### Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Karnataka
Number of Households Using	6,984,411	1,429,937	8,414,348
Average Quantity/HH/Mo (kg.)	163.1	113.6	154.7
% of Users Paying	22%	77%	32%
Average MPHE (₹)	169.04	135.94	155.26

Monthly Consumption of Dung Cake	Rural	Urban	Karnataka
Number of Households Using	1,274,722	46,571	1,321,293
% of Users Paying	6%	34%	7%
Average MPHE (₹)	28.50	26.53	28.17

Monthly Consumption of Kerosene	Rural	Urban	Karnataka
Number of Households Using	6,578,898	1,771,461	8,350,360
Average Quantity/HH/Mo (litre)	3.1	6.6	3.8
Average MPHE (₹)	35.12	98.25	48.51

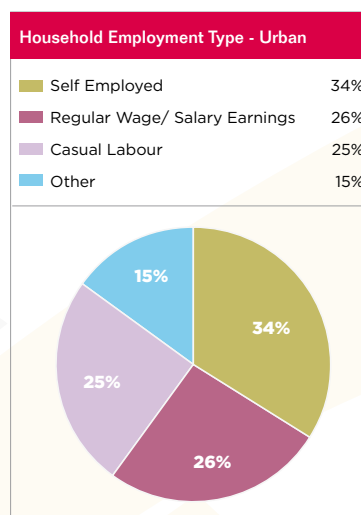
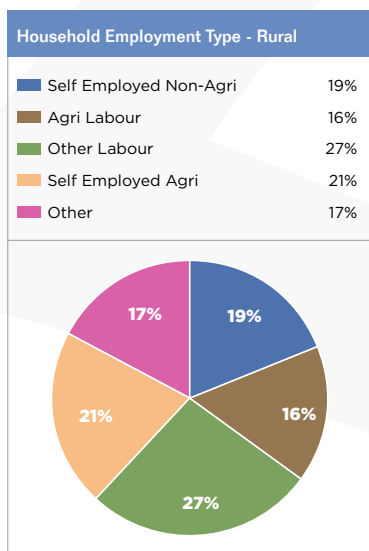
Monthly Consumption of LPG	Rural	Urban	Karnataka
Number of Households Using	553,451	1,960,550	2,514,001
Average Quantity/HH/Mo (kg.)	10.2	12.4	11.9
Average MPHE (₹)	222.41	259.69	251.48

Monthly Consumption of Electricity	Rural	Urban	Karnataka
Number of Households Using	6,279,751	3,471,808	9,751,559
Average Quantity/HH/Mo (std. units)	29.6	79.2	47.27
% of Users Paying	98%	97%	97%
Average MPHE (₹)	68.90	214.37	120.53

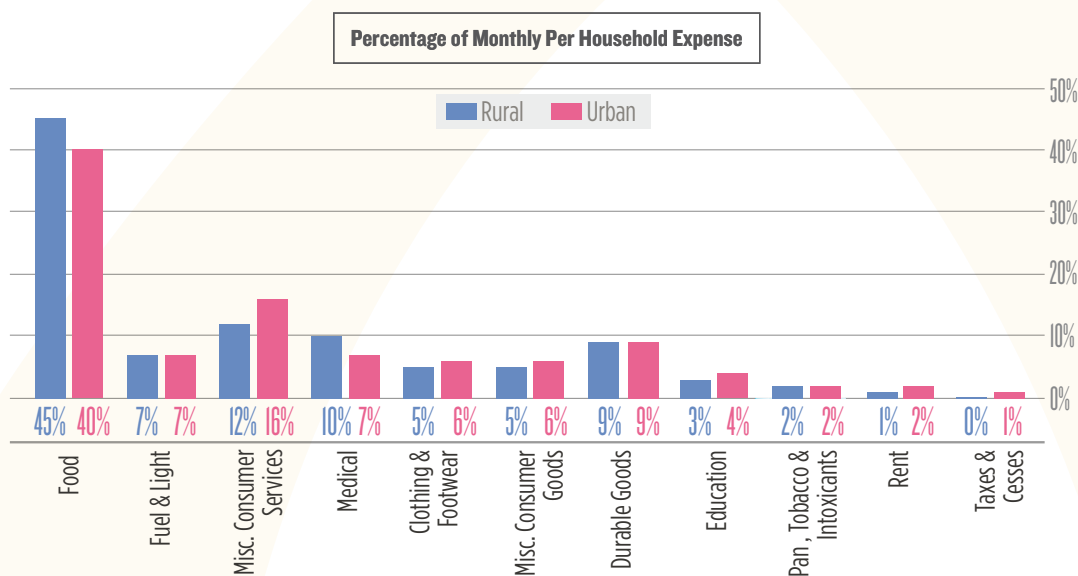


## Section 1: Kerala overview (Households, Employment and Expenditure)

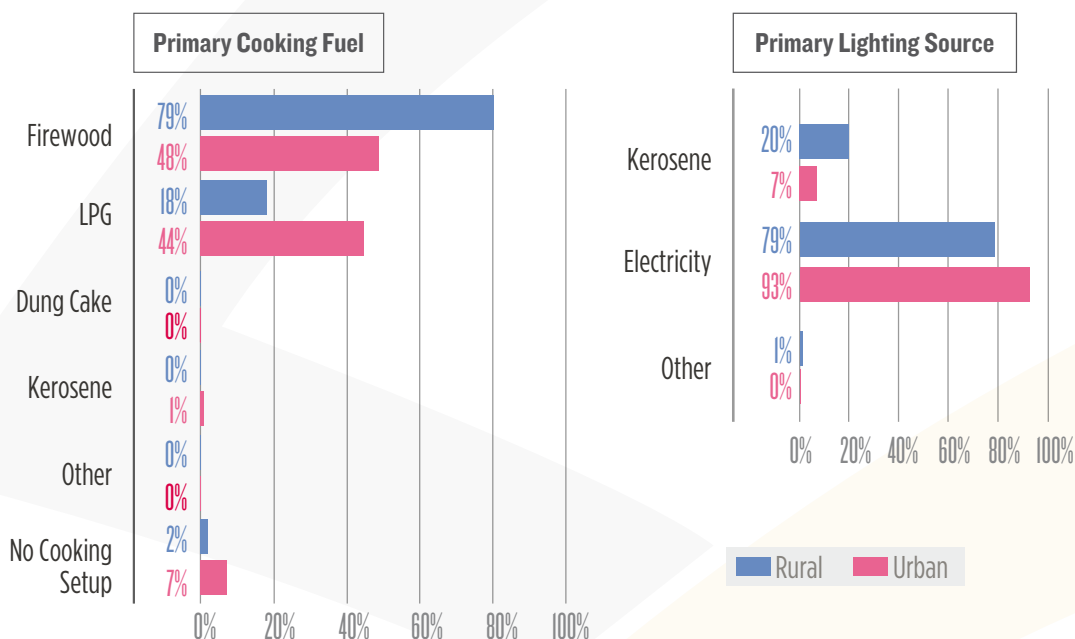
	Rural	Urban
No. of Households	5,473,831	1,745,824
% of India's Household Population	3.5%	
Average Household Size	4.31	4.14



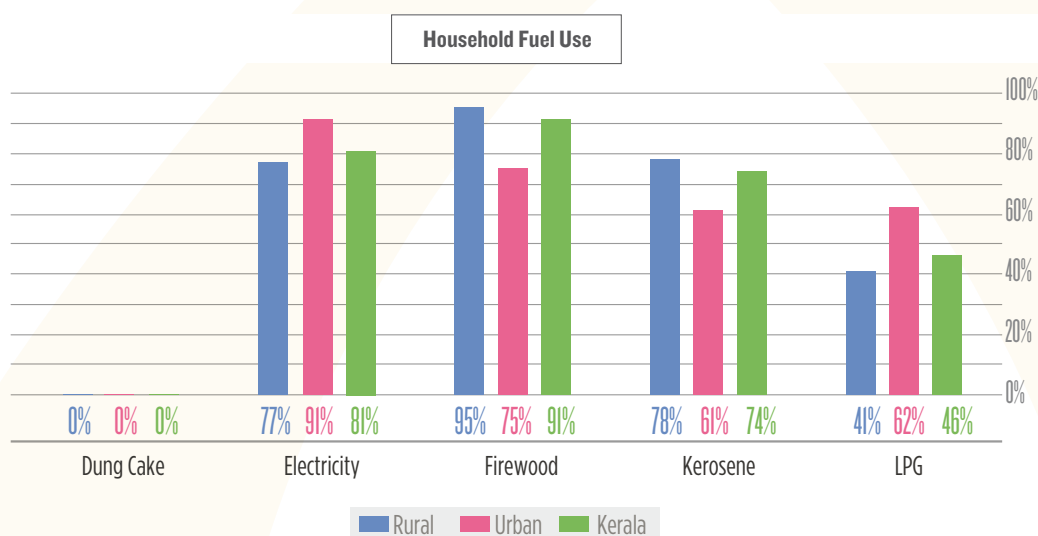
	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	4,351.69	5,334.70	4,589.39

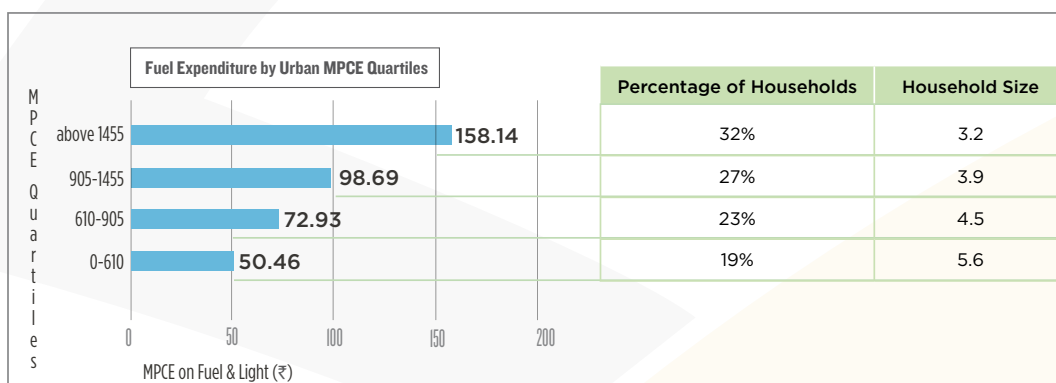
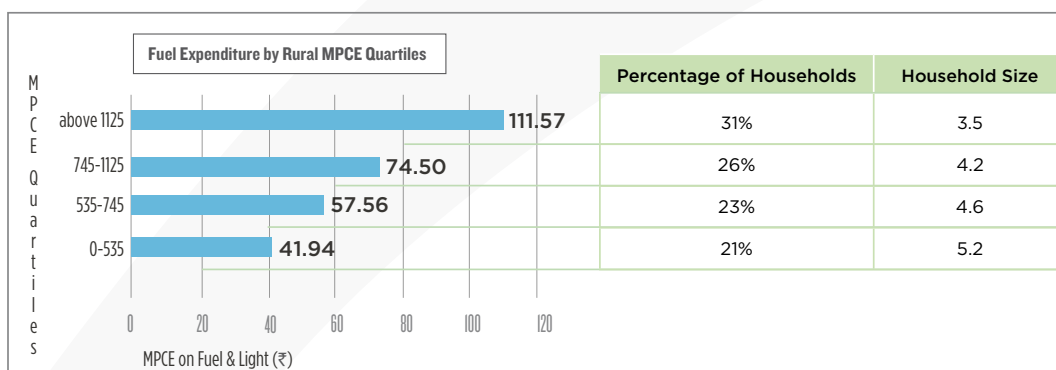


## Section 2: Energy Use (Consumption and Expenditure)

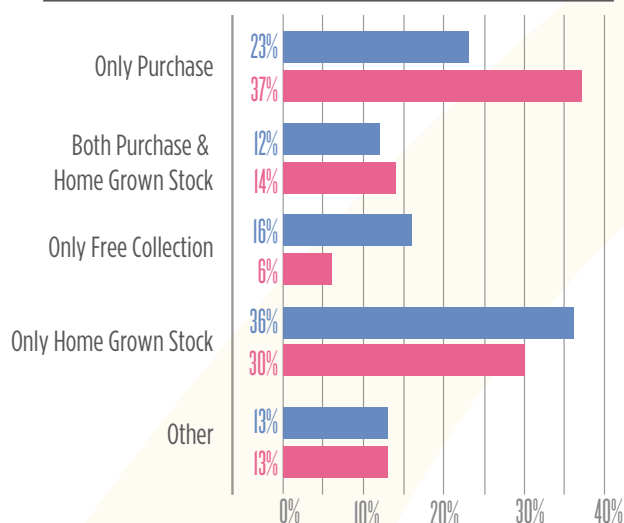


	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	1,681,956,274	686,994,742	2,368,951,303
Average MPHE on Fuel & Light	307.27	393.51	328.13

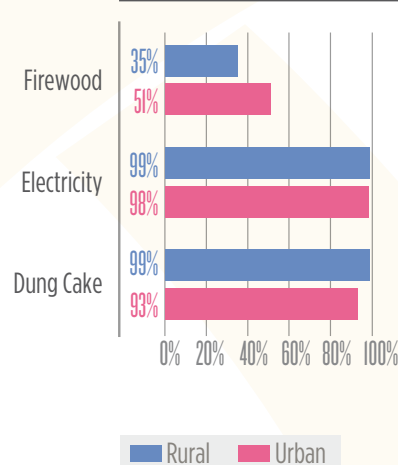




**Percentage of Firewood Users Obtaining Firewood by Source**



**Percentage of Users who Pay**



Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	1,681,956,274	1,219,960,843	686,994,742	618,540,134
Average MPHE on Fuel (₹)	307.27	222.87	393.51	354.30
Percentage of Market Value		73%		90%

### Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Kerala
Number of Households Using	5,225,302	1,313,187	6,538,489
Average Quantity/HH/Mo (kg.)	145.2	104.4	137.0
% of Users Paying	35%	51%	39%
Average MPHE (₹)	168.88	149.93	163.82

Monthly Consumption of Dung Cake	Rural	Urban	Kerala
Number of Households Using	19,295	662	19,957
% of Users Paying	99%	93%	99%
Average MPHE (₹)	38.56	39.68	38.60

Monthly Consumption of Kerosene	Rural	Urban	Kerala
Number of Households Using	4,289,198	1,063,274	5,352,472
Average Quantity/HH/Mo (litre)	2.8	2.5	2.7
Average MPHE (₹)	30.08	29.13	29.89

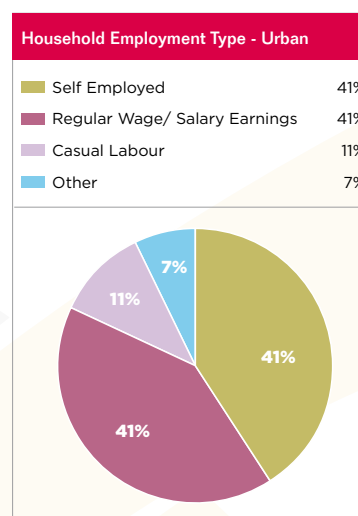
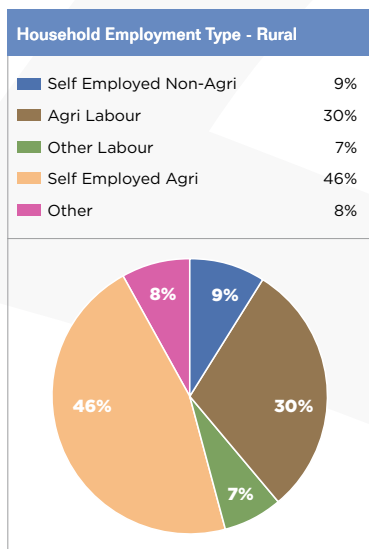
Monthly Consumption of LPG	Rural	Urban	Kerala
Number of Households Using	2,227,579	1,082,342	3,309,921
Average Quantity/HH/Mo (kg.)	6.7	9.2	7.5
Average MPHE (₹)	134.16	194.26	153.82

Monthly Consumption of Electricity	Rural	Urban	Kerala
Number of Households Using	4,240,421	1,585,709	5,826,130
Average Quantity/HH/Mo (std. units)	63.3	90.4	70.72
% of Users Paying	99%	98%	99%
Average MPHE (₹)	103.02	167.76	120.56

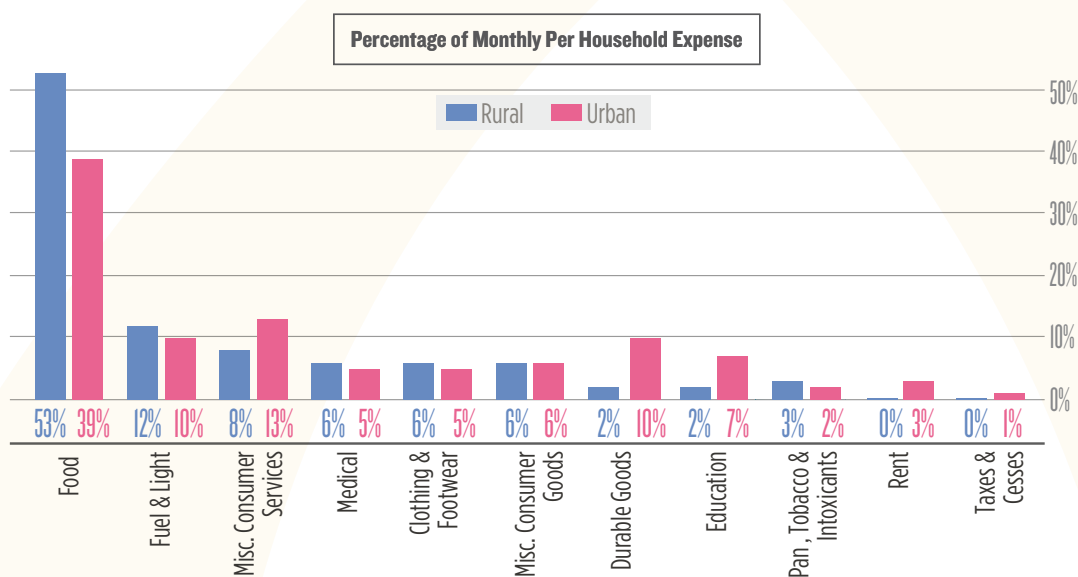


## Section 1: Madhya Pradesh overview (Households, Employment and Expenditure)

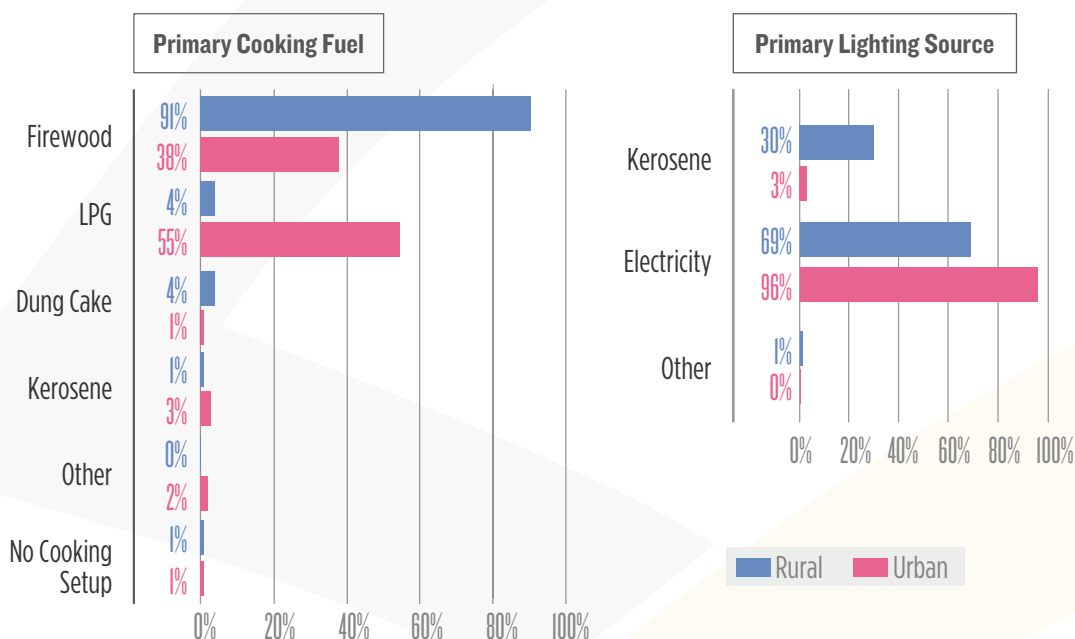
	Rural	Urban
No. of Households	8,799,596	2,782,993
% of India's Household Population	5.6%	
Average Household Size	5.23	5.06



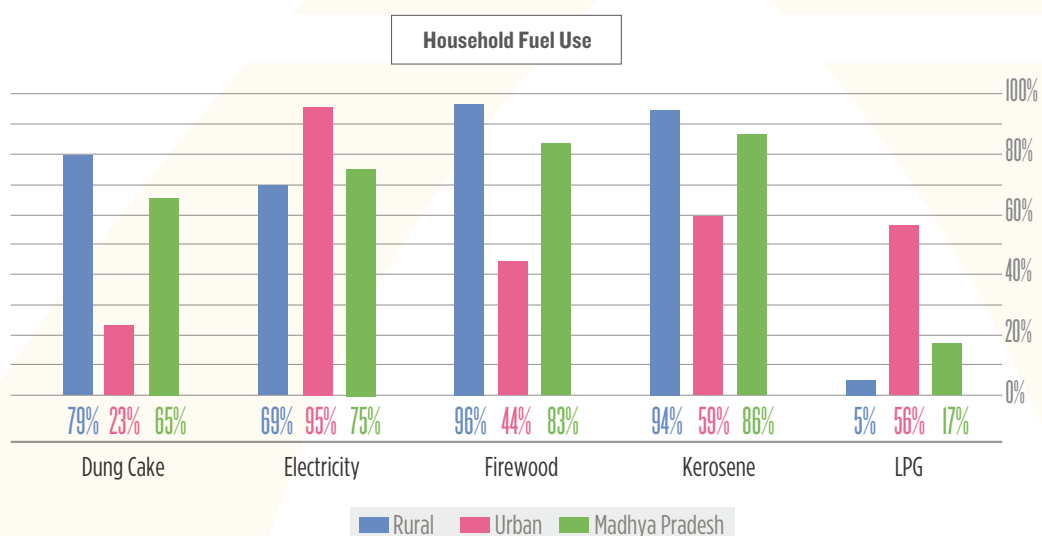
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	2,289.30	4,553.52	2,833.33

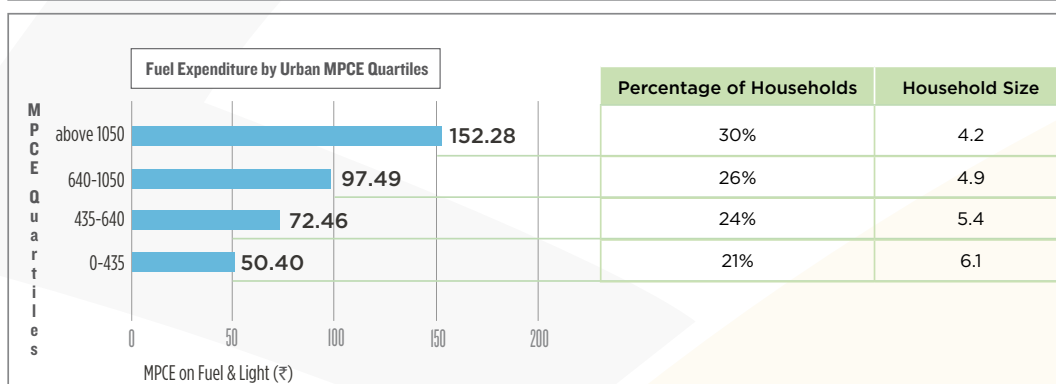
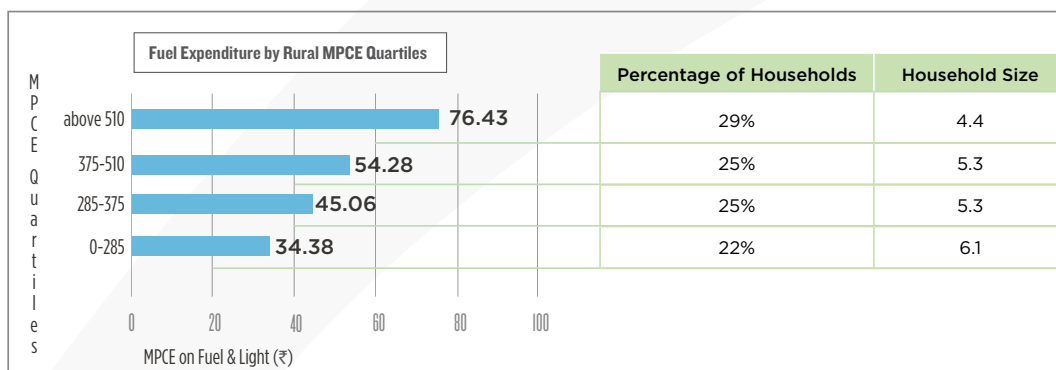


## Section 2: Energy Use (Consumption and Expenditure)

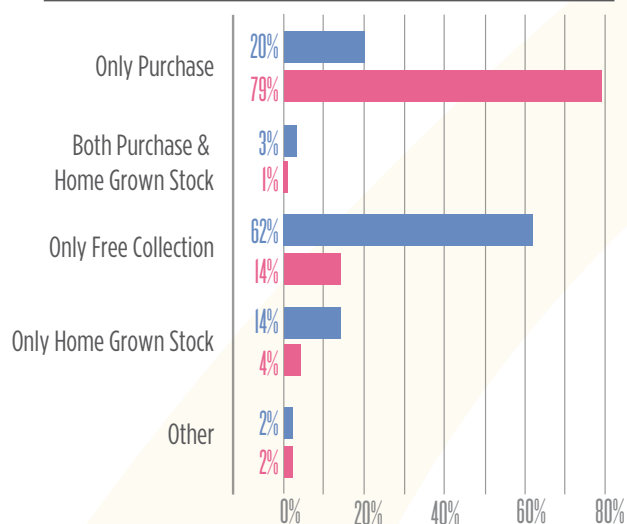


	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	2,415,248,486	1,310,183,304	3,725,432,215
Average MPHE on Fuel & Light	274.47	470.78	321.64

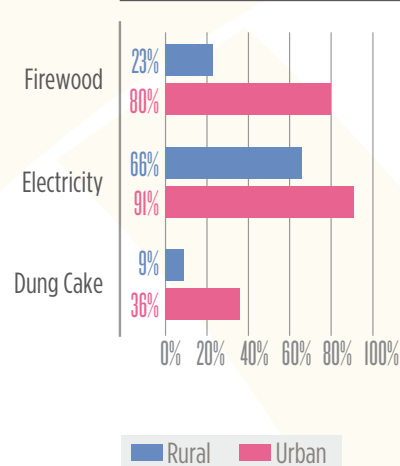




**Percentage of Firewood Users Obtaining Firewood by Source**



**Percentage of Users who Pay**



Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	2,415,248,486	1,223,075,947	1,310,183,304	1,200,177,853
Average MPHE on Fuel (₹)	274.47	138.99	470.78	431.25
Percentage of Market Value		51%		92%

### Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Madhya Pradesh
Number of Households Using	8,420,767	1,223,860	9,644,627
Average Quantity/HH/Mo (kg.)	102.7	87.8	100.8
% of Users Paying	23%	80%	30%
Average MPHE (₹)	123.30	131.96	126.22

Monthly Consumption of Dung Cake	Rural	Urban	Madhya Pradesh
Number of Households Using	6,941,070	631,239	7,572,309
% of Users Paying	9%	36%	12%
Average MPHE (₹)	53.06	32.29	47.66

Monthly Consumption of Kerosene	Rural	Urban	Madhya Pradesh
Number of Households Using	8,306,436	1,641,993	9,948,429
Average Quantity/HH/Mo (litre)	3.1	3.4	3.1
Average MPHE (₹)	32.13	37.52	33.02

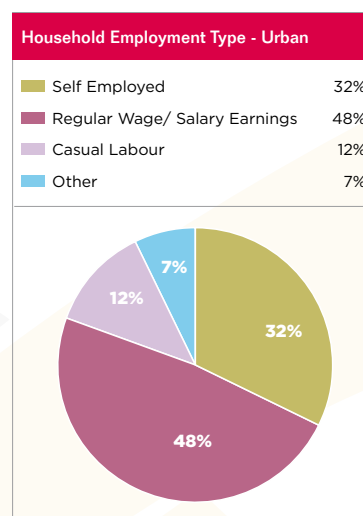
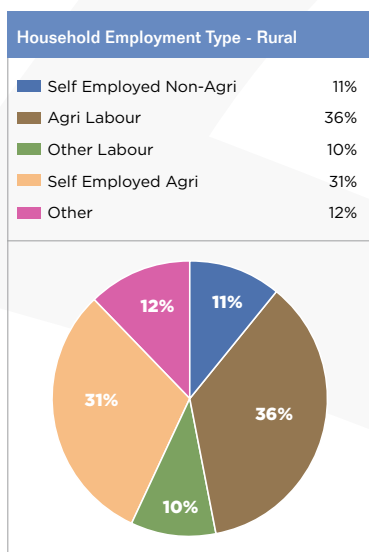
Monthly Consumption of LPG	Rural	Urban	Madhya Pradesh
Number of Households Using	409,617	1,558,362	1,967,979
Average Quantity/HH/Mo (kg.)	10.0	11.7	11.3
Average MPHE (₹)	218.34	244.75	239.25

Monthly Consumption of Electricity	Rural	Urban	Madhya Pradesh
Number of Households Using	6,042,529	2,636,210	8,678,739
Average Quantity/HH/Mo (std. units)	58.6	96.8	70.19
% of Users Paying	66%	91%	74%
Average MPHE (₹)	135.66	256.11	180.78

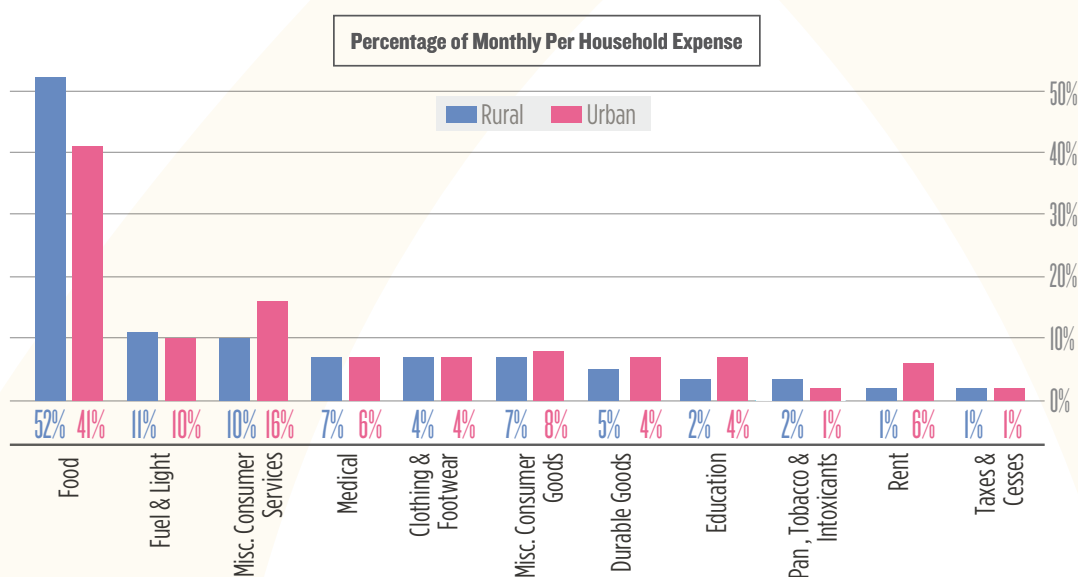


## Section 1: Maharashtra overview (Households, Employment and Expenditure)

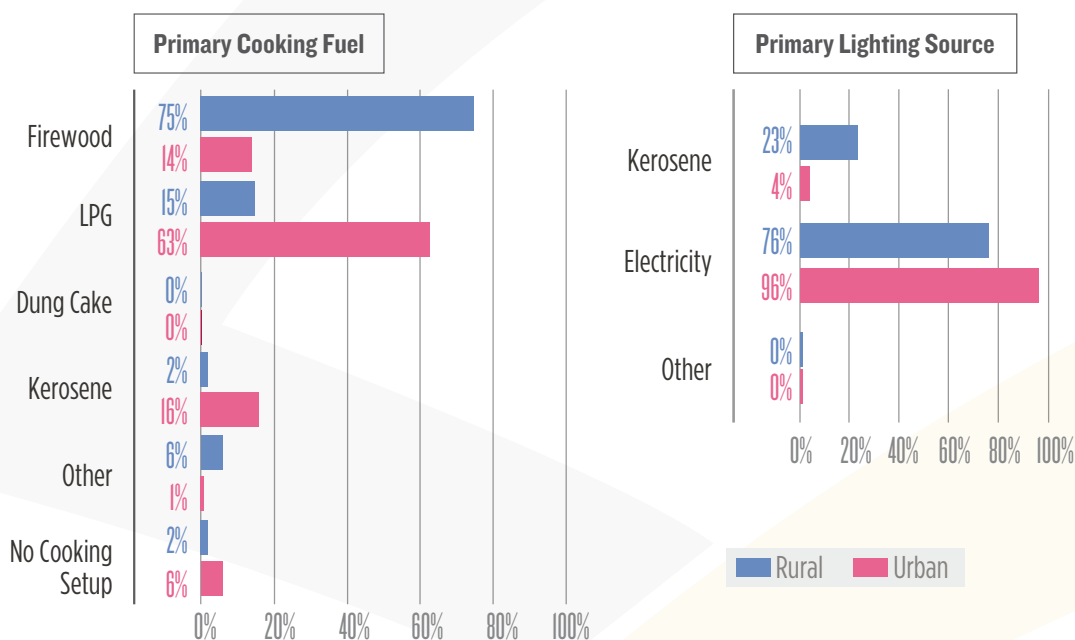
	Rural	Urban
No. of Households	11,955,239	8,485,990
% of India's Household Population	9.9%	
Average Household Size	4.61	4.39



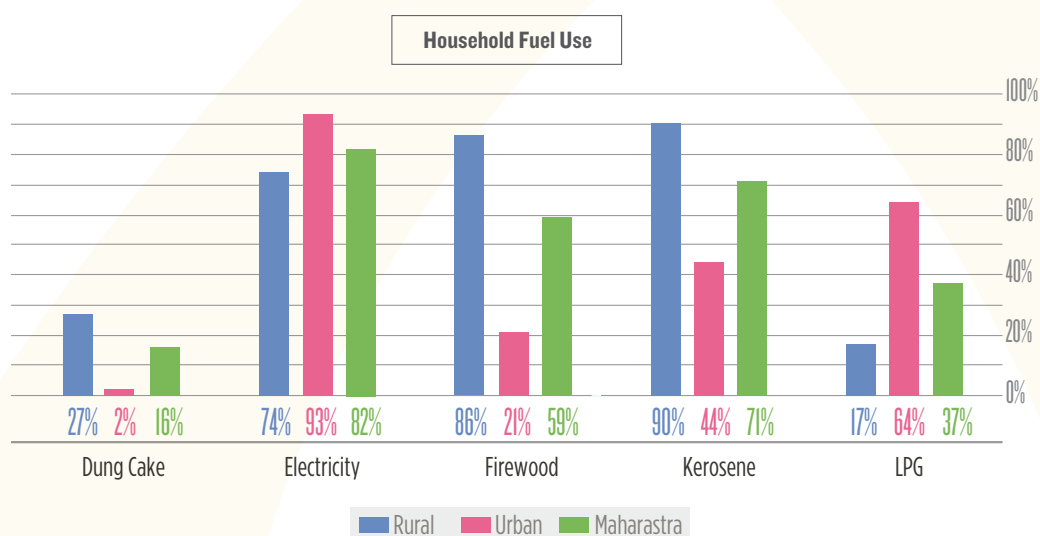
	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	2,613.75	5,024.10	3,614.39

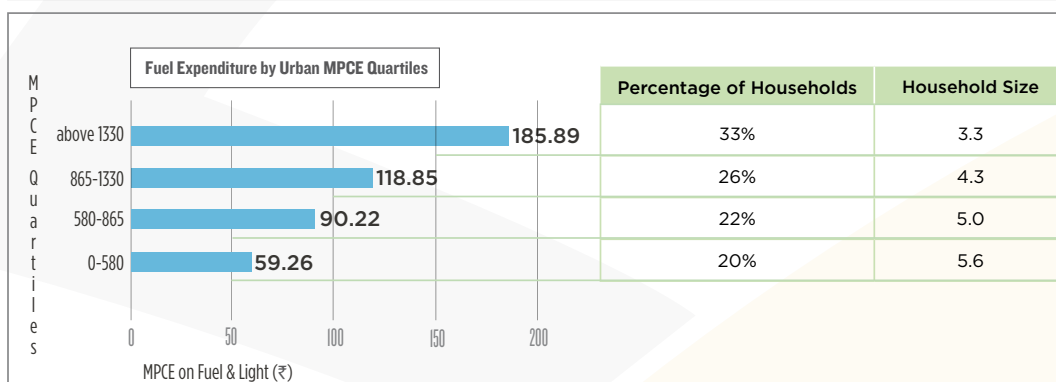
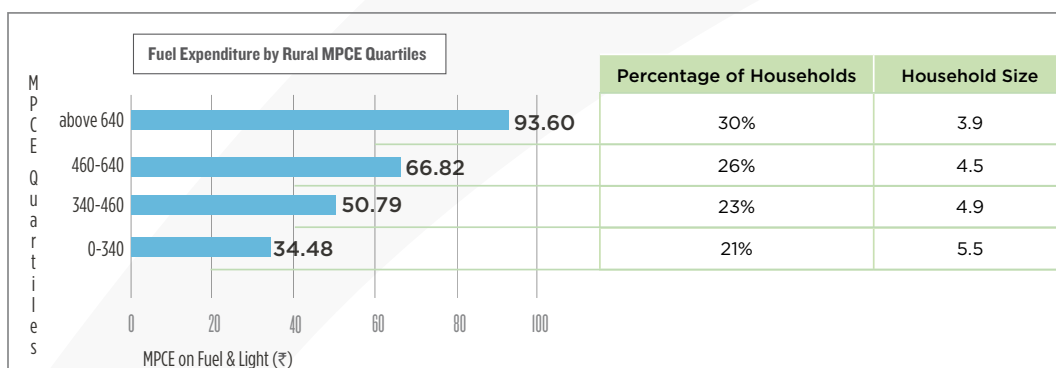


## Section 2: Energy Use (Consumption and Expenditure)

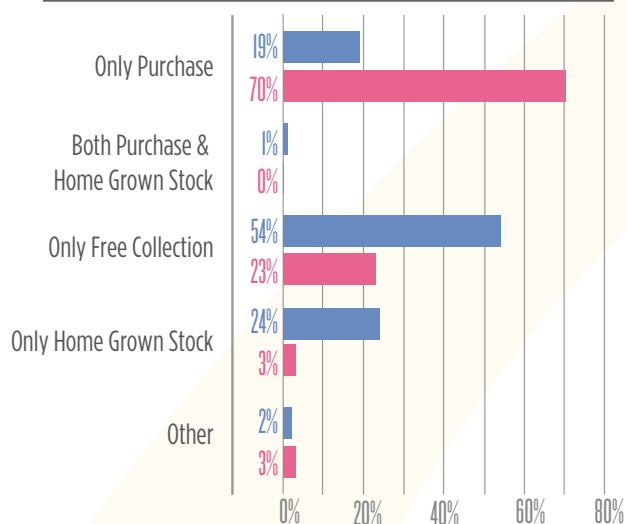


	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	3,384,190,925	4,224,463,558	7,608,655,440
Average MPHE on Fuel & Light	283.07	497.82	372.22

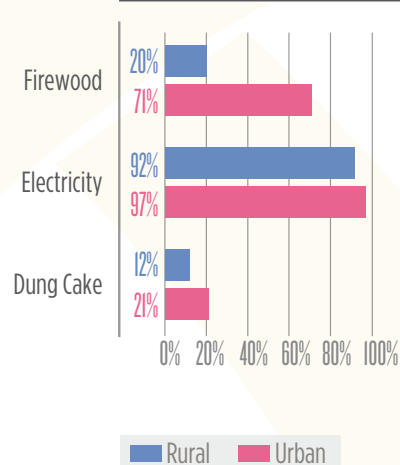




**Percentage of Firewood Users Obtaining Firewood by Source**



**Percentage of Users who Pay**



Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	3,384,190,925	2,151,690,609	4,224,463,558	4,122,240,195
Average MPHE on Fuel (₹)	283.07	179.98	497.82	485.77
Percentage of Market Value		64%		98%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Maharashtra
Number of Households Using	10,227,857	1,746,404	11,974,261
Average Quantity/HH/Mo (kg.)	119.0	78.9	113.1
% of Users Paying	20%	71%	28%
Average MPHE (₹)	139.79	129.94	136.14

Monthly Consumption of Dung Cake	Rural	Urban	Maharashtra
Number of Households Using	3,208,582	148,997	3,357,579
% of Users Paying	12%	21%	12%
Average MPHE (₹)	36.39	40.92	36.73

Monthly Consumption of Kerosene	Rural	Urban	Maharashtra
Number of Households Using	10,770,173	3,718,317	14,488,490
Average Quantity/HH/Mo (litre)	3.5	8.2	4.7
Average MPHE (₹)	42.11	117.64	61.49

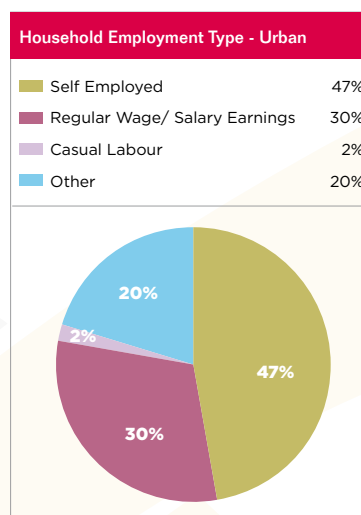
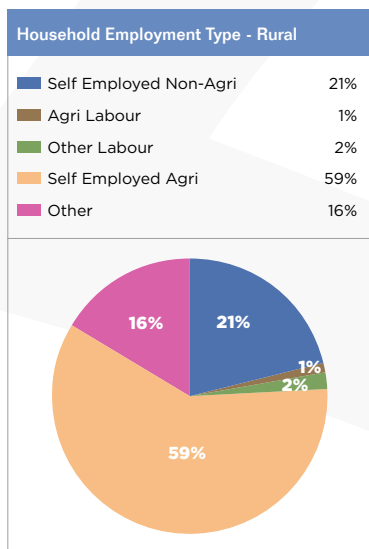
Monthly Consumption of LPG	Rural	Urban	Maharashtra
Number of Households Using	2,022,911	5,438,514	7,461,425
Average Quantity/HH/Mo (kg.)	9.6	12.3	11.6
Average MPHE (₹)	200.77	255.30	240.52

Monthly Consumption of Electricity	Rural	Urban	Maharashtra
Number of Households Using	8,891,525	7,918,016	16,809,541
Average Quantity/HH/Mo (std. units)	49.8	102.8	74.73
% of Users Paying	92%	97%	94%
Average MPHE (₹)	104.52	271.53	185.08

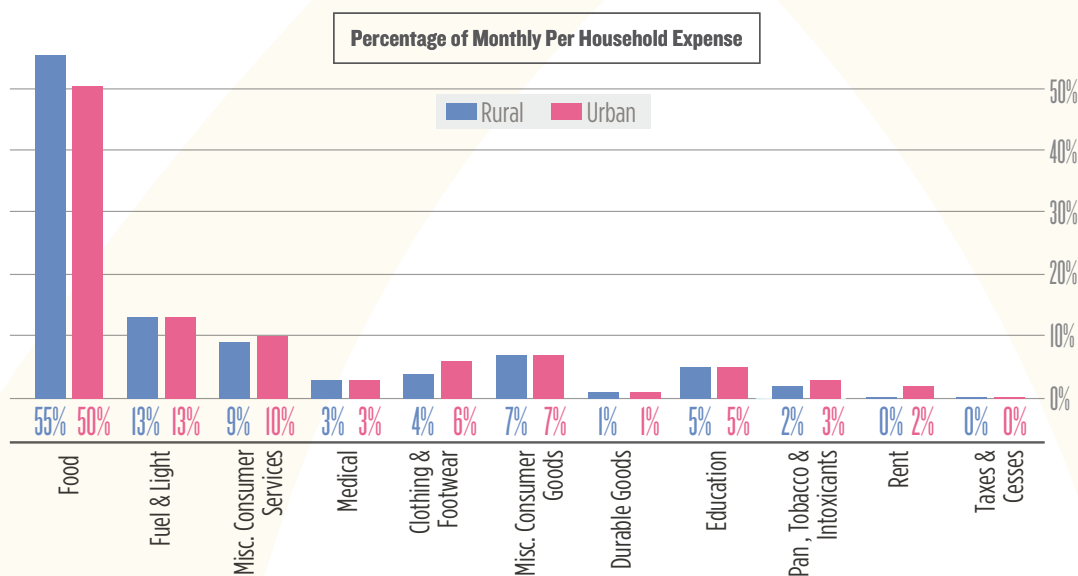


## Section 1: Manipur overview (Households, Employment and Expenditure)

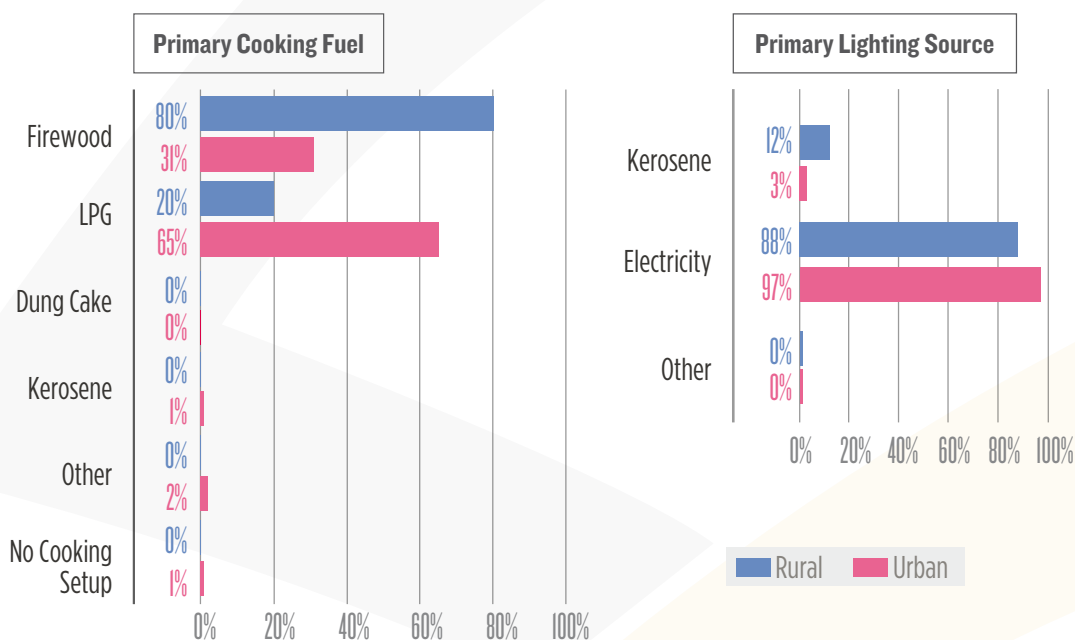
	Rural	Urban
No. of Households	286,217	97,623
% of India's Household Population	0.2%	
Average Household Size	5.07	4.81



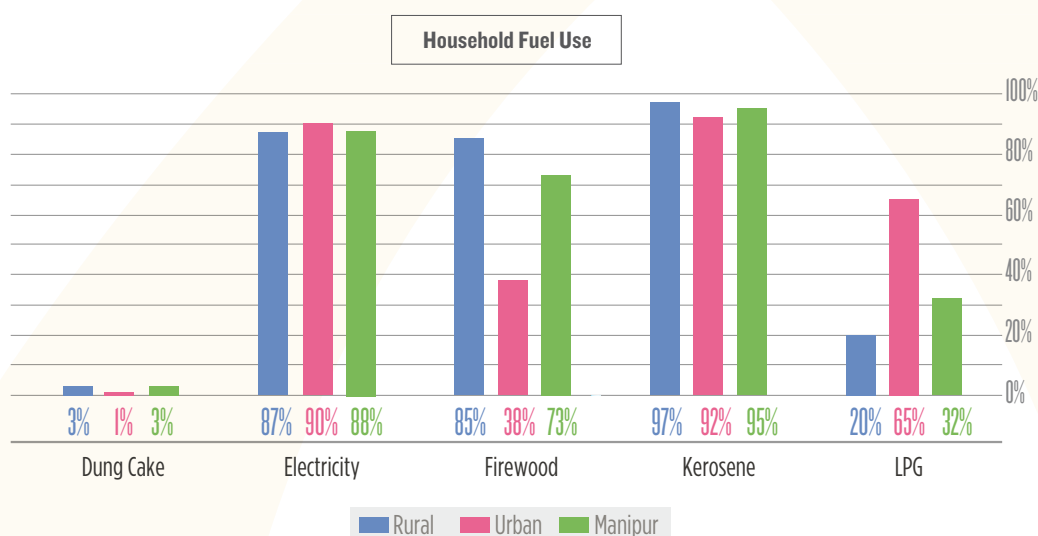
	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	3,091.66	3,440.94	3,180.49

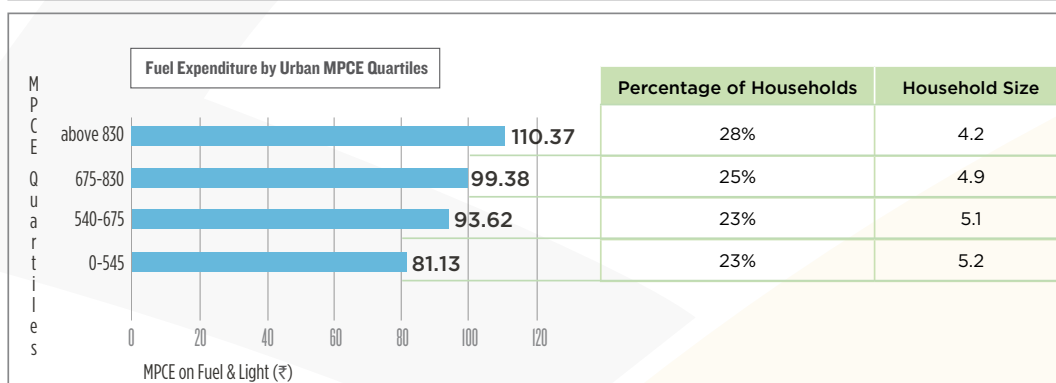
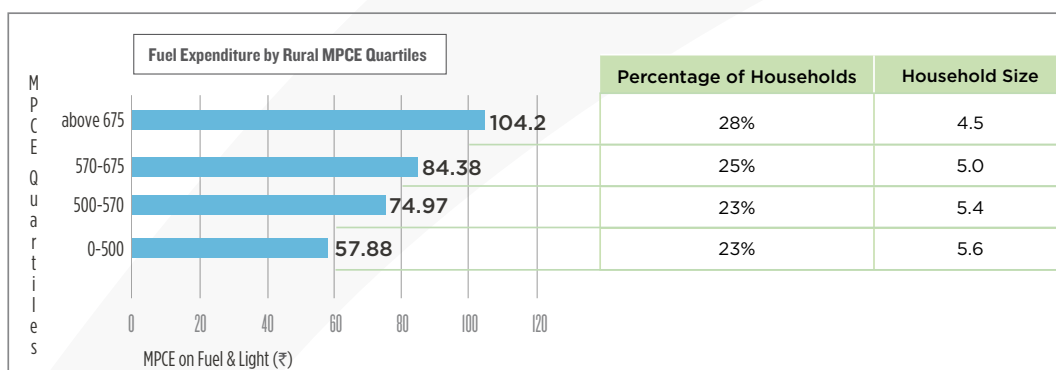


## Section 2: Energy Use (Consumption and Expenditure)

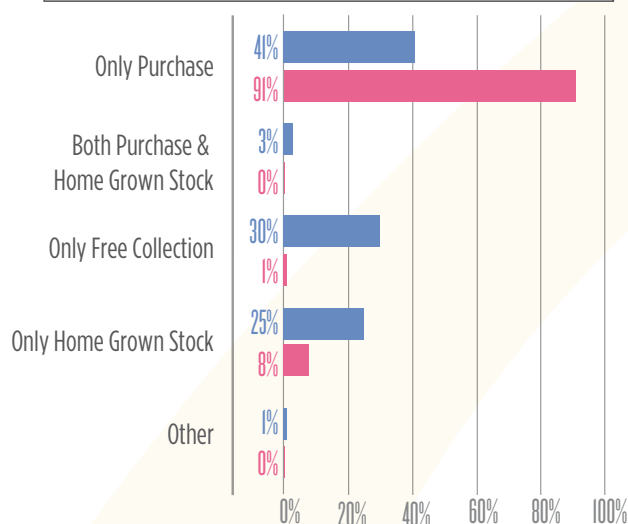


	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	116,467,163	45,022,624	161,489,796
Average MPHE on Fuel & Light	406.92	461.19	420.72

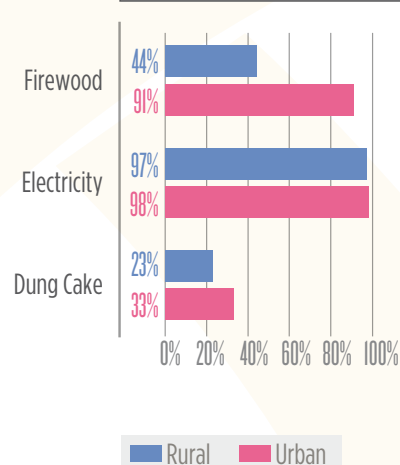




**Percentage of Firewood Users Obtaining Firewood by Source**



**Percentage of Users who Pay**



Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	116,467,163	93,898,854	45,022,624	43,761,416
Average MPHE on Fuel (₹)	406.92	328.07	461.19	448.27
Percentage of Market Value		81%		97%

### Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Manipur
Number of Households Using	242,523	37,265	279,788
Average Quantity/HH/Mo (kg.)	151.5	110.6	146.1
% of Users Paying	44%	91%	50%
Average MPHE (₹)	213.55	192.06	208.34

Monthly Consumption of Dung Cake	Rural	Urban	Manipur
Number of Households Using	9,399	1,447	10,846
% of Users Paying	23%	33%	24%
Average MPHE (₹)	46.07	105.19	56.77

Monthly Consumption of Kerosene	Rural	Urban	Manipur
Number of Households Using	276,369	89,691	366,060
Average Quantity/HH/Mo (litre)	2.4	2.4	2.4
Average MPHE (₹)	42.78	40.96	42.34

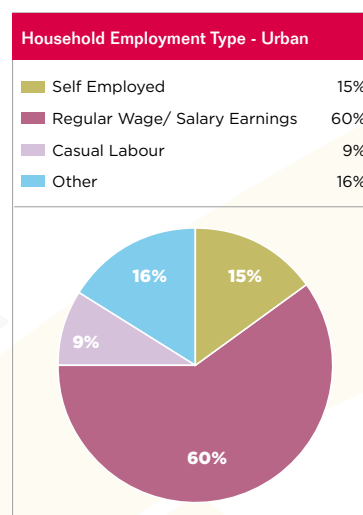
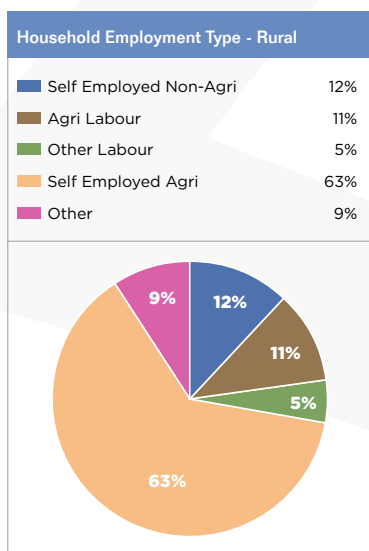
Monthly Consumption of LPG	Rural	Urban	Manipur
Number of Households Using	57,682	63,558	121,240
Average Quantity/HH/Mo (kg.)	12.3	12.1	12.2
Average MPHE (₹)	260.16	247.90	253.73

Monthly Consumption of Electricity	Rural	Urban	Manipur
Number of Households Using	248,217	87,952	336,169
Average Quantity/HH/Mo (std. units)	63.0	69.3	64.61
% of Users Paying	97%	98%	98%
Average MPHE (₹)	159.85	175.71	164.02

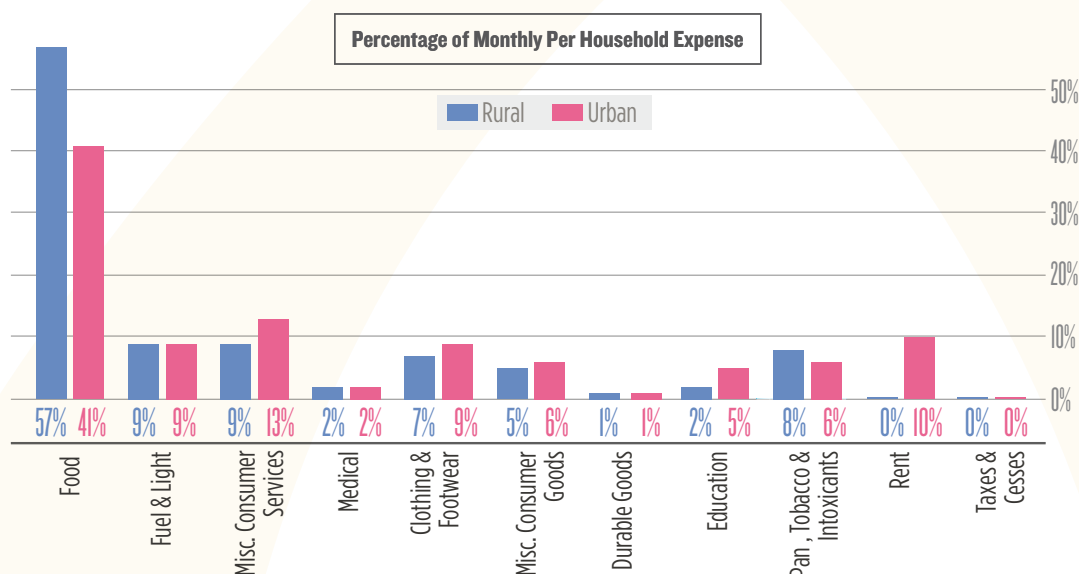


## Section 1: Meghalaya overview (Households, Employment and Expenditure)

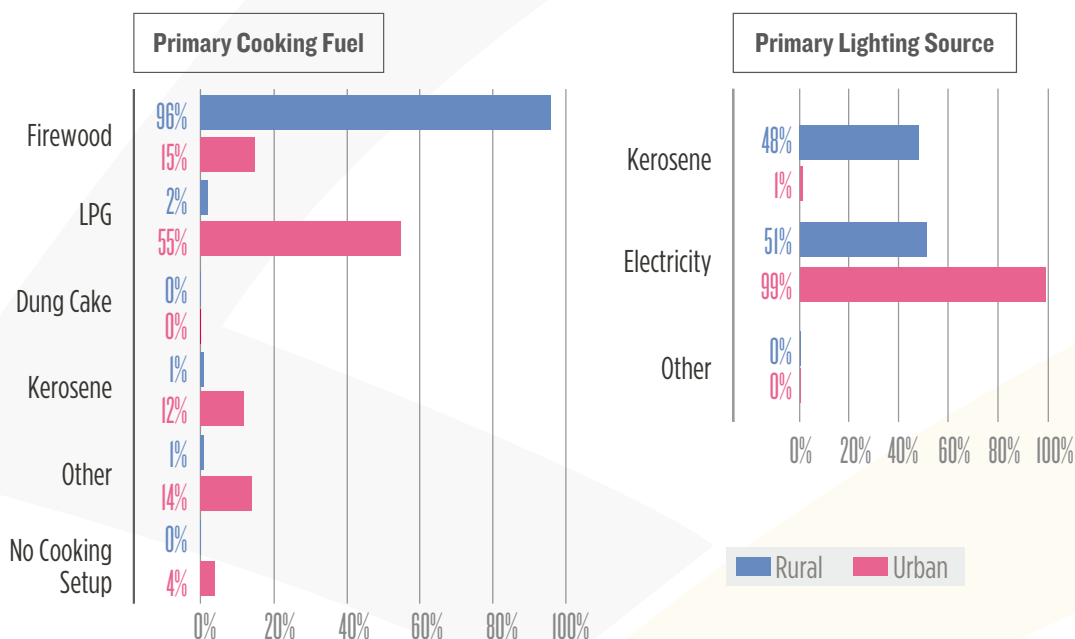
	Rural	Urban
No. of Households	370,695	63,965
% of India's Household Population	0.2%	
Average Household Size	4.87	4.33



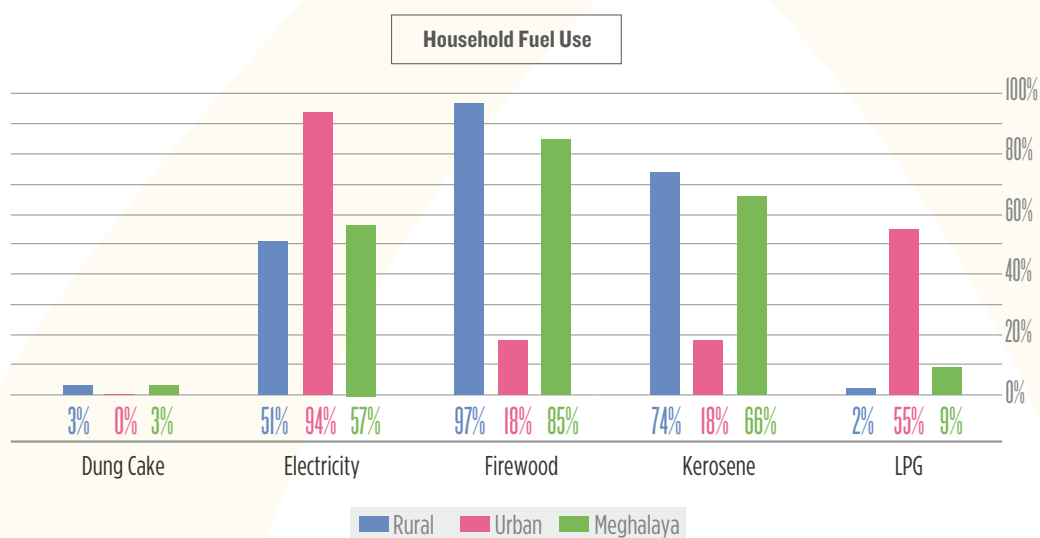
	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	3,164.93	5,111.71	3,451.42

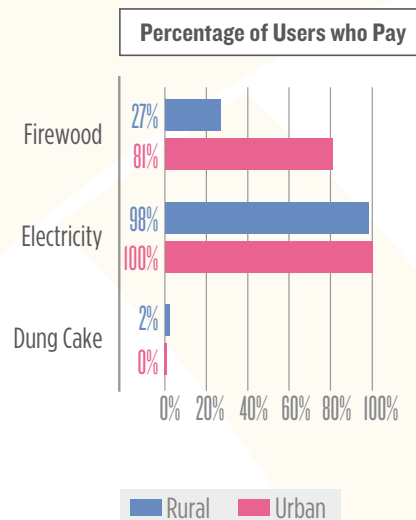
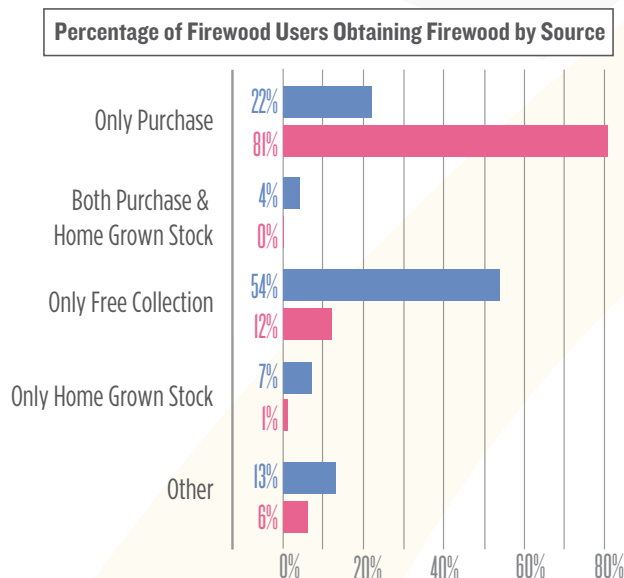
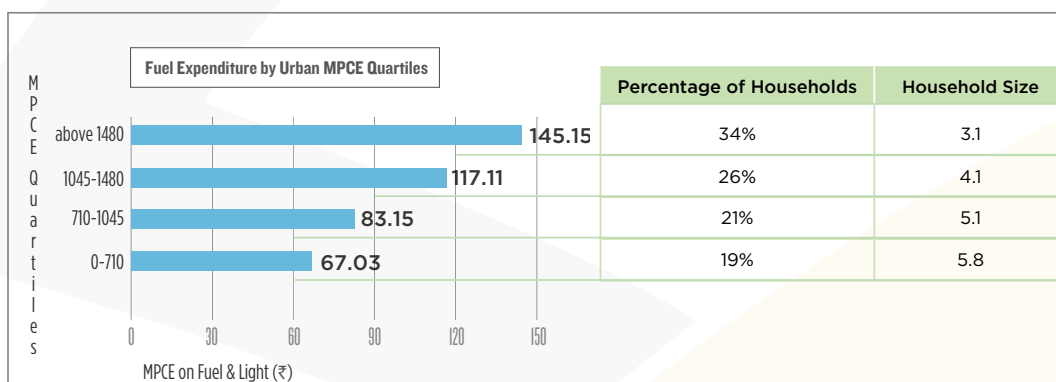
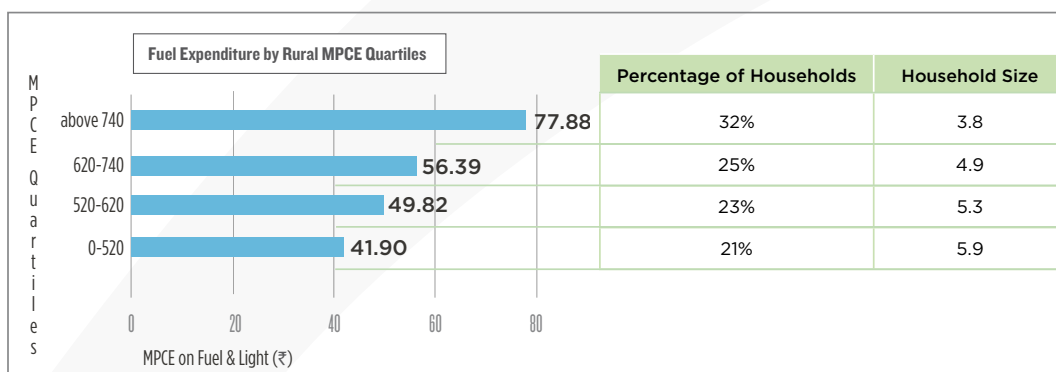


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	101,934,022	28,485,561	130,419,587
Average MPHE on Fuel & Light	274.98	445.33	300.05





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	101,934,022	53,932,975	28,485,561	28,202,618
Average MPHE on Fuel (₹)	274.98	145.49	445.33	440.90
Percentage of Market Value		53%		99%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood & Chips	Rural	Urban	Meghalaya
Number of Households Using	359,477	11,821	371,298
Average Quantity/HH/Mo (kg.)	236.4	177.3	234.5
% of Users Paying	27%	81%	28%
Average MPHE (₹)	225.71	239.50	226.97

Monthly Consumption of Dung Cake	Rural	Urban	Meghalaya
Number of Households Using	11,362	0	11,362
% of Users Paying	2%	-	2%
Average MPHE (₹)	47.00	-	47.00

Monthly Consumption of Kerosene	Rural	Urban	Meghalaya
Number of Households Using	275,911	11,692	287,603
Average Quantity/HH/Mo (litre)	2.6	14.4	3.1
Average MPHE (₹)	38.38	219.90	45.76

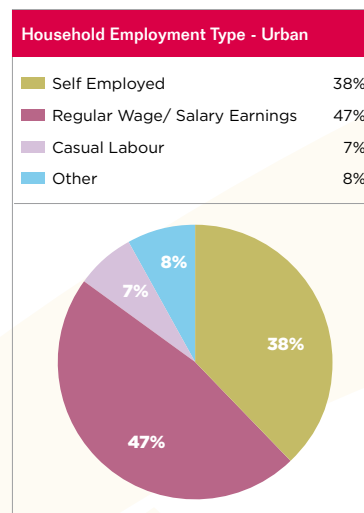
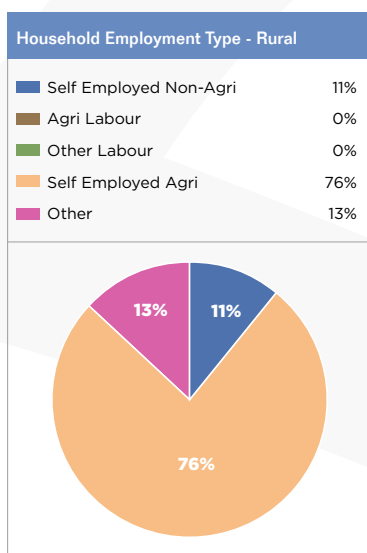
Monthly Consumption of LPG	Rural	Urban	Meghalaya
Number of Households Using	5,662	35,414	41,076
Average Quantity/HH/Mo (kg.)	13.0	13.0	13.0
Average MPHE (₹)	274.94	278.83	278.29

Monthly Consumption of Electricity	Rural	Urban	Meghalaya
Number of Households Using	188,292	60,287	248,580
Average Quantity/HH/Mo (std. units)	51.0	112.5	65.90
% of Users Paying	98%	100%	99%
Average MPHE (₹)	78.11	177.13	102.41

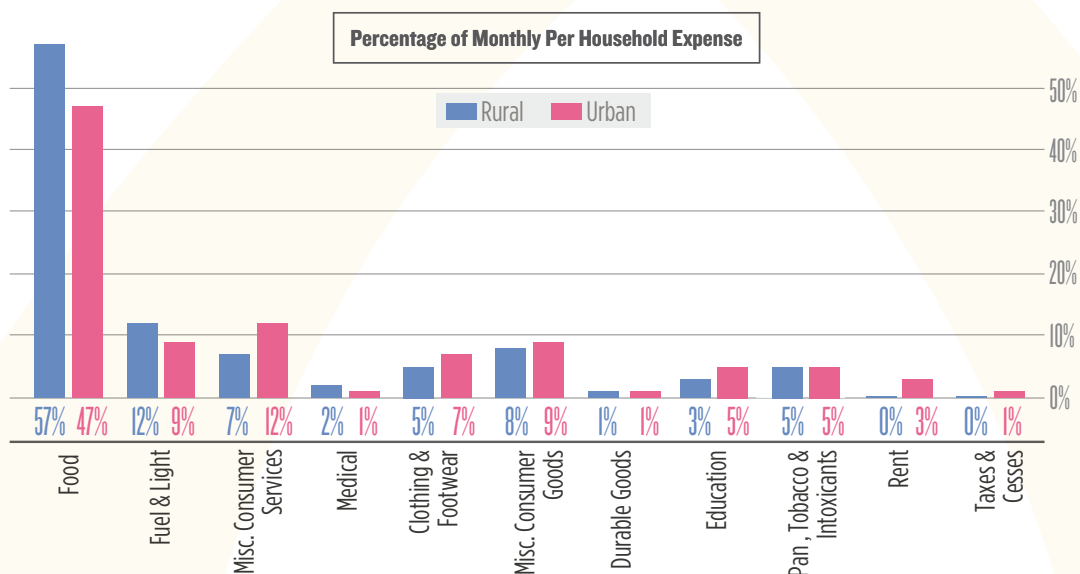


## Section 1: Mizoram overview (Households, Employment and Expenditure)

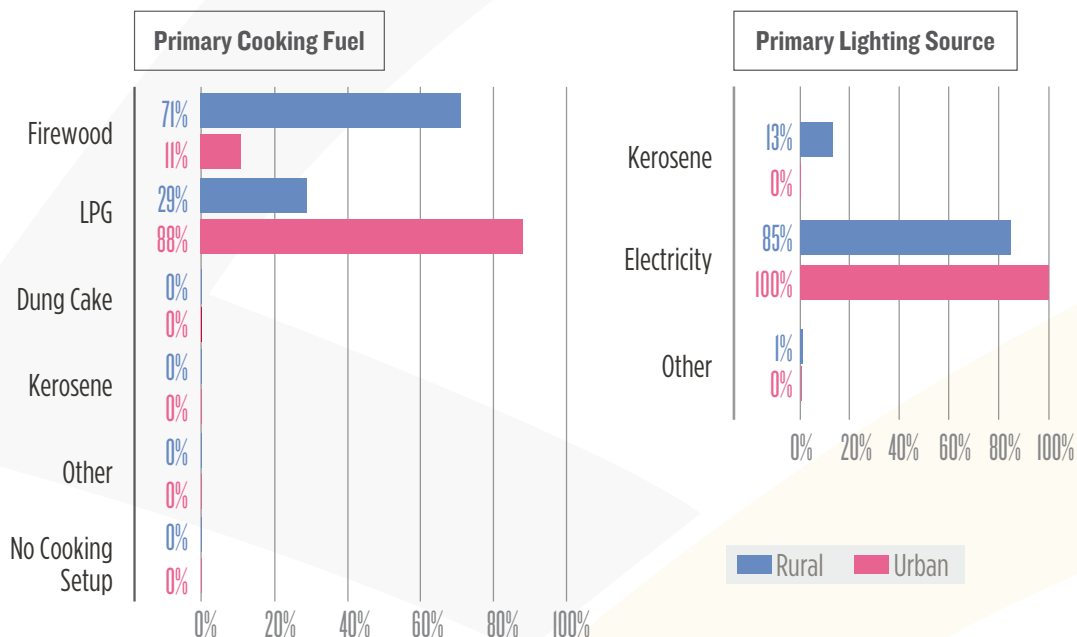
	Rural	Urban
No. of Households	83,451	57,065
% of India's Household Population	0.1%	
Average Household Size	5.13	4.89



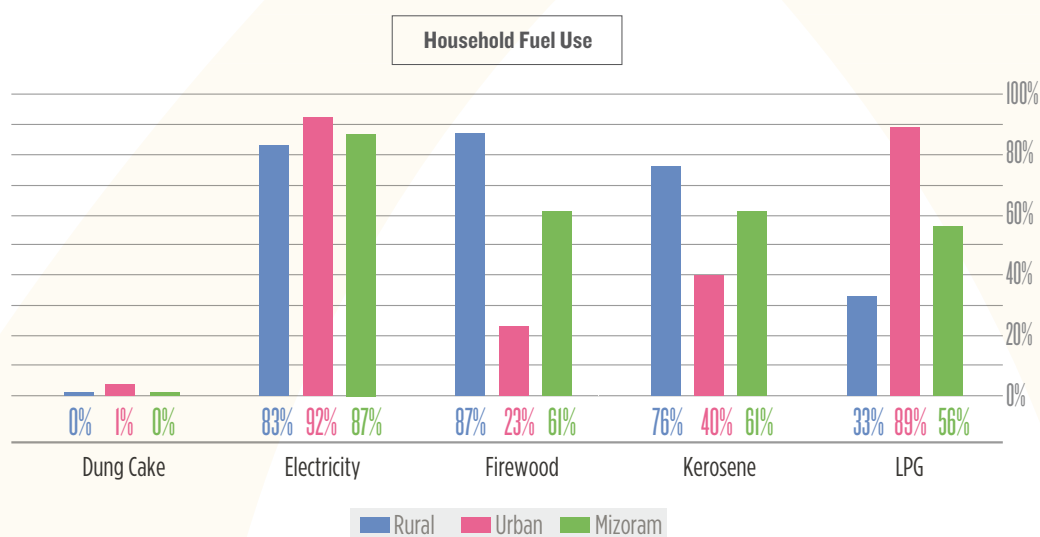
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	3,955.95	5,809.53	4,708.71

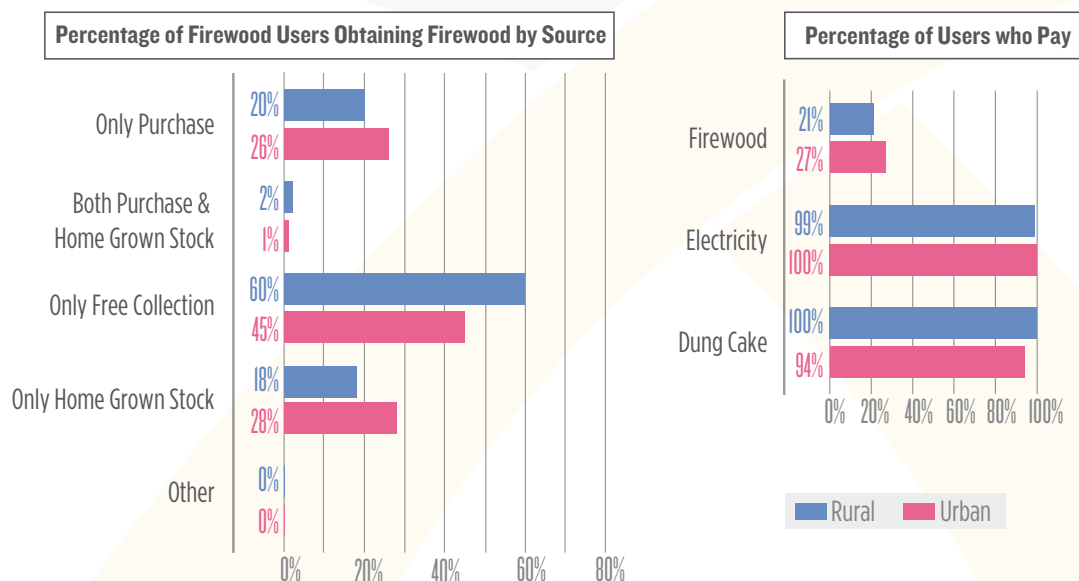
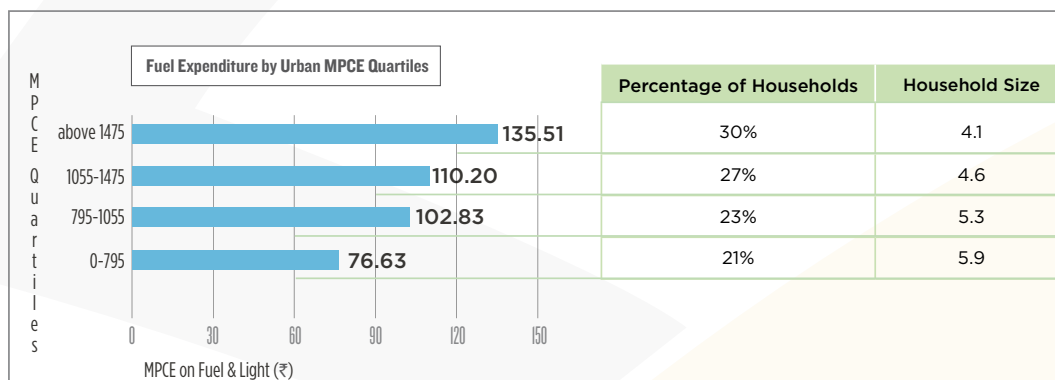
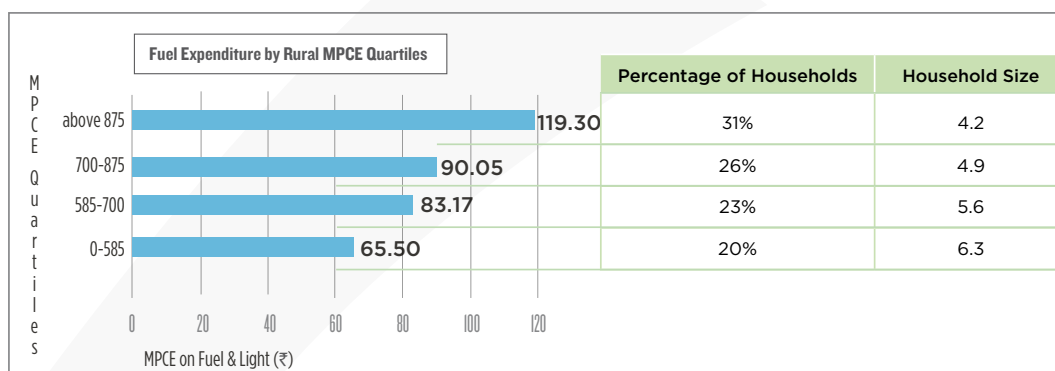


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	38,298,919	29,618,168	67,917,080
Average MPHE on Fuel & Light	458.94	519.02	483.34





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	38,298,919	21,512,429	29,618,168	26,904,284
Average MPHE on Fuel (₹)	458.94	257.78	519.02	471.47
Percentage of Market Value		56%		91%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Mizoram
Number of Households Using	72,360	13,258	85,619
Average Quantity/HH/Mo (kg.)	272.6	243.2	268.1
% of Users Paying	21%	27%	22%
Average MPHE (₹)	216.22	144.74	202.73

Monthly Consumption of Dung Cake	Rural	Urban	Mizoram
Number of Households Using	21	451	472
% of Users Paying	100%	94%	95%
Average MPHE (₹)	30.00	135.00	130.10

Monthly Consumption of Kerosene	Rural	Urban	Mizoram
Number of Households Using	63,072	22,810	85,882
Average Quantity/HH/Mo (litre)	4.0	2.9	3.7
Average MPHE (₹)	52.72	36.50	48.41

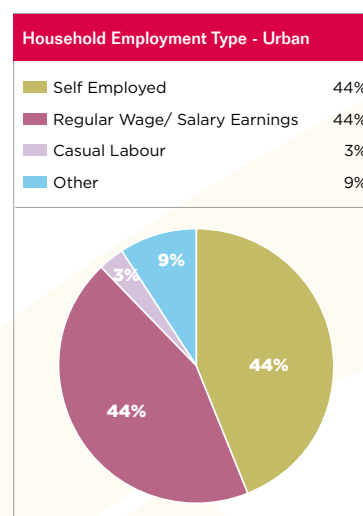
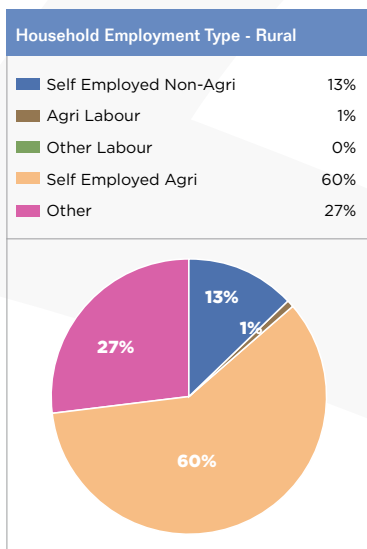
Monthly Consumption of LPG	Rural	Urban	Mizoram
Number of Households Using	27,193	51,009	78,202
Average Quantity/HH/Mo (kg.)	13.4	17.6	16.1
Average MPHE (₹)	284.76	319.28	307.28

Monthly Consumption of Electricity	Rural	Urban	Mizoram
Number of Households Using	69,301	52,374	121,675
Average Quantity/HH/Mo (std. units)	57.3	109.6	79.79
% of Users Paying	99%	100%	99%
Average MPHE (₹)	74.33	147.76	106.16

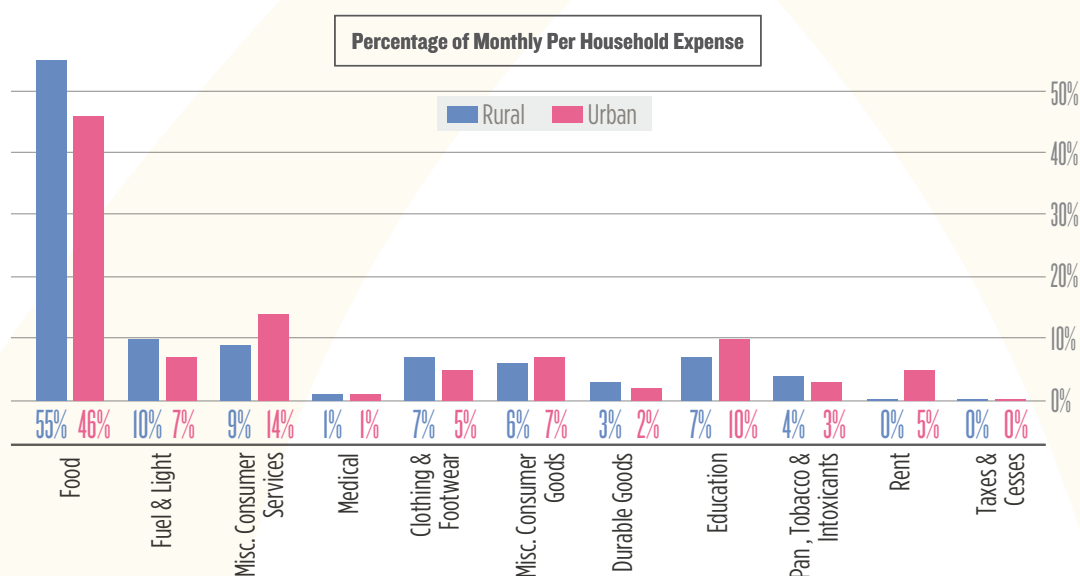


## Section 1: Nagaland overview (Households, Employment and Expenditure)

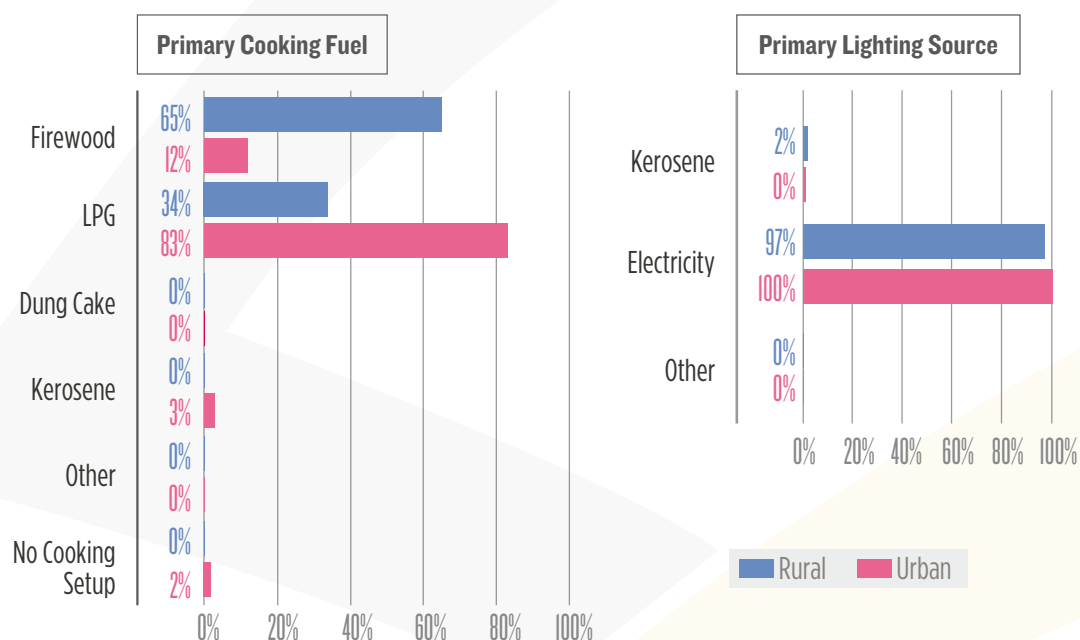
	Rural	Urban
No. of Households	106,134	48,799
% of India's Household Population	0.1%	
Average Household Size	5.39	4.88



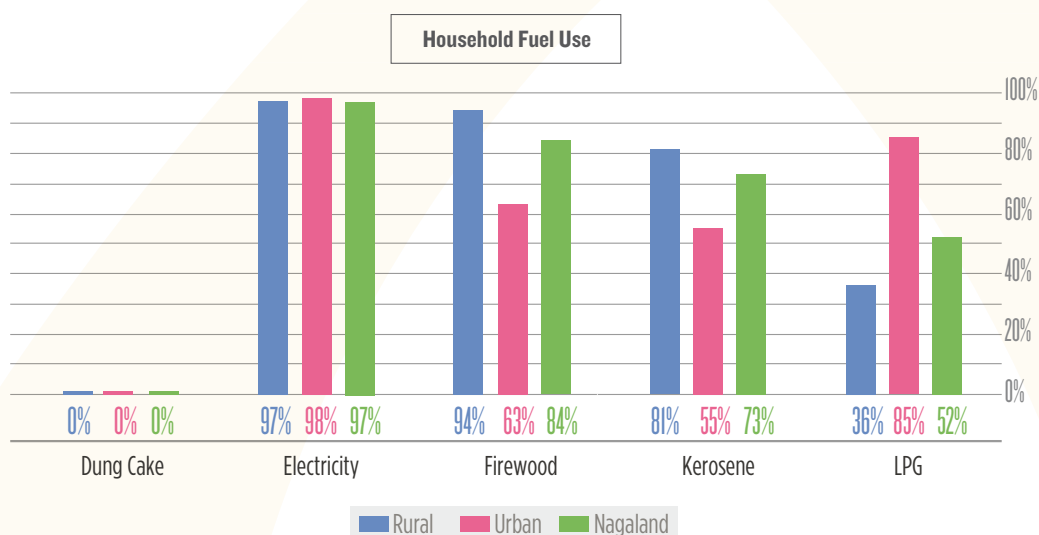
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	5,397.45	7,254.73	5,982.44

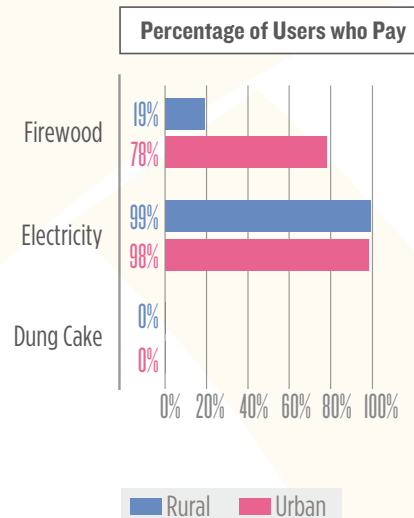
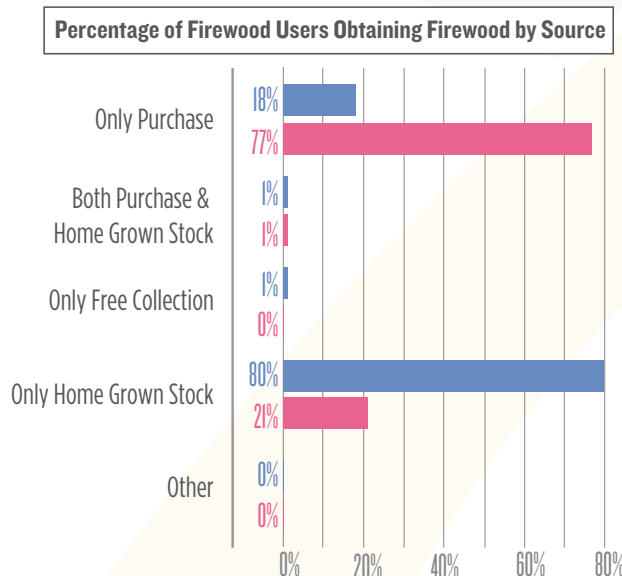
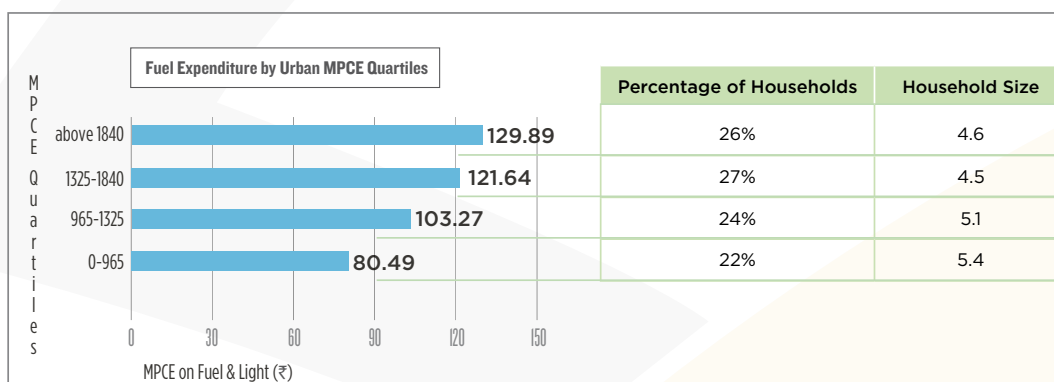
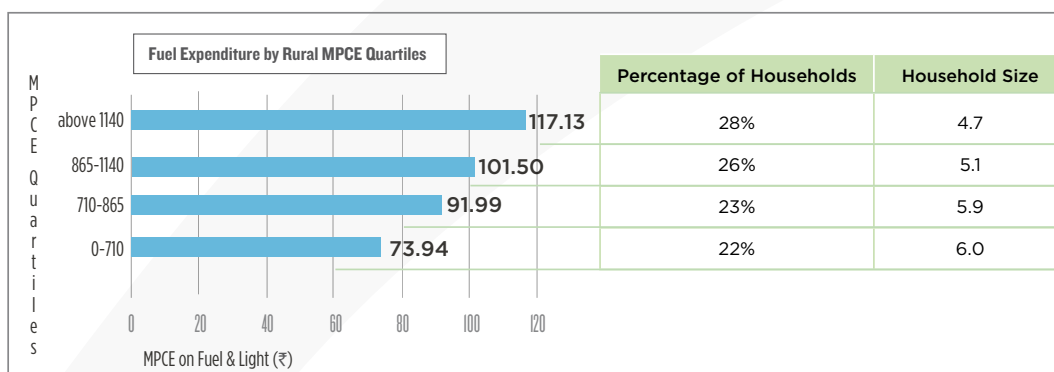


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	54,984,541	25,885,885	80,870,433
Average MPHE on Fuel & Light	518.07	530.46	521.97





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel	54,984,541	27,516,278	25,885,885	23,648,106
Average MPHE on Fuel	518.07	259.26	530.46	484.60
Percentage of Market Value		50%		91%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Nagaland
Number of Households Using	99,976	30,821	130,797
Average Quantity/HH/Mo (kg.)	459.6	218.4	402.8
% of Users Paying	19%	78%	33%
Average MPHE (₹)	275.47	188.07	226.57

Monthly Consumption of Dung Cake	Rural	Urban	Nagaland
Number of Households Using	0	0	0
% of Users Paying	-	-	-
Average MPHE (₹)	-	-	-

Monthly Consumption of Kerosene	Rural	Urban	Nagaland
Number of Households Using	85,910	26,695	112,604
Average Quantity/HH/Mo (litre)	1.4	1.8	1.5
Average MPHE (₹)	27.34	33.02	28.69

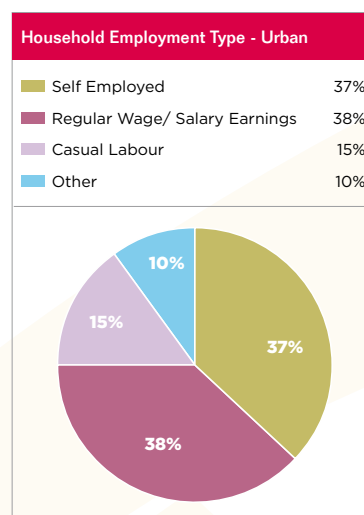
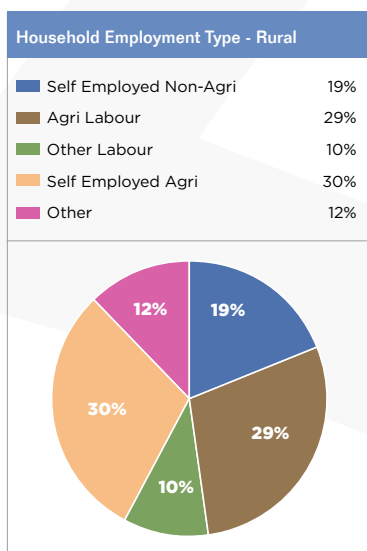
Monthly Consumption of LPG	Rural	Urban	Nagaland
Number of Households Using	38,396	41,504	79,900
Average Quantity/HH/Mo (kg.)	13.2	14.6	13.9
Average MPHE (₹)	290.35	312.52	301.87

Monthly Consumption of Electricity	Rural	Urban	Nagaland
Number of Households Using	102,791	47,742	150,533
Average Quantity/HH/Mo (std. units)	30.6	40.6	33.77
% of Users Paying	99%	98%	98%
Average MPHE (₹)	69.91	98.79	79.04

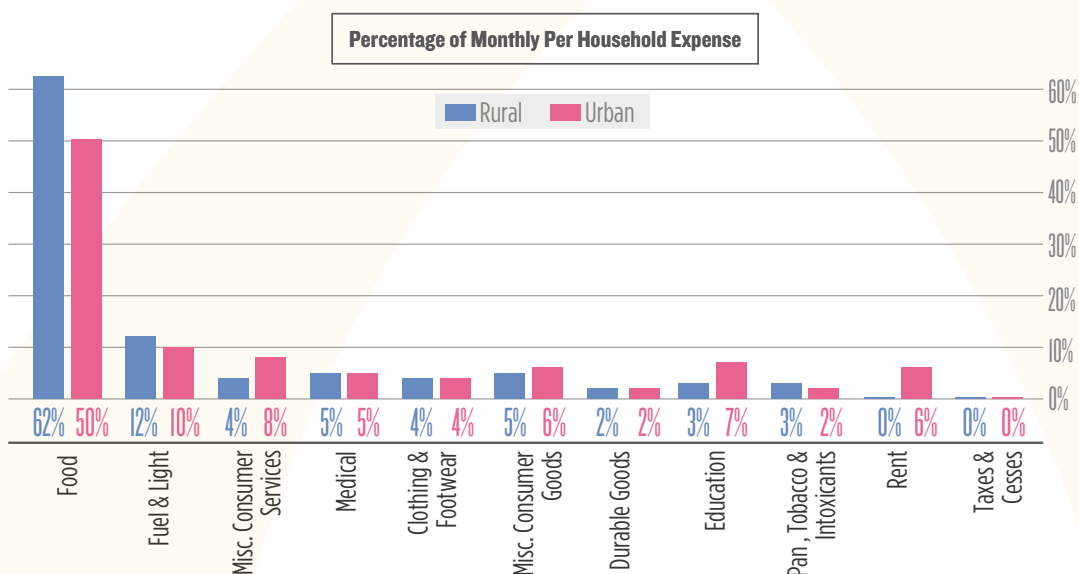


## Section 1: Orissa overview (Households, Employment and Expenditure)

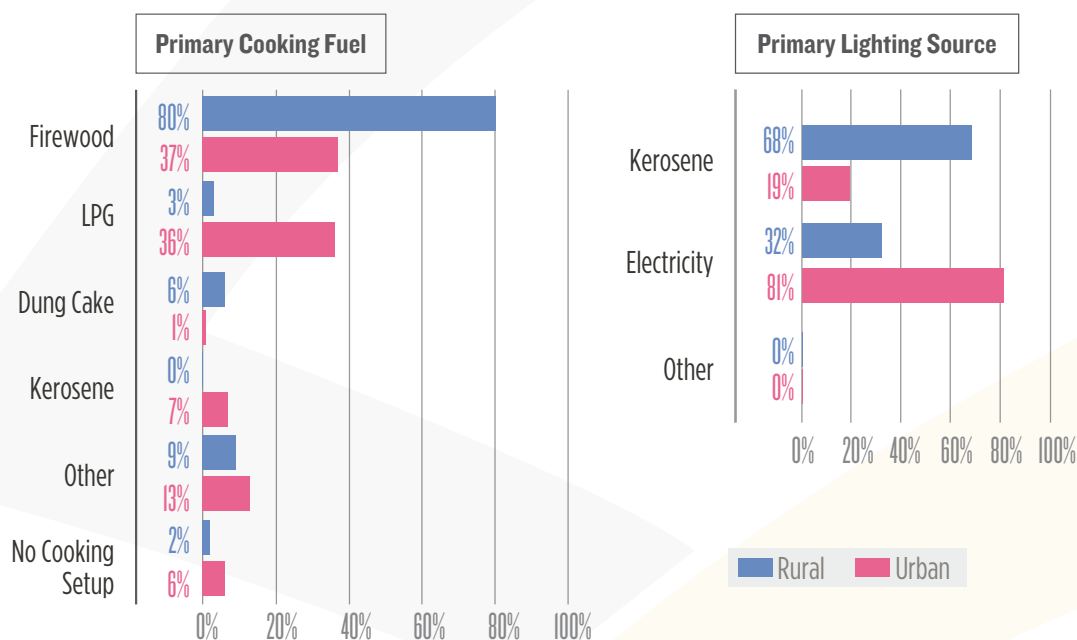
	Rural	Urban
No. of Households	6,782,067	1,148,569
% of India's Household Population	3.8%	
Average Household Size	4.73	4.43



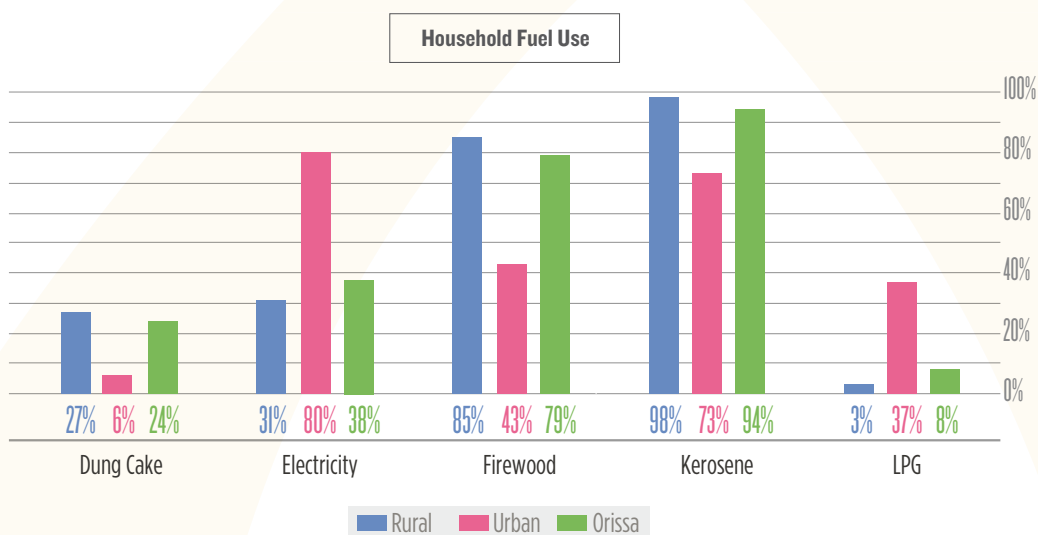
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	1,886.44	3,346.33	2,097.87

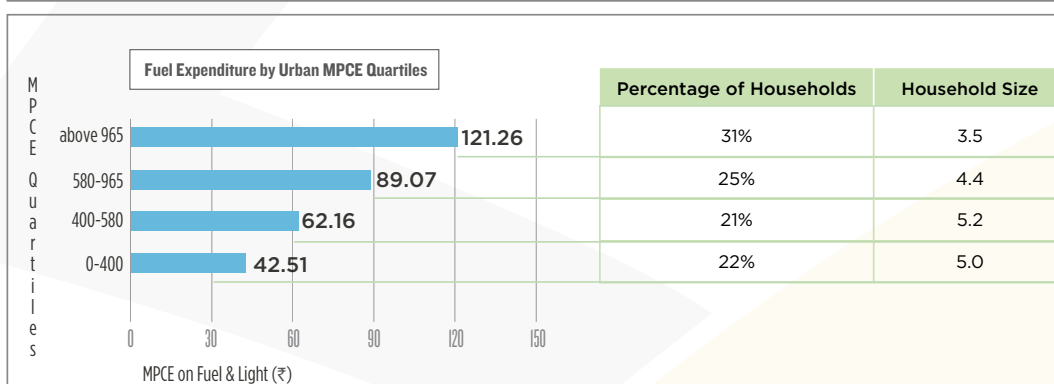
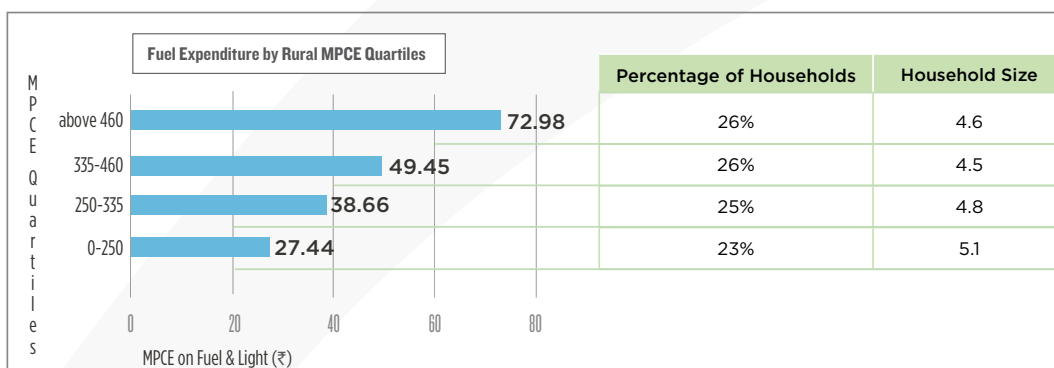


## Section 2: Energy Use (Consumption and Expenditure)

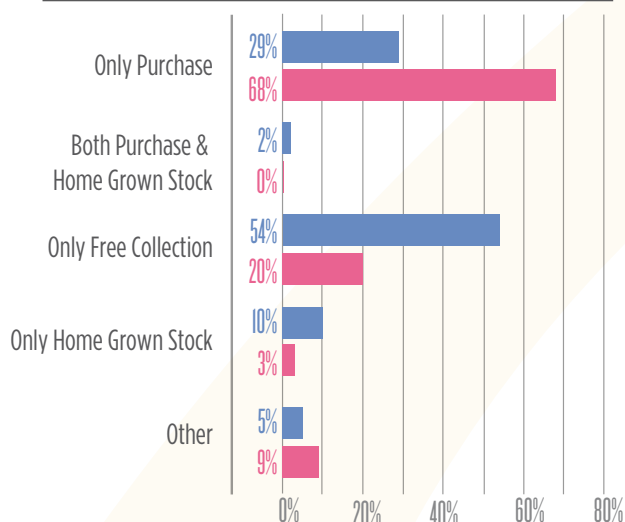


	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	1,513,254,274	400,140,736	1,913,394,731
Average MPHE on Fuel & Light	223.13	348.38	241.27

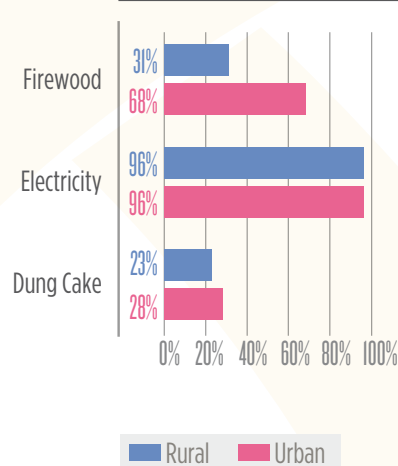




**Percentage of Firewood Users Obtaining Firewood by Source**



**Percentage of Users who Pay**



Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	2,528,500,585	1,176,871,087	1,234,005,562	1,148,998,697
Average MPHE on Fuel (₹)	321.31	149.55	478.12	445.19
Percentage of Market Value		47%		93%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Orissa
Number of Households Using	5,784,222	490,127	6,274,349
Average Quantity/HH/Mo (kg.)	146.4	125.3	144.8
% of Users Paying	31%	68%	34%
Average MPHE (₹)	138.94	152.88	141.10

Monthly Consumption of Dung Cake	Rural	Urban	Orissa
Number of Households Using	1,810,460	73,848	1,884,308
% of Users Paying	23%	28%	23%
Average MPHE (₹)	43.32	55.77	43.92

Monthly Consumption of Kerosene	Rural	Urban	Orissa
Number of Households Using	6,627,736	840,981	7,468,717
Average Quantity/HH/Mo (litre)	2.6	3.1	2.6
Average MPHE (₹)	30.70	42.97	32.08

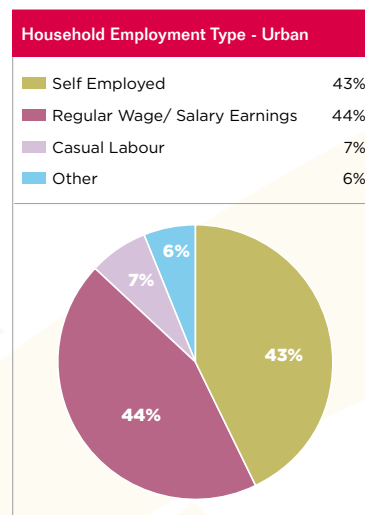
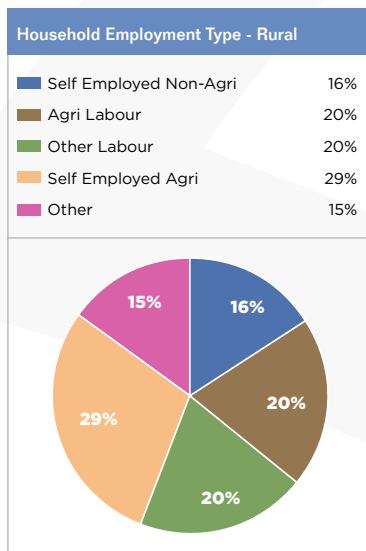
Monthly Consumption of LPG	Rural	Urban	Orissa
Number of Households Using	231,168	419,802	650,970
Average Quantity/HH/Mo (kg.)	12.5	12.9	12.7
Average MPHE (₹)	266.27	278.12	273.91

Monthly Consumption of Electricity	Rural	Urban	Orissa
Number of Households Using	2,115,930	919,519	3,035,449
Average Quantity/HH/Mo (std. units)	94.7	110.8	99.58
% of Users Paying	96%	96%	96%
Average MPHE (₹)	136.48	166.74	145.67



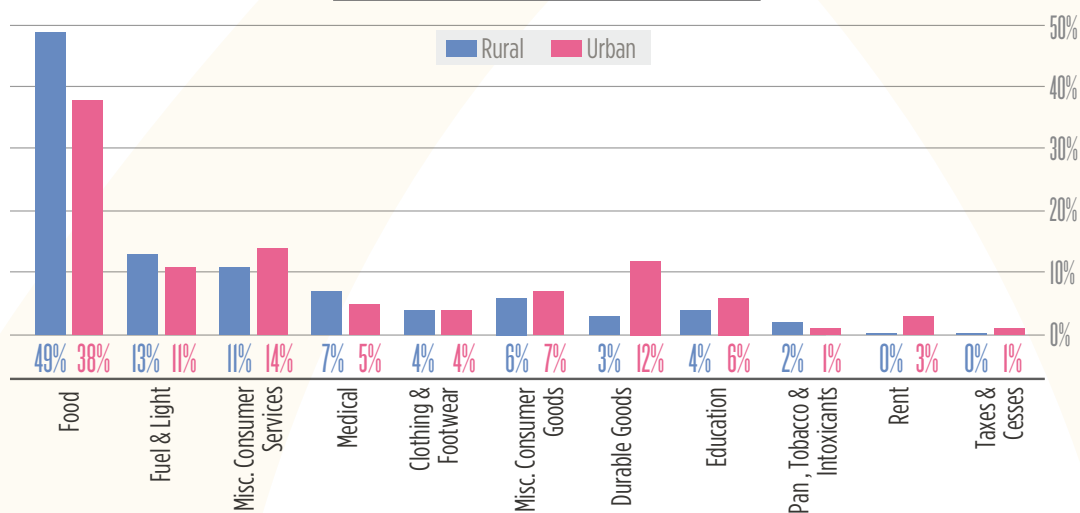
## Section 1: Punjab overview (Households, Employment and Expenditure)

	Rural	Urban
No. of Households	3,093,586	1,707,770
% of India's Household Population	2.3%	
Average Household Size	5.08	4.36

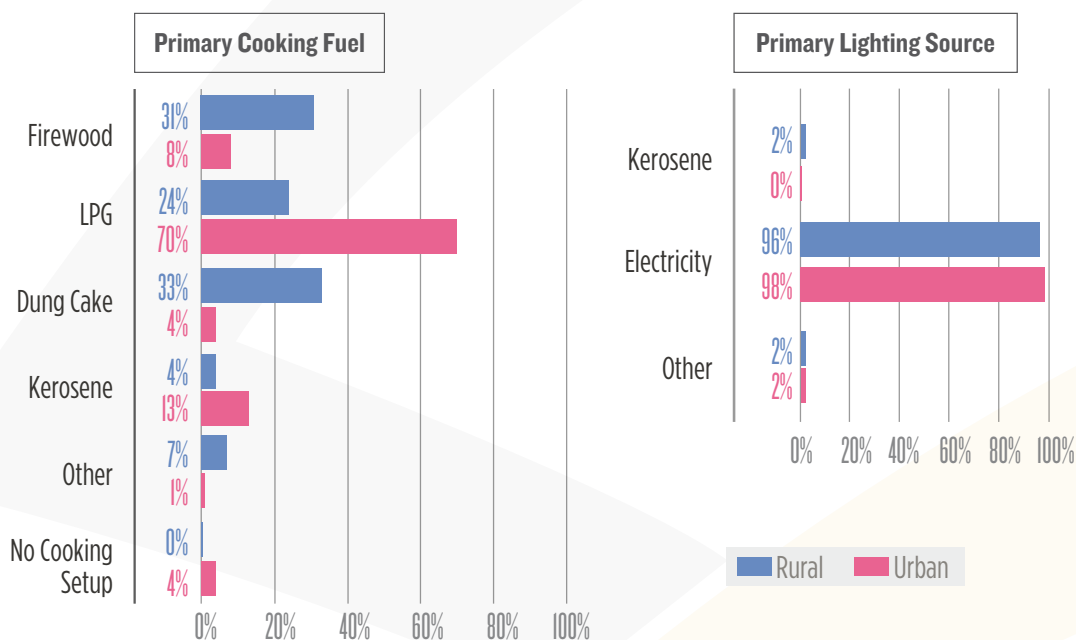


	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	4,289.61	5,769.11	4,815.84

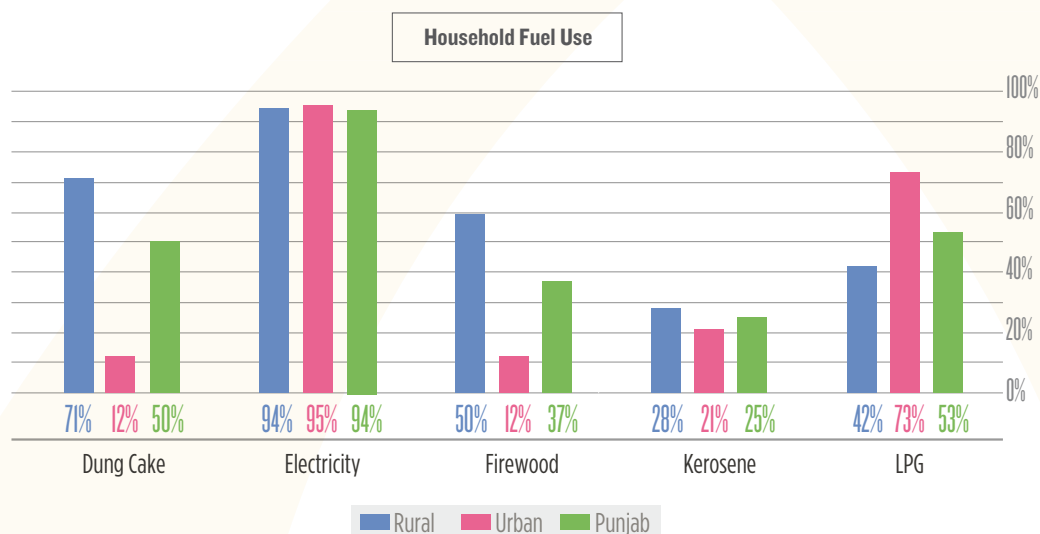
### Percentage of Monthly Per Household Expense

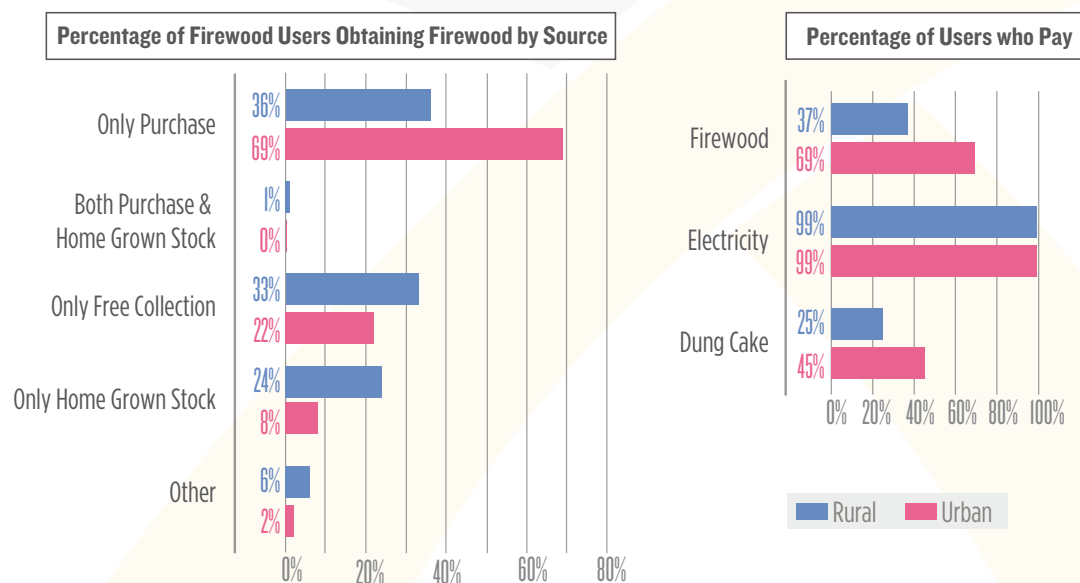
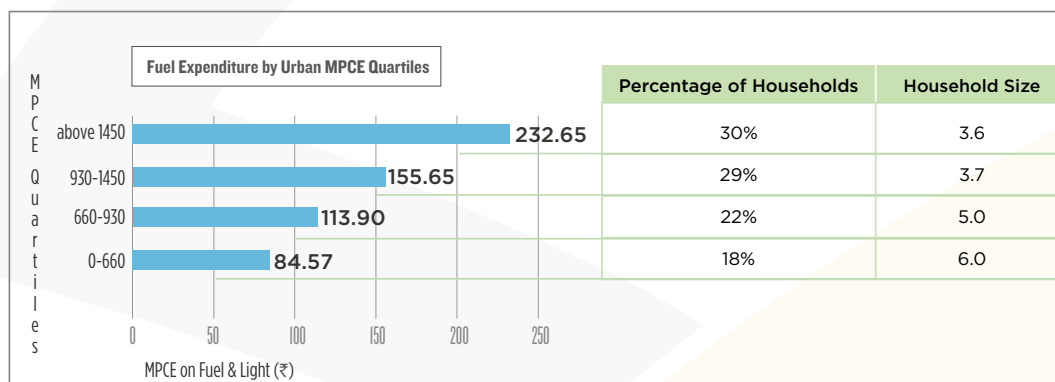
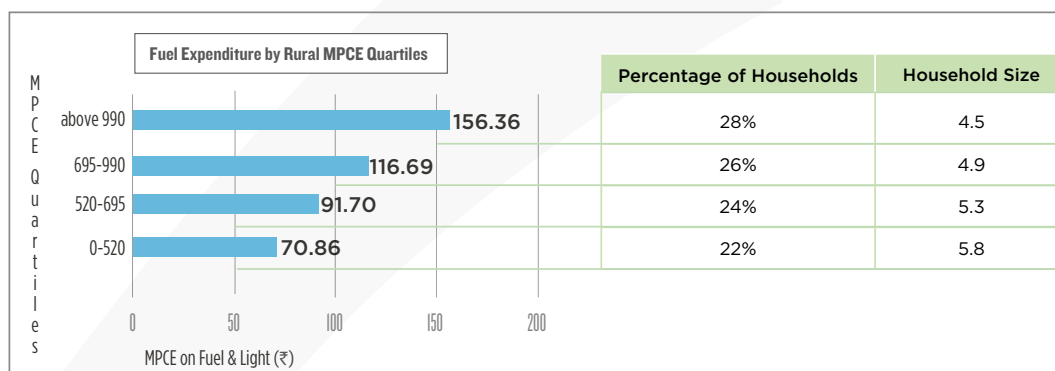


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	1,710,282,296	1,091,951,765	2,802,233,828
Average MPHE on Fuel & Light	552.85	639.40	583.63





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	1,710,282,296	1,242,936,976	1,091,951,765	1,056,641,867
Average MPHE on Fuel (₹)	552.85	401.78	639.40	618.73
Percentage of Market Value		73%		97%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Punjab
Number of Households Using	1,559,050	205,022	1,764,072
Average Quantity/HH/Mo (kg.)	152.7	215.6	160.0
% of Users Paying	37%	69%	40%
Average MPHE (₹)	155.70	181.64	160.86

Monthly Consumption of Dung Cake	Rural	Urban	Punjab
Number of Households Using	2,205,909	199,073	2,404,982
% of Users Paying	25%	45%	27%
Average MPHE (₹)	139.51	130.00	138.19

Monthly Consumption of Kerosene	Rural	Urban	Punjab
Number of Households Using	860,702	357,607	1,218,309
Average Quantity/HH/Mo (litre)	4.5	7.5	5.4
Average MPHE (₹)	59.41	129.94	80.11

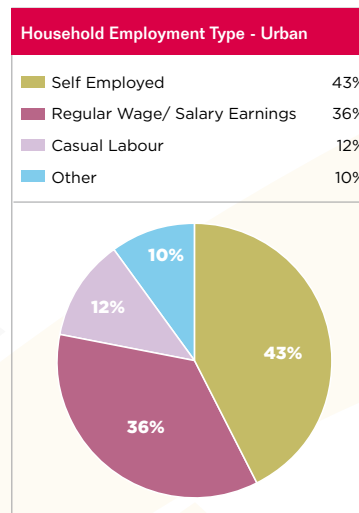
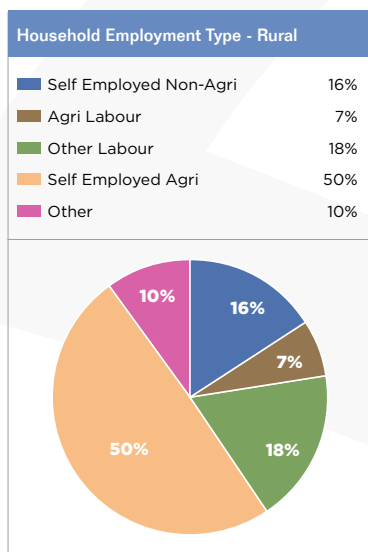
Monthly Consumption of LPG	Rural	Urban	Punjab
Number of Households Using	1,314,254	1,245,962	2,560,216
Average Quantity/HH/Mo (kg.)	10.0	13.3	11.6
Average MPHE (₹)	200.72	266.87	232.91

Monthly Consumption of Electricity	Rural	Urban	Punjab
Number of Households Using	2,905,094	1,628,968	4,534,062
Average Quantity/HH/Mo (std. units)	88.9	136.5	106.03
% of Users Paying	99%	99%	99%
Average MPHE (₹)	230.02	379.20	283.69

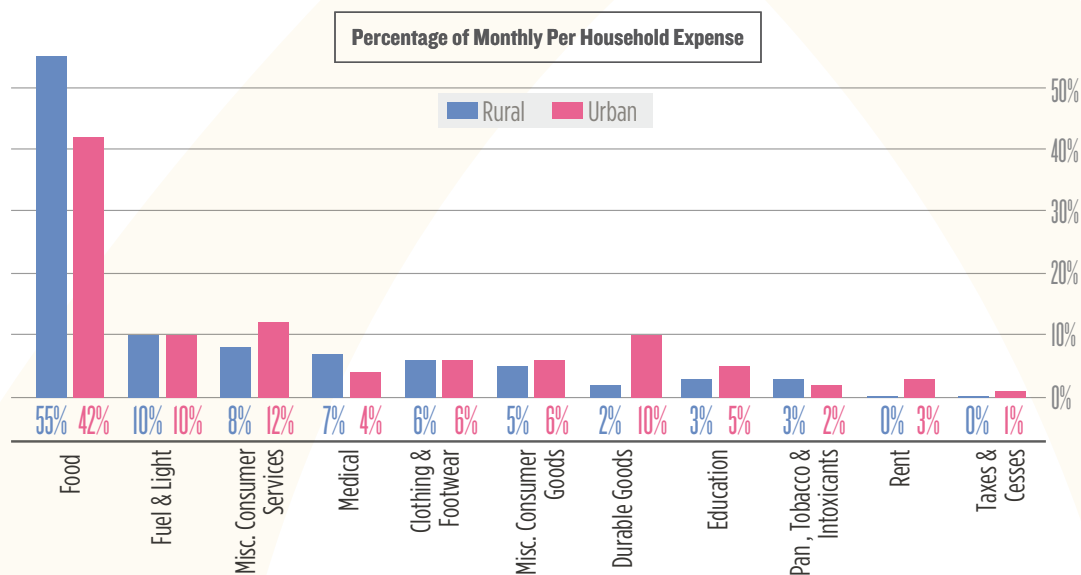


## Section 1: Rajasthan overview (Households, Employment and Expenditure)

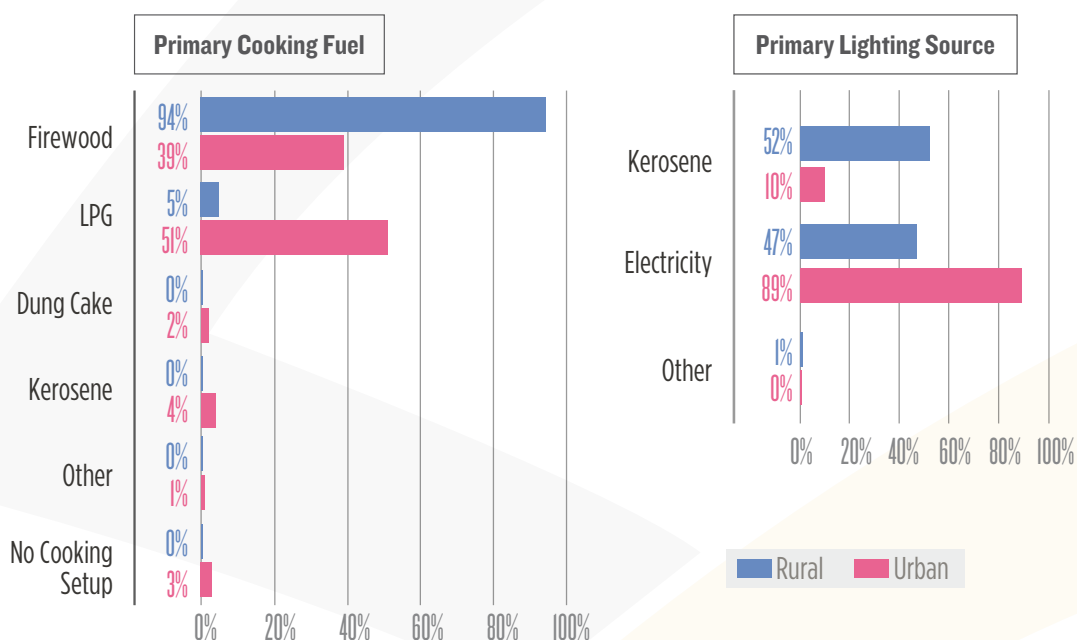
	Rural	Urban
No. of Households	7,869,422	2,580,937
% of India's Household Population	5.0%	
Average Household Size	5.46	4.77



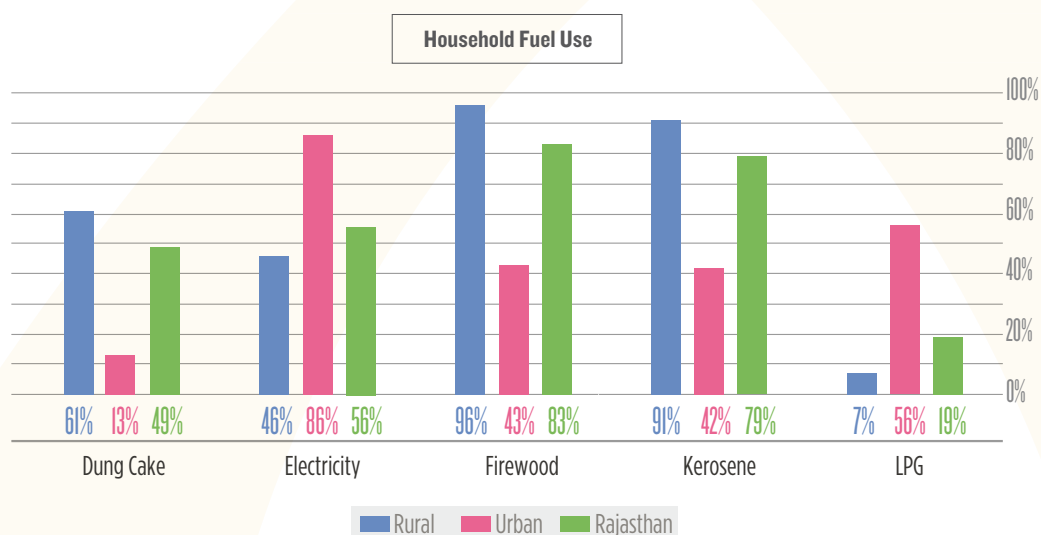
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	3,215.24	4,583.09	3,553.06

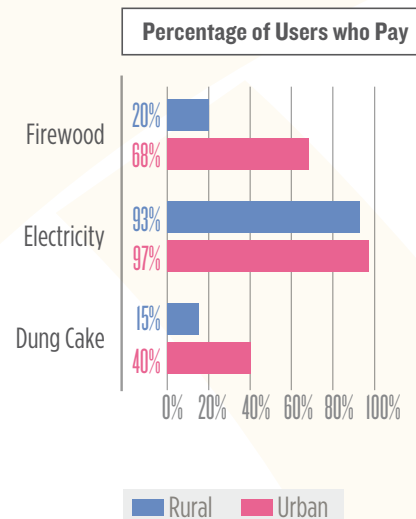
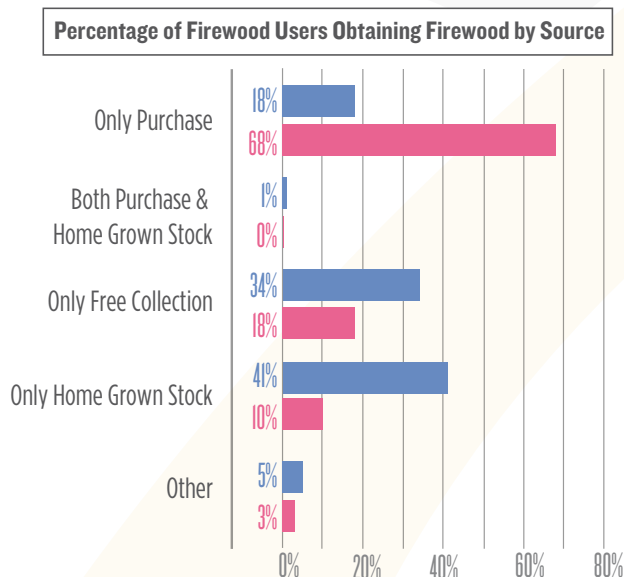
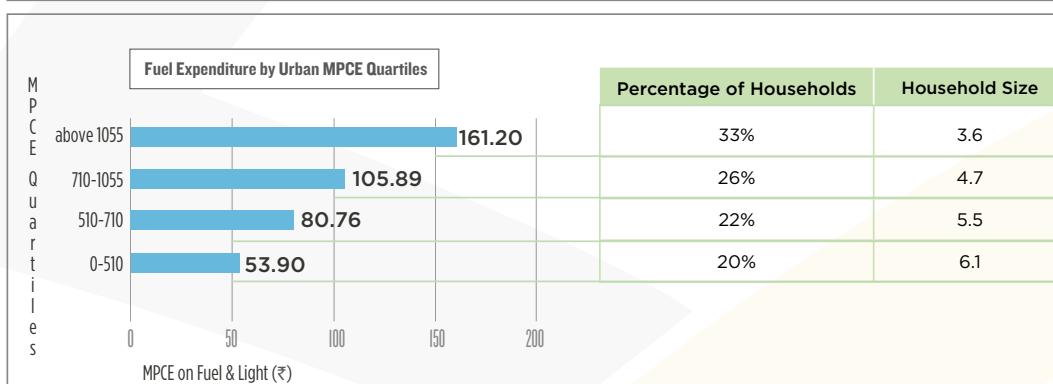
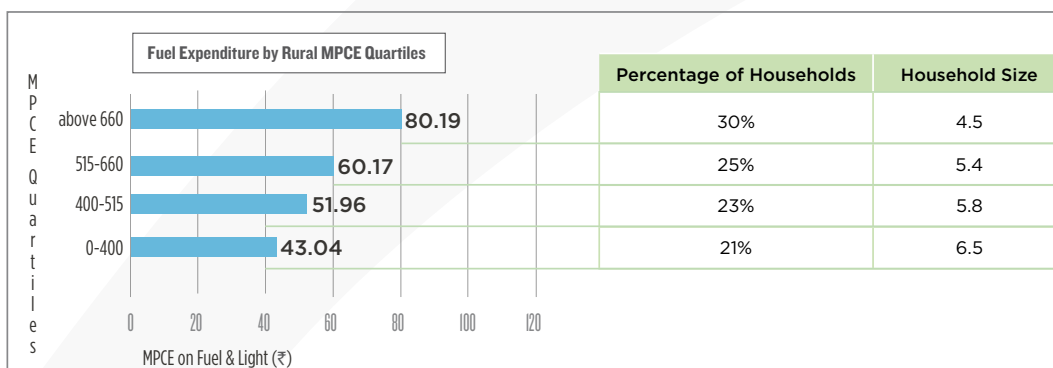


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	2,528,500,585	1,234,005,562	3,762,505,443
Average MPHE on Fuel & Light	321.31	478.12	360.04





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	2,528,500,585	1,176,871,087	1,234,005,562	1,148,998,697
Average MPHE on Fuel (₹)	321.31	149.55	478.12	445.19
Percentage of Market Value		47%		93%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Rajasthan
Number of Households Using	7,566,295	1,105,255	8,671,550
Average Quantity/HH/Mo (kg.)	175.8	116.9	168.3
% of Users Paying	20%	68%	26%
Average MPHE (₹)	165.59	165.54	165.57

Monthly Consumption of Dung Cake	Rural	Urban	Rajasthan
Number of Households Using	4,821,429	347,332	5,168,761
% of Users Paying	15%	40%	17%
Average MPHE (₹)	41.08	59.30	43.95

Monthly Consumption of Kerosene	Rural	Urban	Rajasthan
Number of Households Using	7,137,795	1,088,267	8,226,062
Average Quantity/HH/Mo (litre)	3.2	3.6	3.2
Average MPHE (₹)	31.77	39.00	32.73

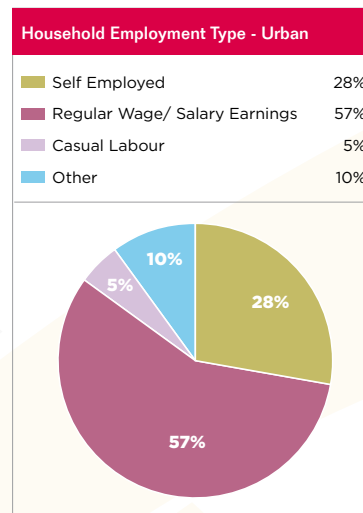
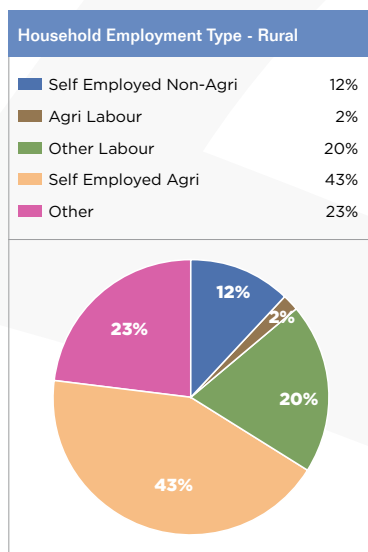
Monthly Consumption of LPG	Rural	Urban	Rajasthan
Number of Households Using	552,499	1,447,853	2,000,352
Average Quantity/HH/Mo (kg.)	8.9	10.7	10.2
Average MPHE (₹)	188.06	221.71	212.42

Monthly Consumption of Electricity	Rural	Urban	Rajasthan
Number of Households Using	3,655,487	2,227,702	5,883,189
Average Quantity/HH/Mo (std. units)	48.0	88.5	63.31
% of Users Paying	93%	97%	94%
Average MPHE (₹)	146.90	287.23	201.66

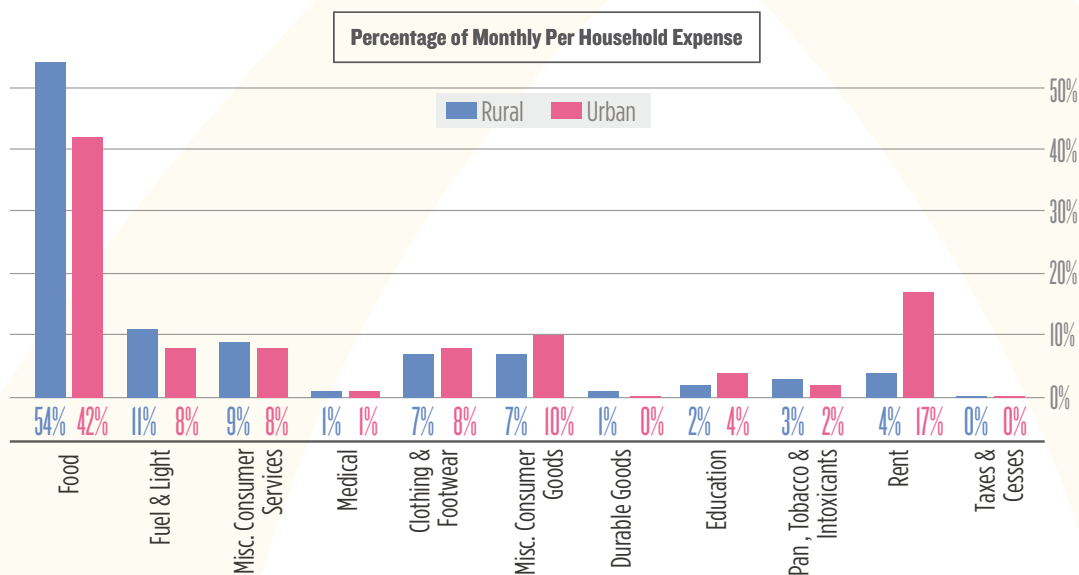


## Section 1: Sikkim overview (Households, Employment and Expenditure)

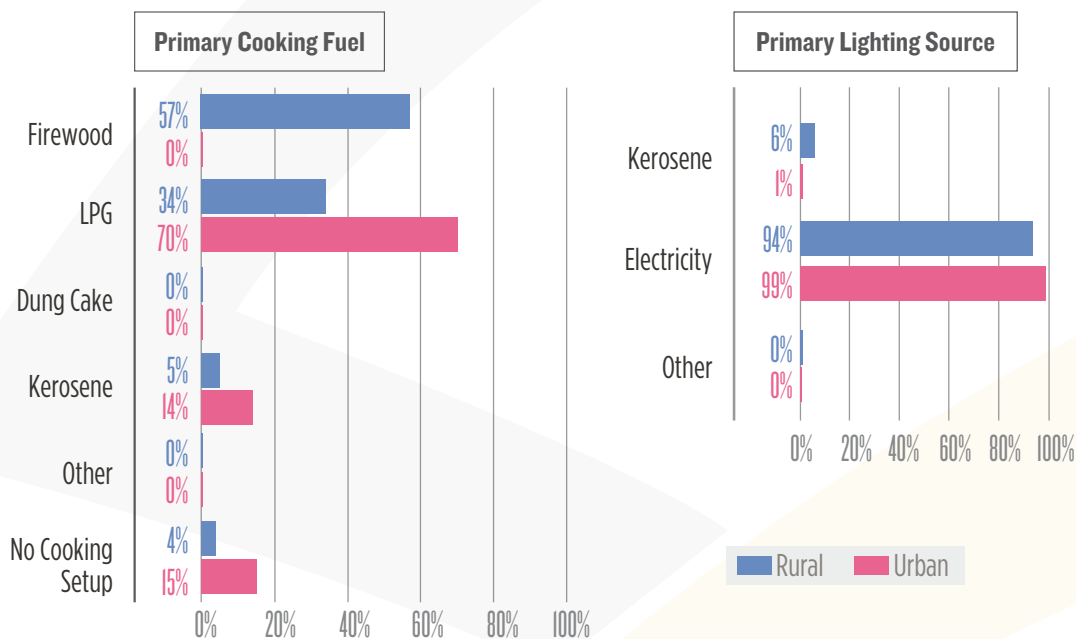
	Rural	Urban
No. of Households	102,640	16,572
% of India's Household Population	0.1%	
Average Household Size	4.35	3.43



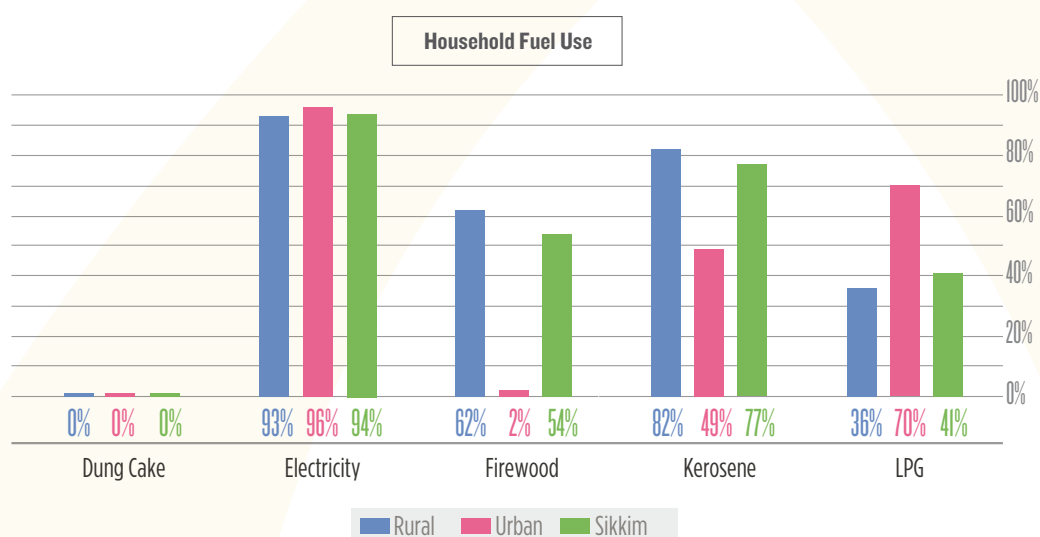
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	2,982.57	3,767.85	3,091.73

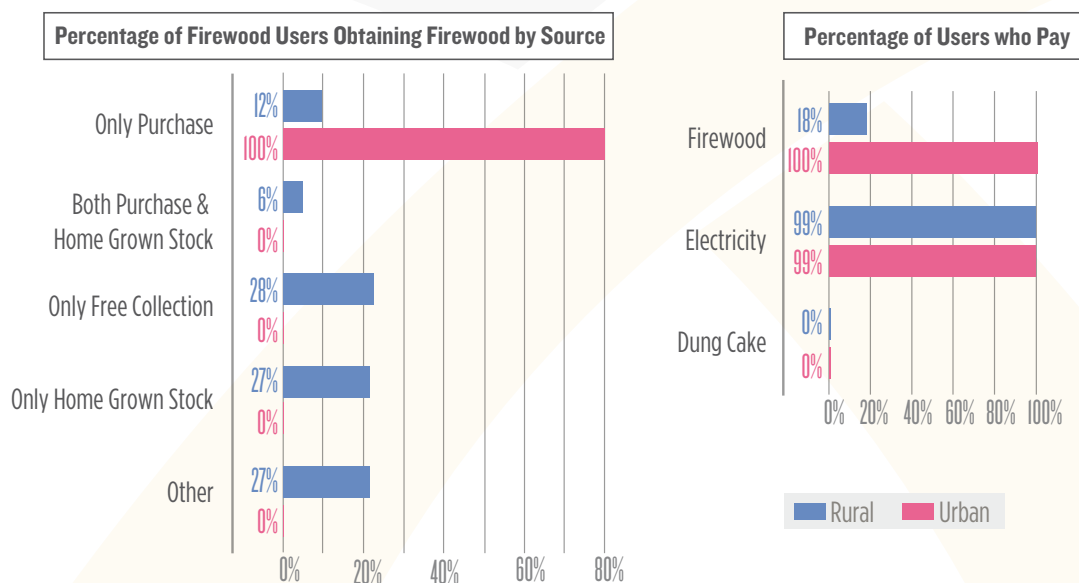
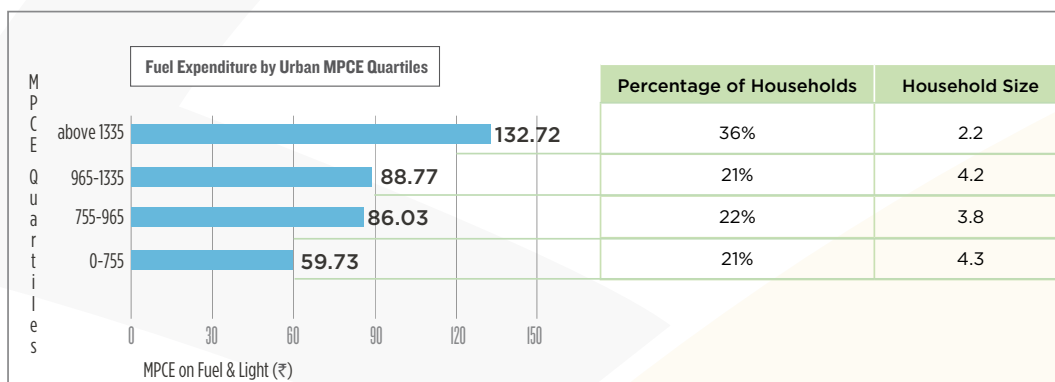
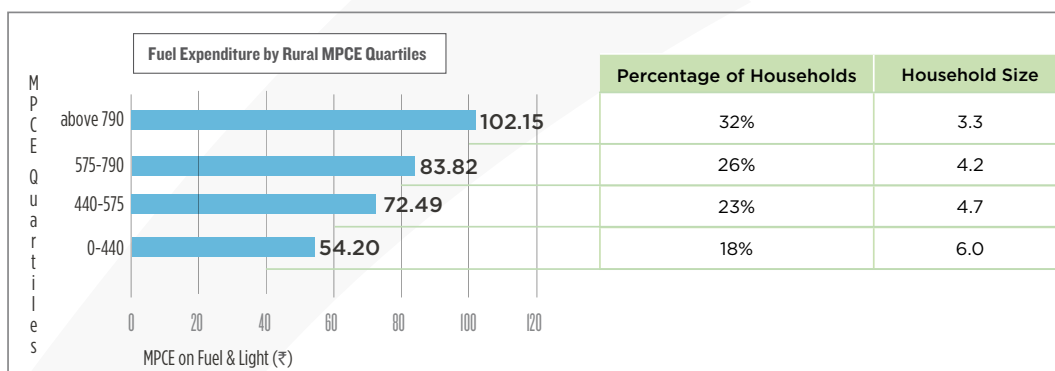


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	34,814,794	5,153,971	39,968,765
Average MPHE on Fuel & Light	339.19	311.01	335.28





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	34,814,794	20,906,513	5,153,971	5,078,552
Average MPHE on Fuel (₹)	339.19	203.69	311.01	306.46
Percentage of Market Value		60%		99%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Sikkim
Number of Households Using	64,057	344	64,401
Average Quantity/HH/Mo (kg.)	186.9	52.0	186.2
% of Users Paying	18%	100%	19%
Average MPHE (₹)	200.81	59.44	196.73

Monthly Consumption of Dung Cake	Rural	Urban	Sikkim
Number of Households Using	0	0	0
% of Users Paying	-	-	-
Average MPHE (₹)	-	-	-

Monthly Consumption of Kerosene	Rural	Urban	Sikkim
Number of Households Using	83,748	8,126	91,874
Average Quantity/HH/Mo (litre)	3.2	5.8	3.4
Average MPHE (₹)	44.81	83.05	48.19

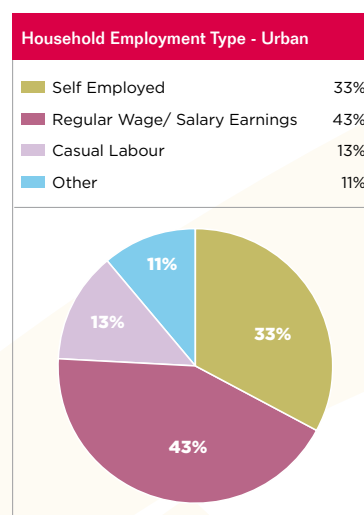
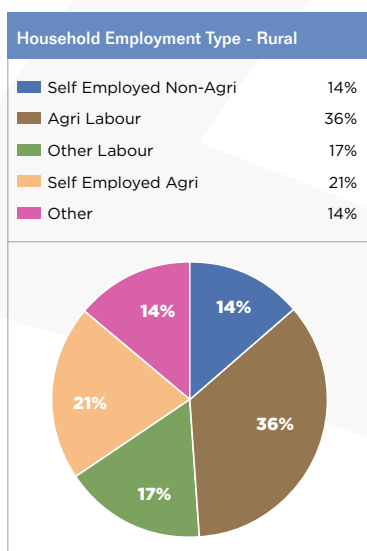
Monthly Consumption of LPG	Rural	Urban	Sikkim
Number of Households Using	37,018	11,592	48,610
Average Quantity/HH/Mo (kg.)	12.4	13.5	12.7
Average MPHE (₹)	262.85	281.28	267.24

Monthly Consumption of Electricity	Rural	Urban	Sikkim
Number of Households Using	95,965	15,914	111,879
Average Quantity/HH/Mo (std. units)	31.2	32.2	31.32
% of Users Paying	99%	99%	99%
Average MPHE (₹)	43.38	64.48	46.36

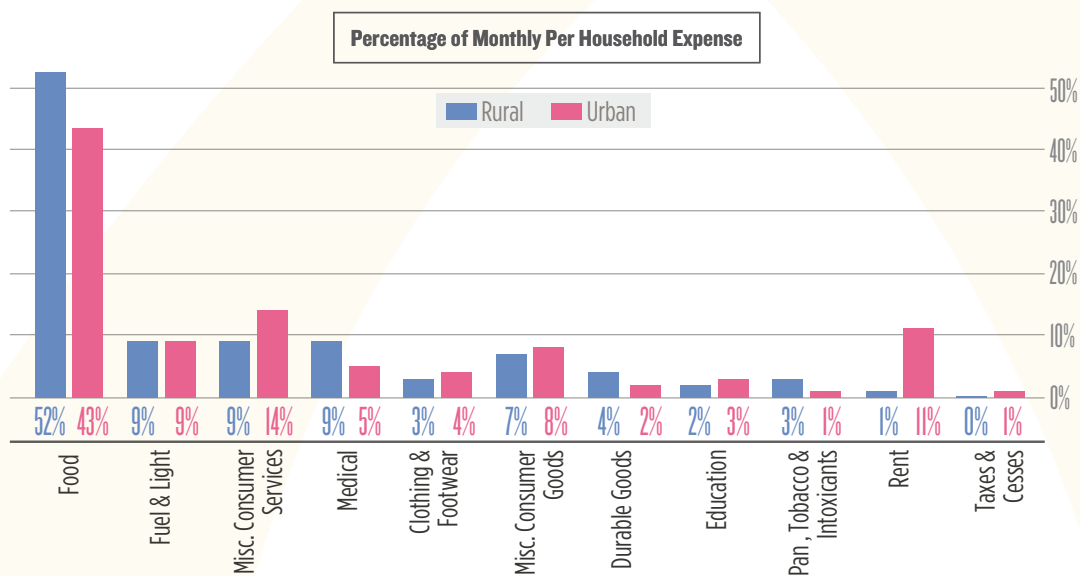


## Section 1: Tamil Nadu overview (Households, Employment and Expenditure)

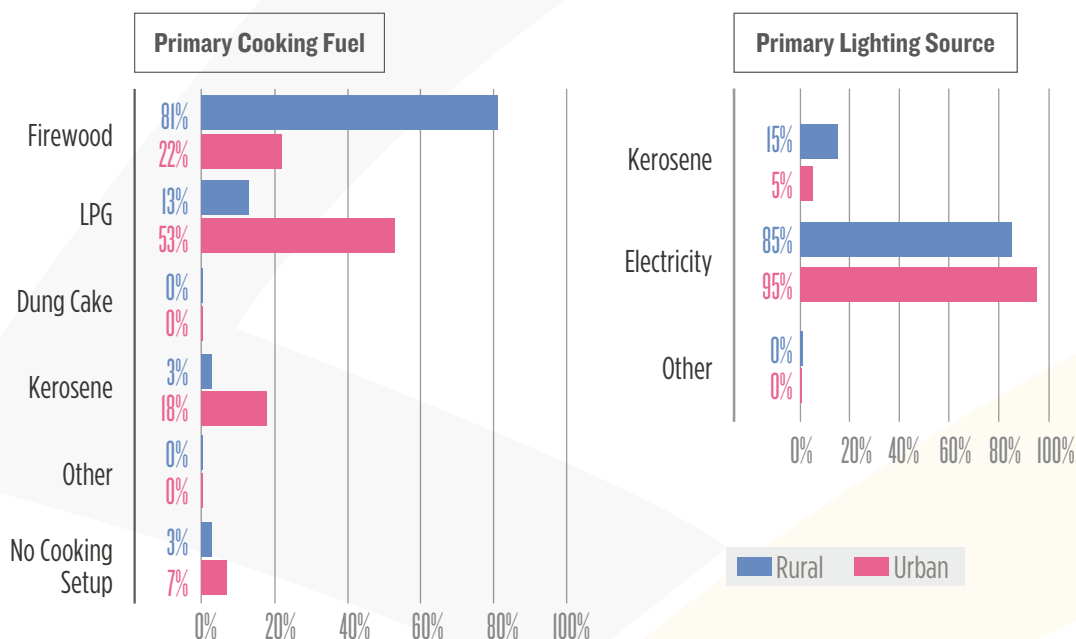
	Rural	Urban
No. of Households	9,160,899	5,916,674
% of India's Household Population	7.3%	
Average Household Size	3.77	3.64



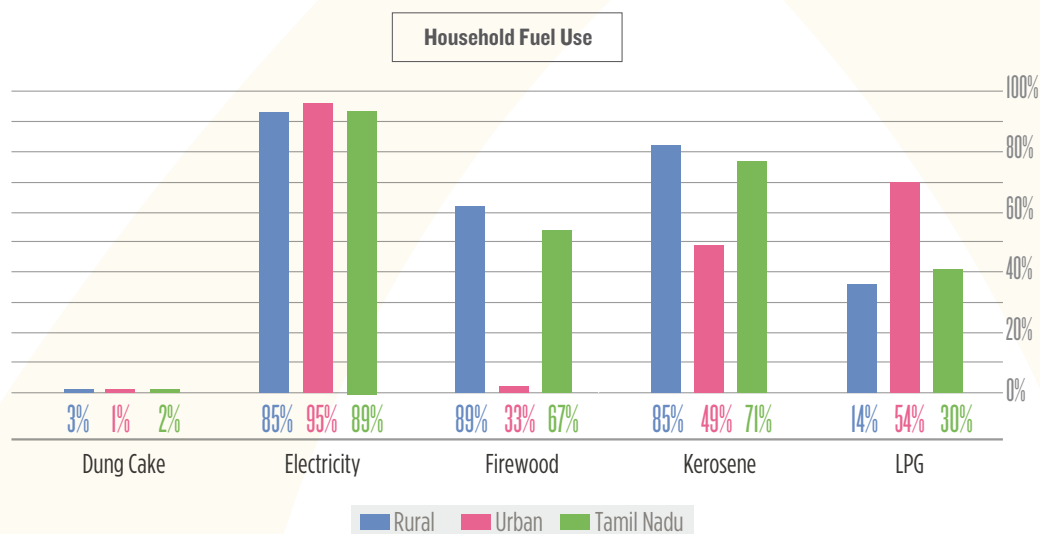
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	2,266.61	3,930.78	2,919.66

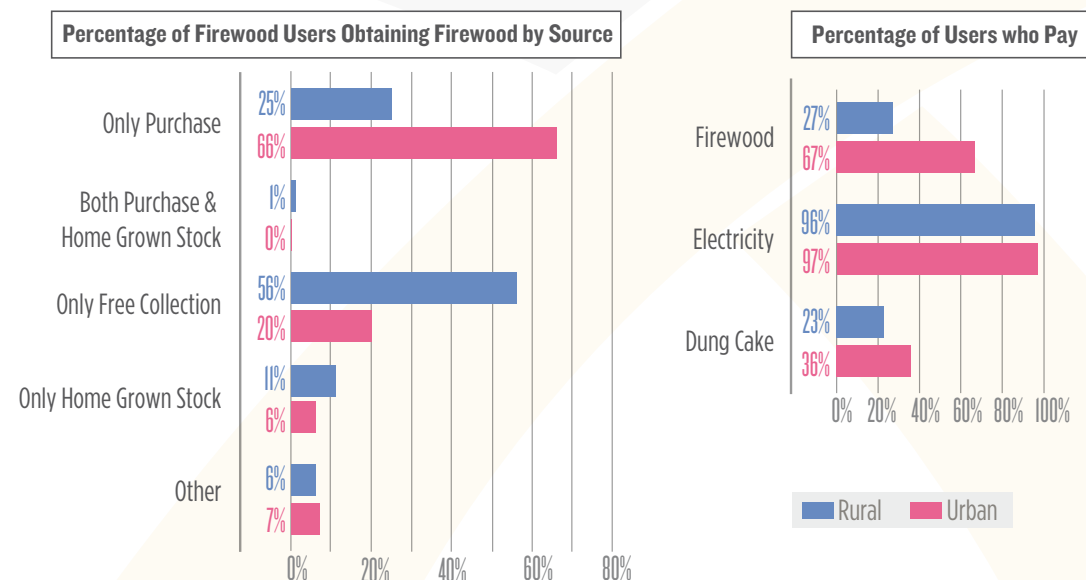
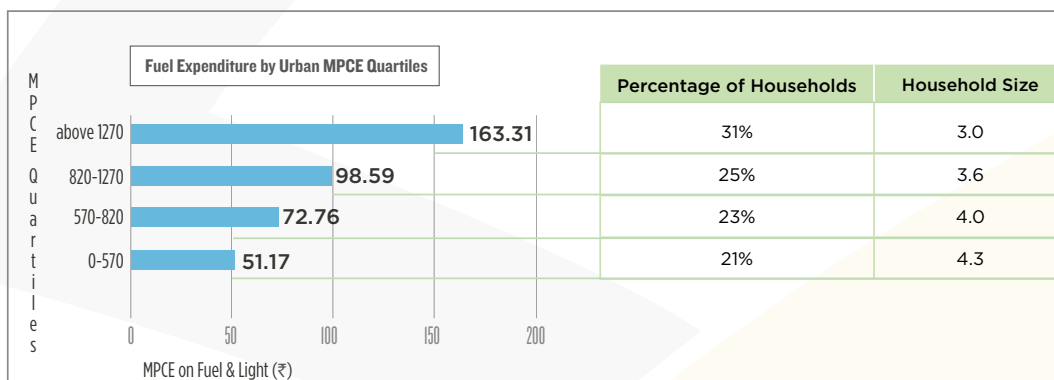
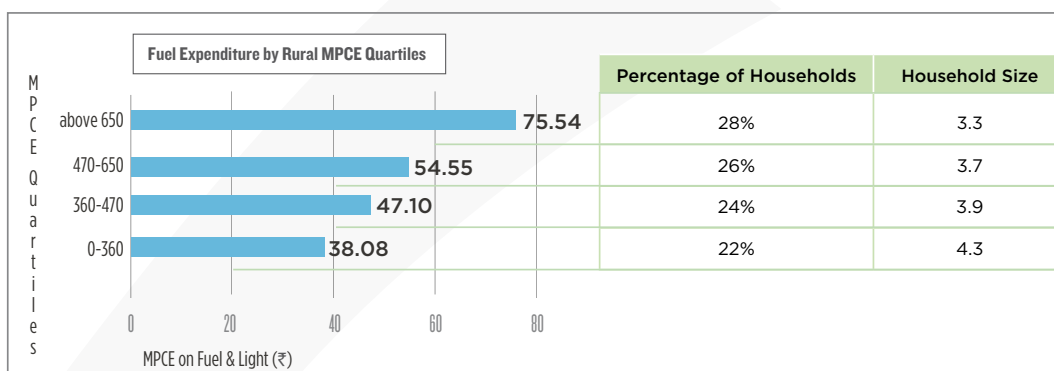


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	1,856,960,249	2,078,758,621	3,935,718,636
Average MPHE on Fuel & Light	202.71	351.34	261.03





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	1,856,960,249	1,117,104,971	2,078,758,621	2,005,417,793
Average MPHE on Fuel (₹)	202.71	121.94	351.34	338.94
Percentage of Market Value		60%		96%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Tamil Nadu
Number of Households Using	8,173,944	1,953,753	10,127,697
Average Quantity/HH/Mo (kg.)	107.2	74.6	100.9
% of Users Paying	27%	67%	34%
Average MPHE (₹)	116.85	99.41	110.31

Monthly Consumption of Dung Cake	Rural	Urban	Tamil Nadu
Number of Households Using	243,907	52,284	296,191
% of Users Paying	23%	36%	25%
Average MPHE (₹)	27.13	19.33	25.14

Monthly Consumption of Kerosene	Rural	Urban	Tamil Nadu
Number of Households Using	7,800,891	2,896,594	10,697,484
Average Quantity/HH/Mo (litre)	3.2	7.5	4.4
Average MPHE (₹)	31.54	88.52	46.97

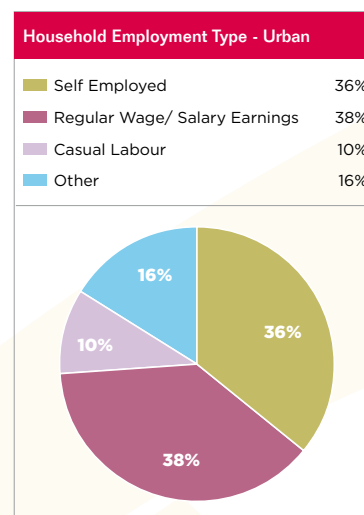
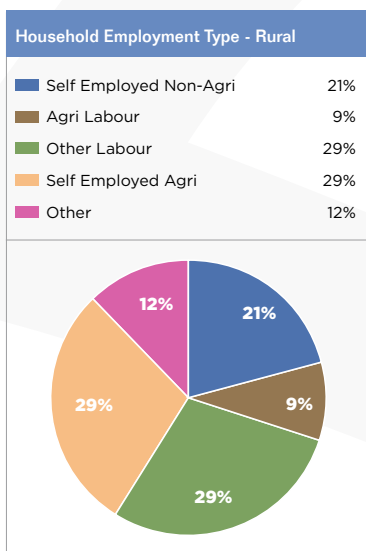
Monthly Consumption of LPG	Rural	Urban	Tamil Nadu
Number of Households Using	1,320,490	3,188,803	4,509,293
Average Quantity/HH/Mo (kg.)	9.7	11.9	11.2
Average MPHE (₹)	194.62	237.19	224.72

Monthly Consumption of Electricity	Rural	Urban	Tamil Nadu
Number of Households Using	7,759,252	5,601,601	13,360,853
Average Quantity/HH/Mo (std. units)	43.6	102.4	68.27
% of Users Paying	96%	97%	97%
Average MPHE (₹)	43.89	153.56	90.26

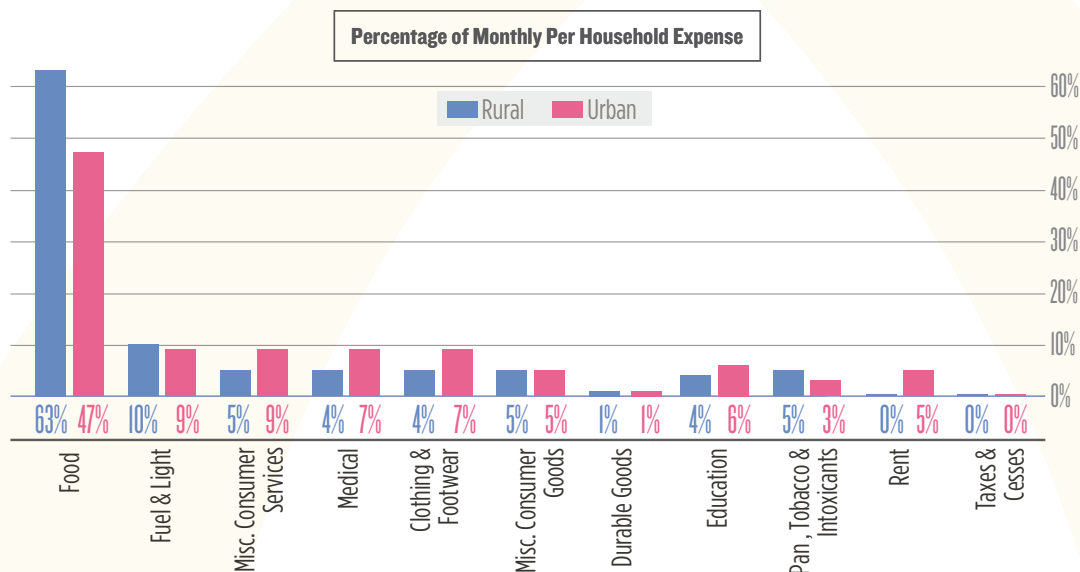


## Section 1: Tripura overview (Households, Employment and Expenditure)

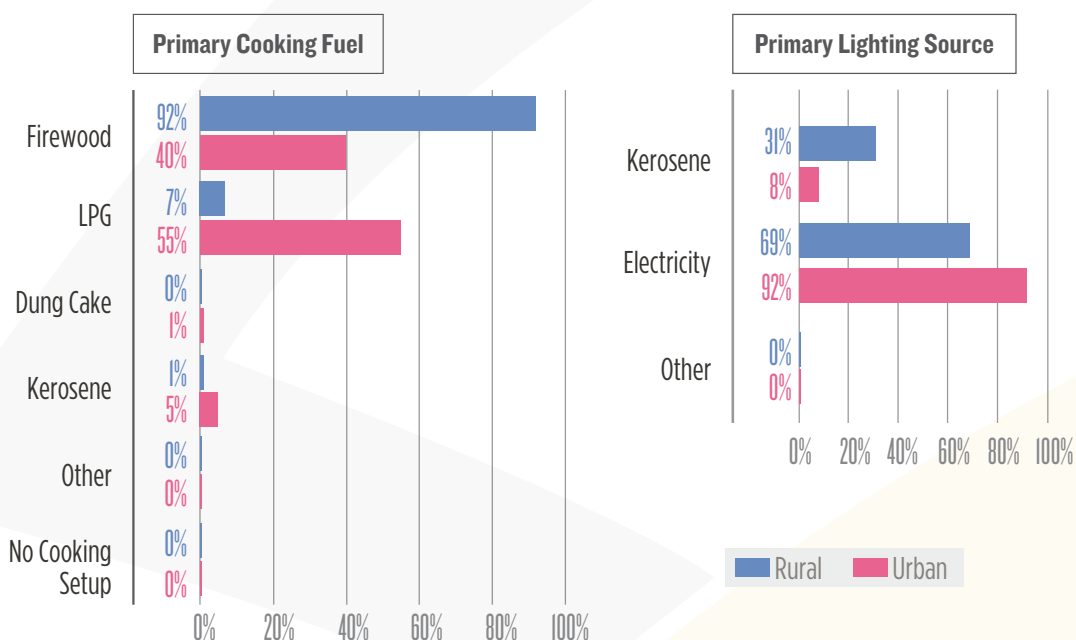
	Rural	Urban
No. of Households	627,346	114,635
% of India's Household Population	0.4%	
Average Household Size	4.39	3.92



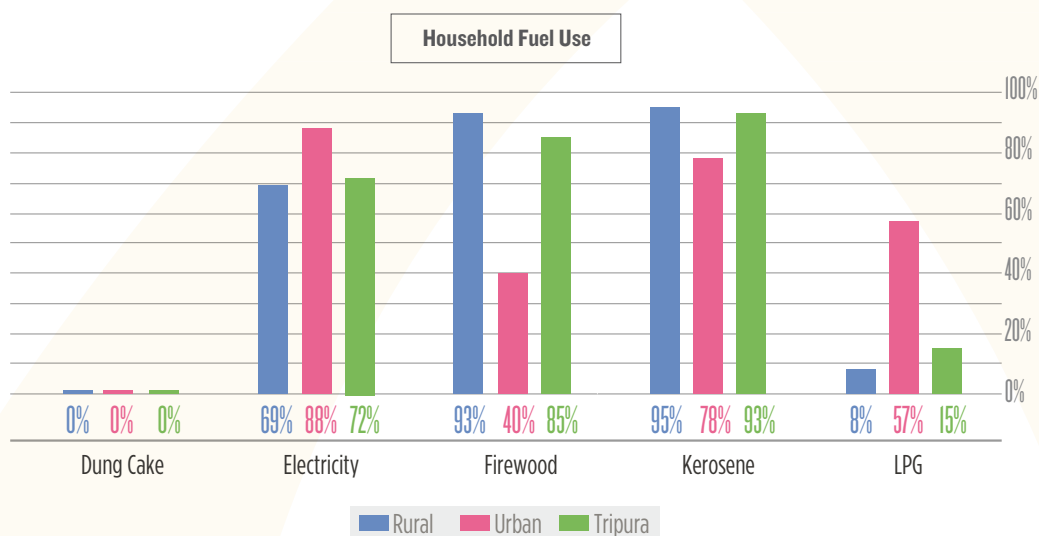
	Rural (₹)	Urban(₹)	Both Rural & Urban(₹)
Total MPHE (All Categories)	2,135.99	3,913.48	2,410.61

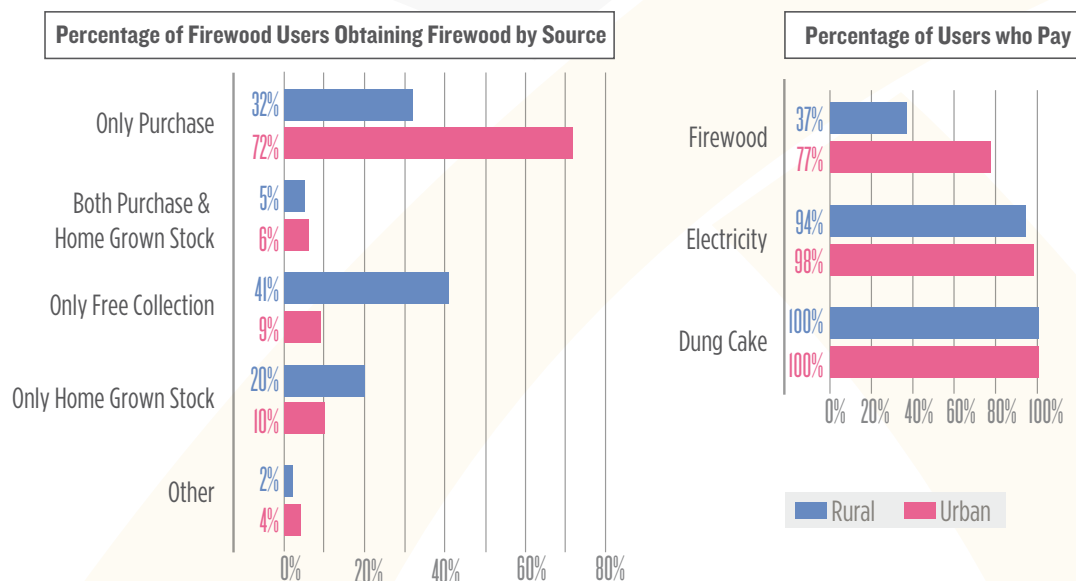
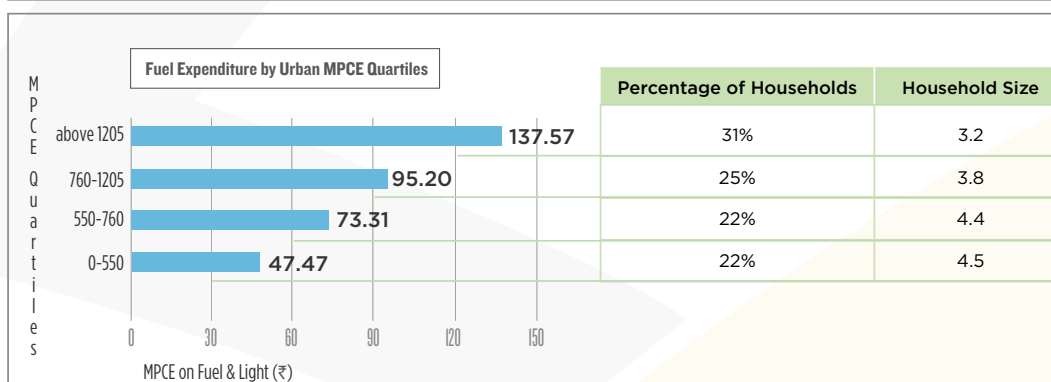
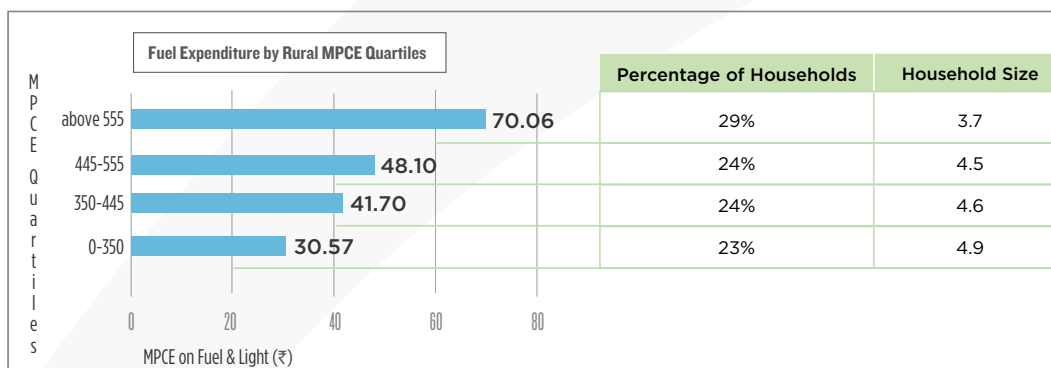


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	130,867,895	39,613,262	170,481,192
Average MPHE on Fuel & Light	208.61	345.56	229.76





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	130,867,895	88,513,695	39,613,262	37,872,713
Average MPHE on Fuel (₹)	208.61	141.09	345.56	330.38
Percentage of Market Value		68%		96%

## Section 3: Consumption and Expenditure patterns for individual fuel type

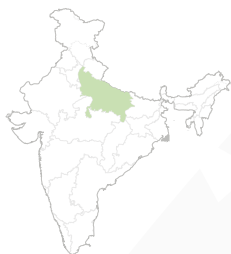
Monthly Consumption of Firewood	Rural	Urban	Tripura
Number of Households Using	585,106	45,684	630,790
Average Quantity/HH/Mo (kg.)	152.6	136.7	151.5
% of Users Paying	37%	77%	40%
Average MPHE (₹)	131.83	144.83	133.64

Monthly Consumption of Dung Cake	Rural	Urban	Tripura
Number of Households Using	614	160	774
% of Users Paying	100%	100%	100%
Average MPHE (₹)	87.00	32.81	75.80

Monthly Consumption of Kerosene	Rural	Urban	Tripura
Number of Households Using	598,138	88,959	687,097
Average Quantity/HH/Mo (litre)	2.7	2.8	2.7
Average MPHE (₹)	27.06	28.85	27.29

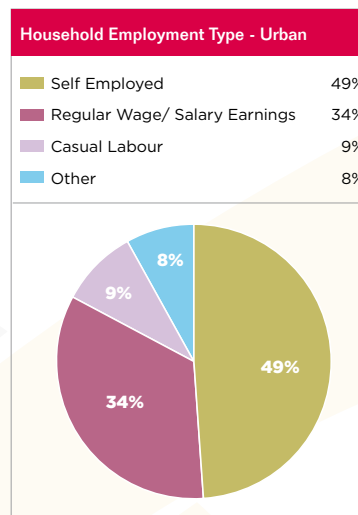
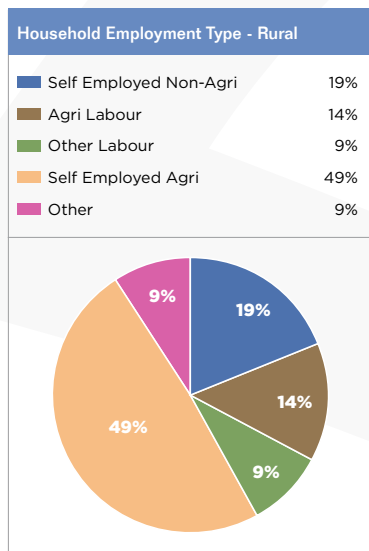
Monthly Consumption of LPG	Rural	Urban	Tripura
Number of Households Using	48,290	64,887	113,177
Average Quantity/HH/Mo (kg.)	12.2	13.3	12.8
Average MPHE (₹)	248.45	265.50	258.23

Monthly Consumption of Electricity	Rural	Urban	Tripura
Number of Households Using	435,261	100,790	536,051
Average Quantity/HH/Mo (std. units)	41.9	67.7	46.77
% of Users Paying	94%	98%	95%
Average MPHE (₹)	70.74	121.60	80.61

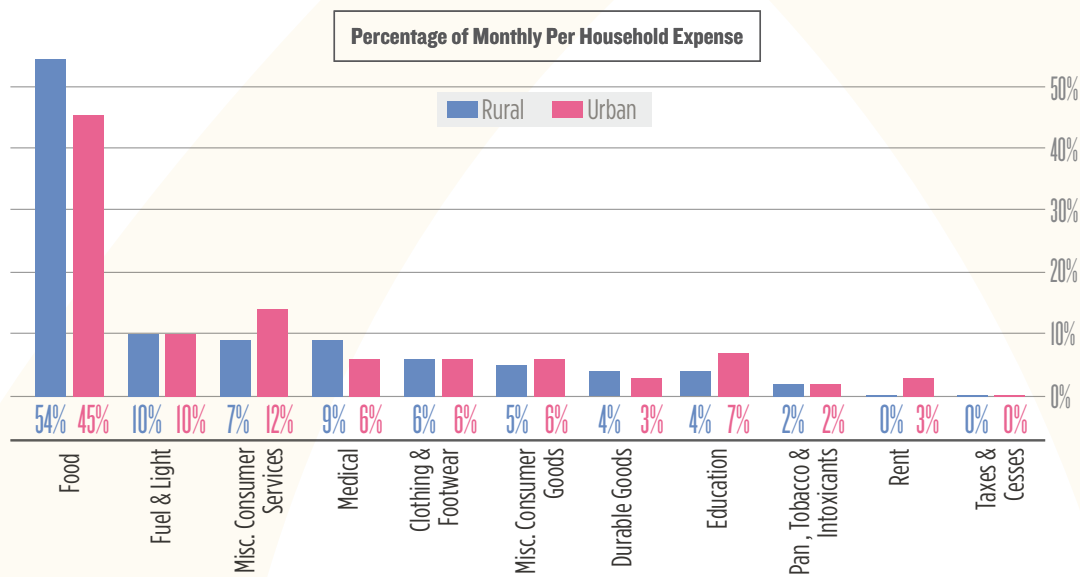


## Section 1: Uttar Pradesh overview (Households, Employment and Expenditure)

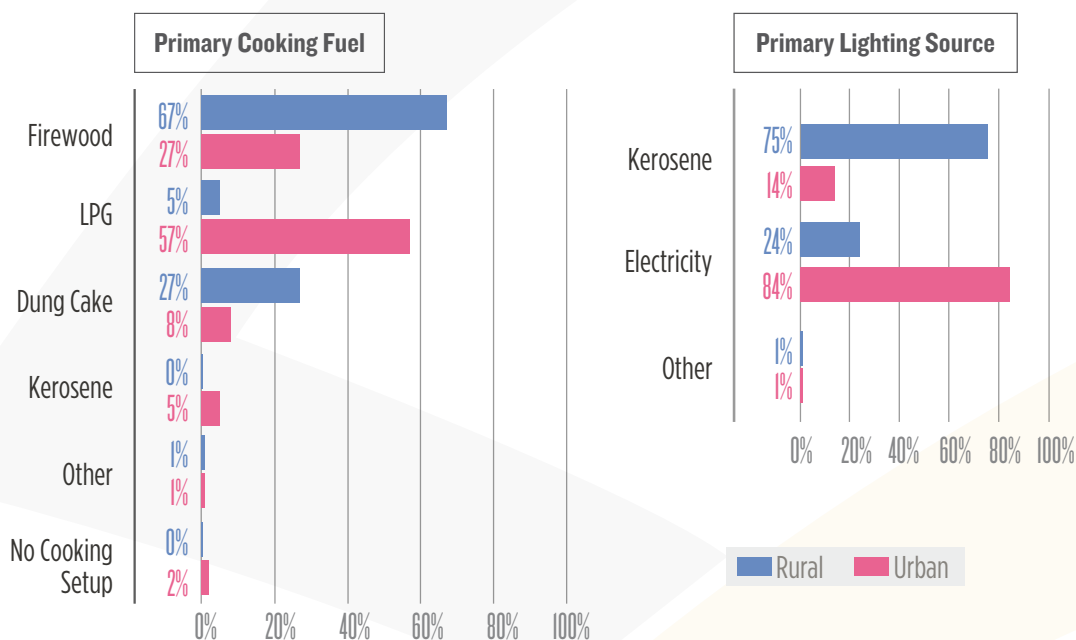
	Rural	Urban
No. of Households	23,257,456	6,394,221
% of India's Household Population	14.3%	
Average Household Size	5.70	5.07



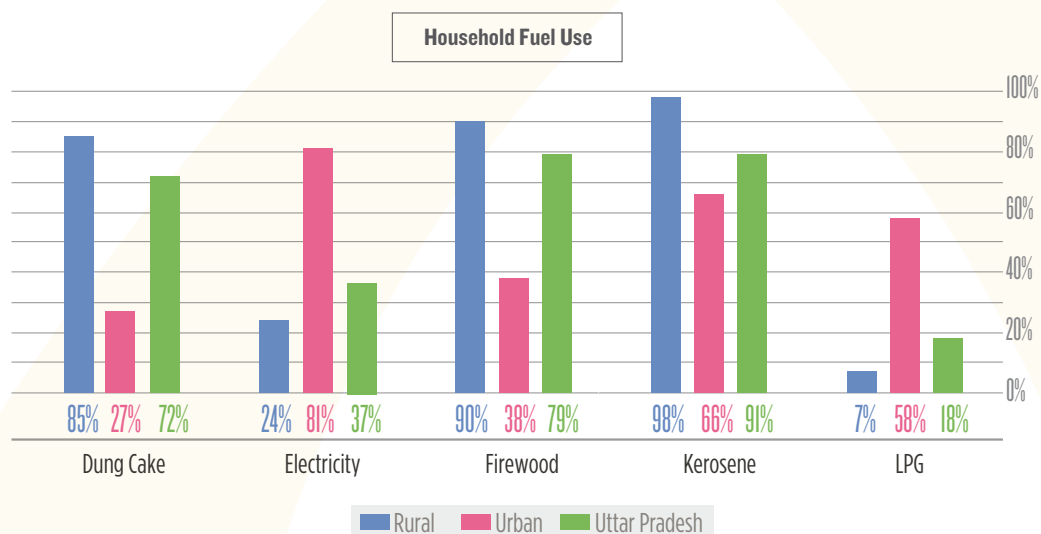
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	3,018.20	4,331.08	3,301.32

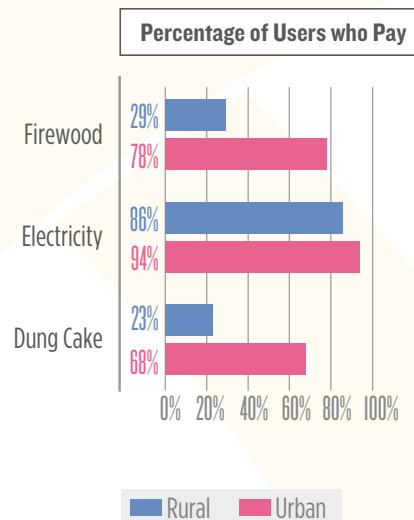
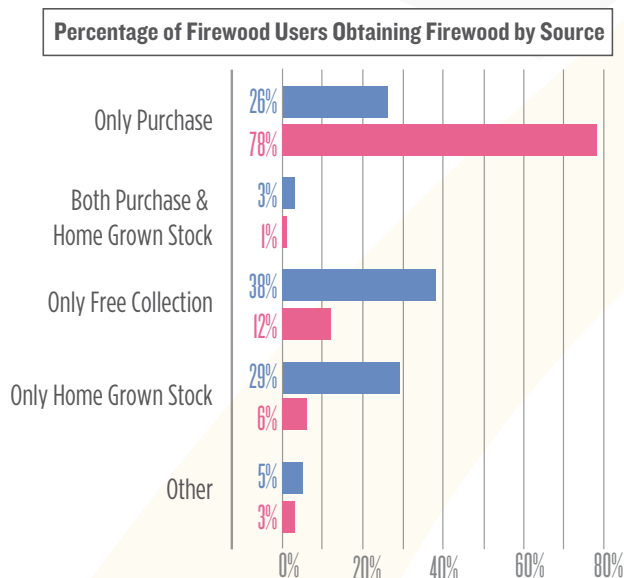
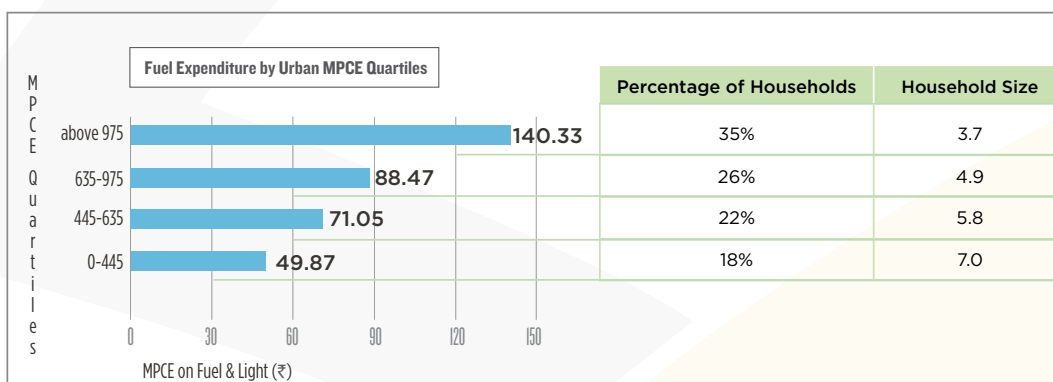
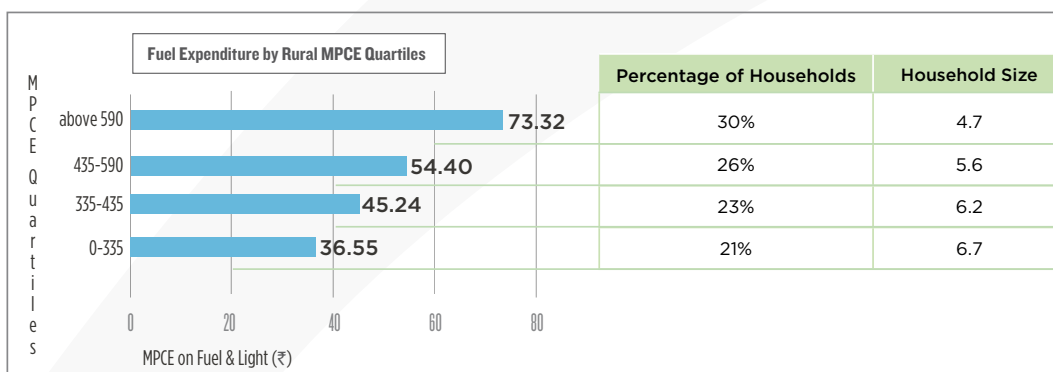


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	6,942,074,580	2,833,177,597	9,775,250,815
Average MPHE on Fuel & Light	298.49	443.08	329.67





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	6,942,074,580	3,421,975,998	2,833,177,597	2,674,565,188
Average MPHE on Fuel (₹)	298.49	147.13	443.08	418.28
Percentage of Market Value		49%		94%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Uttar Pradesh
Number of Households Using	21,002,908	2,412,406	23,415,314
Average Quantity/HH/Mo (kg.)	101.6	77.9	99.2
% of Users Paying	29%	78%	34%
Average MPHE (₹)	147.15	152.04	148.32

Monthly Consumption of Dung Cake	Rural	Urban	Uttar Pradesh
Number of Households Using	19,710,780	1,745,183	21,455,962
% of Users Paying	23%	68%	27%
Average MPHE (₹)	89.34	90.96	89.67

Monthly Consumption of Kerosene	Rural	Urban	Uttar Pradesh
Number of Households Using	22,774,686	4,222,327	26,997,013
Average Quantity/HH/Mo (litre)	3.5	3.6	3.5
Average MPHE (₹)	43.21	48.32	44.01

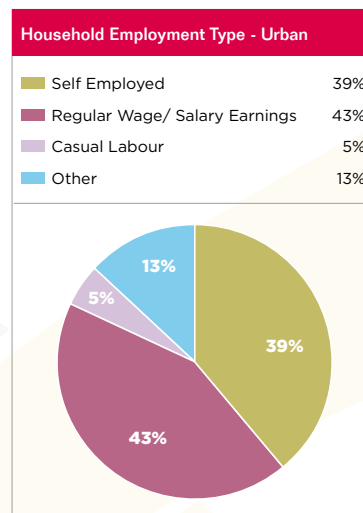
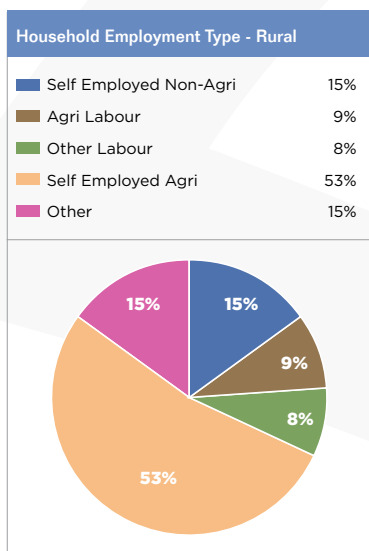
Monthly Consumption of LPG	Rural	Urban	Uttar Pradesh
Number of Households Using	1,701,622	3,724,943	5,426,565
Average Quantity/HH/Mo (kg.)	8.8	11.9	10.9
Average MPHE (₹)	195.75	249.31	232.52

Monthly Consumption of Electricity	Rural	Urban	Uttar Pradesh
Number of Households Using	5,672,598	5,176,174	10,848,772
Average Quantity/HH/Mo (std. units)	49.2	83.9	65.79
% of Users Paying	86%	94%	90%
Average MPHE (₹)	112.69	215.10	163.94

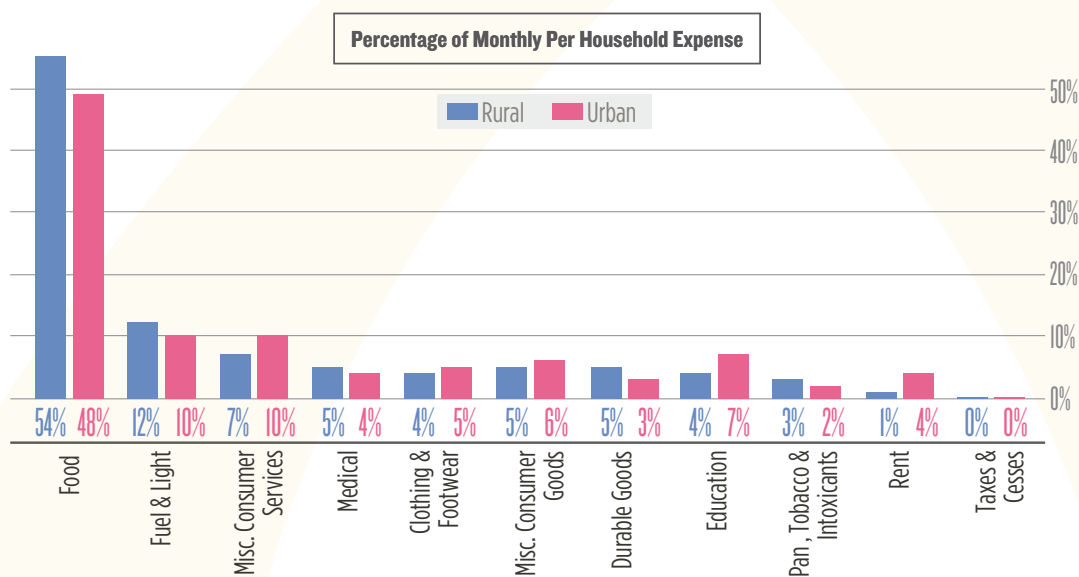


## Section 1: Uttaranchal overview (Households, Employment and Expenditure)

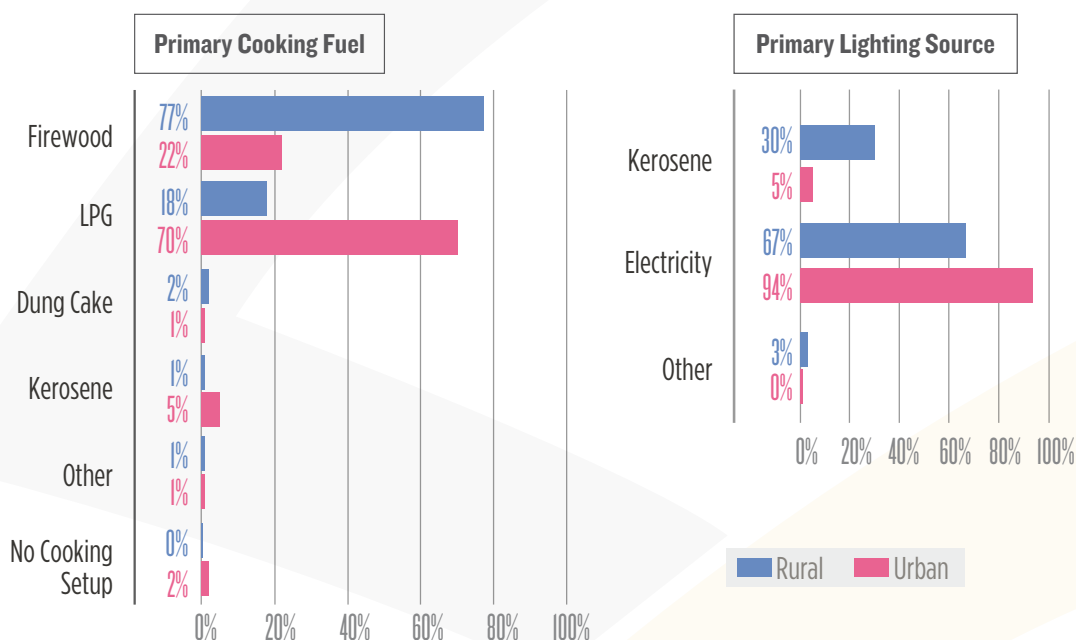
	Rural	Urban
No. of Households	1,259,771	442,811
% of India's Household Population	0.8%	
Average Household Size	5.06	4.39



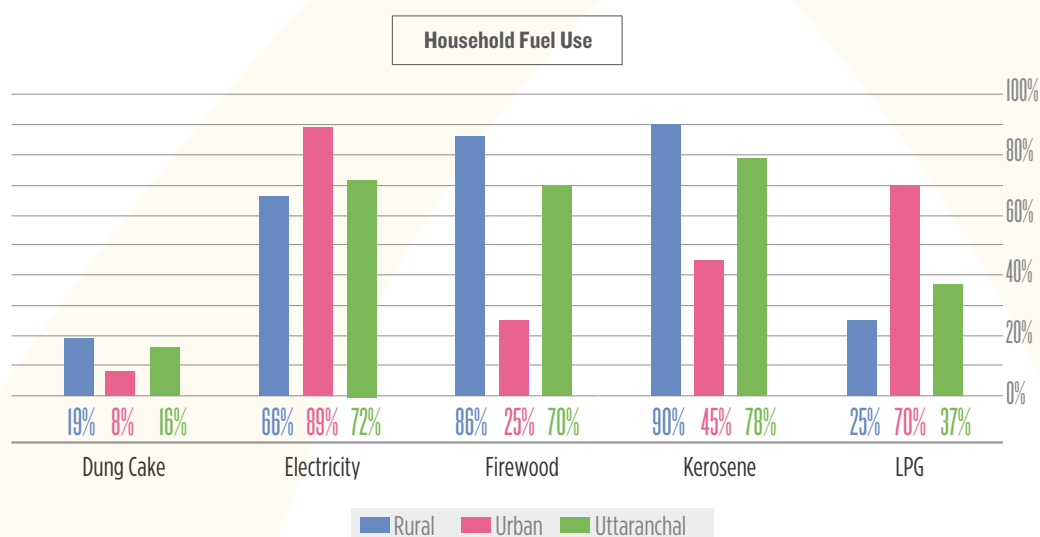
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	3,250.93	4,260.54	3,513.51

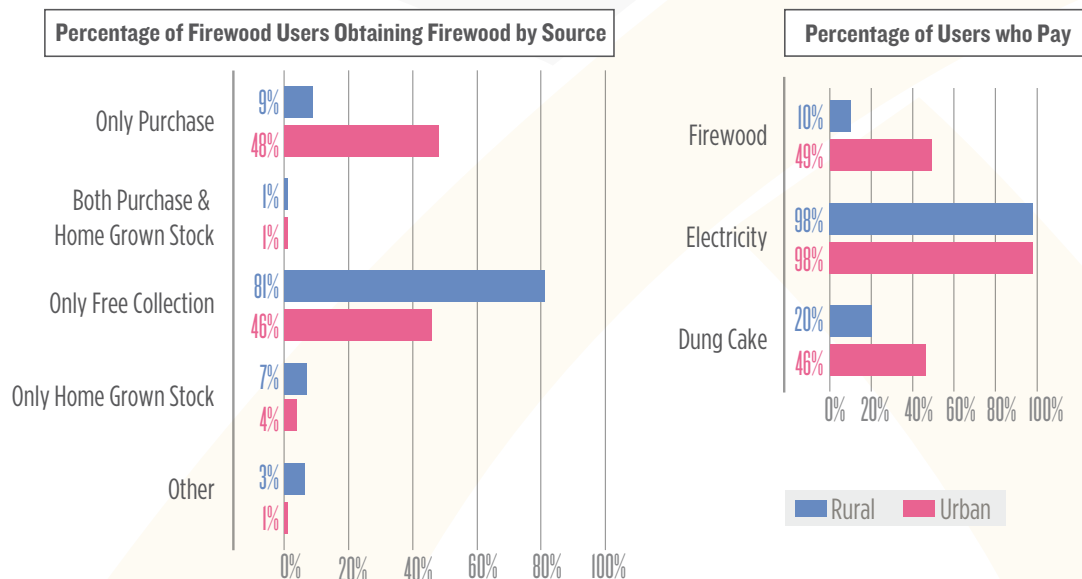
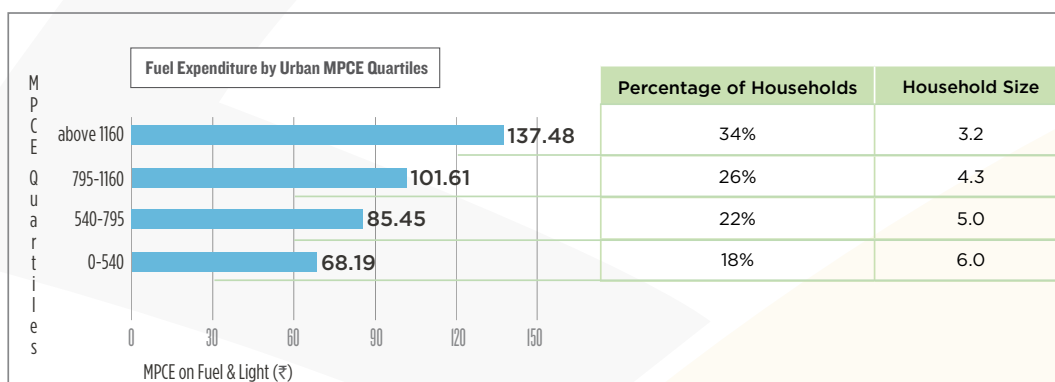
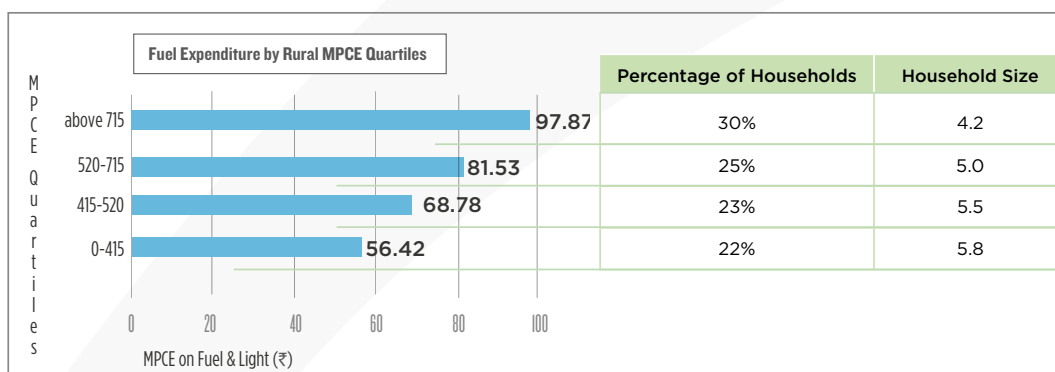


## Section 2: Energy Use (Consumption and Expenditure)



	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	485,109,320	190,684,675	675,793,985
Average MPHE on Fuel & Light	385.08	430.62	396.92





Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	485,109,320	241,973,559	190,684,675	175,462,664
Average MPHE on Fuel (₹)	385.08	192.08	430.62	396.25
Percentage of Market Value		50%		92%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	Uttaranchal
Number of Households Using	1,087,882	110,189	1,198,072
Average Quantity/HH/Mo (kg.)	257.5	178.6	250.3
% of Users Paying	10%	49%	13%
Average MPHE (₹)	200.82	223.76	208.51

Monthly Consumption of Dung Cake	Rural	Urban	Uttaranchal
Number of Households Using	235,962	36,502	272,463
% of Users Paying	20%	46%	23%
Average MPHE (₹)	69.12	58.02	66.14

Monthly Consumption of Kerosene	Rural	Urban	Uttaranchal
Number of Households Using	1,135,251	200,785	1,336,037
Average Quantity/HH/Mo (litre)	3.5	4.2	3.6
Average MPHE (₹)	38.48	50.52	40.29

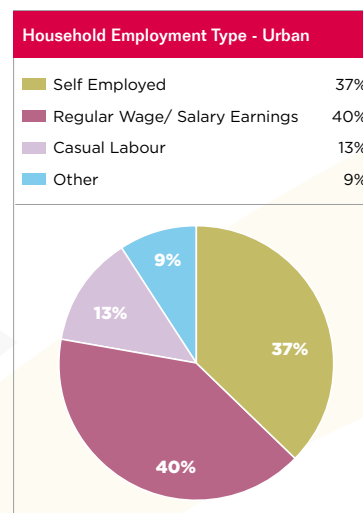
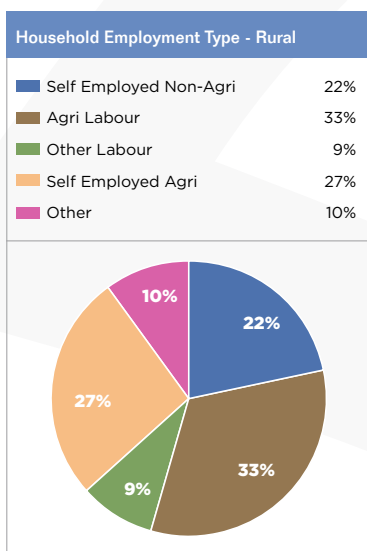
Monthly Consumption of LPG	Rural	Urban	Uttaranchal
Number of Households Using	314,553	310,107	624,660
Average Quantity/HH/Mo (kg.)	9.9	12.2	11.0
Average MPHE (₹)	201.14	243.07	221.96

Monthly Consumption of Electricity	Rural	Urban	Uttaranchal
Number of Households Using	831,018	394,617	1,225,635
Average Quantity/HH/Mo (std. units)	62.1	87.1	70.17
% of Users Paying	98%	98%	98%
Average MPHE (₹)	121.02	184.21	141.36

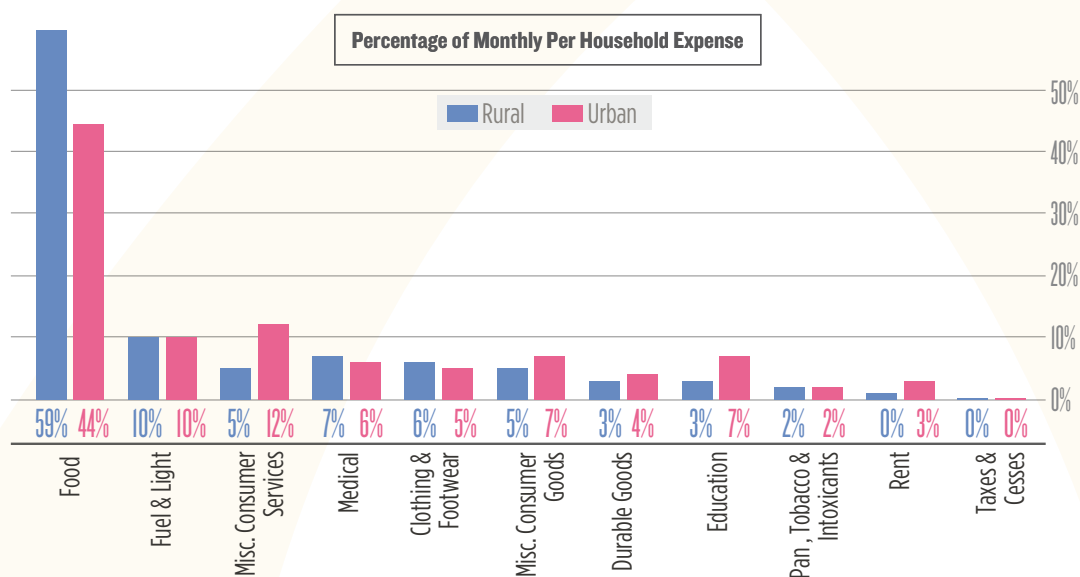


## Section 1: West Bengal overview (Households, Employment and Expenditure)

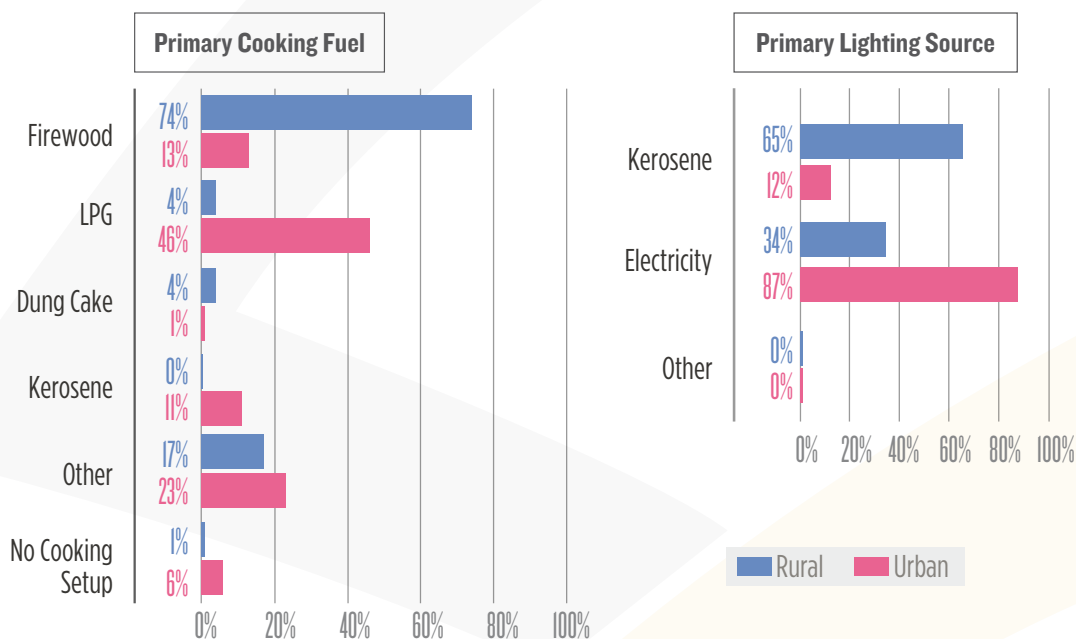
	Rural	Urban
No. of Households	12,688,638	4,881,925
% of India's Household Population	8.5%	
Average Household Size	4.70	3.96



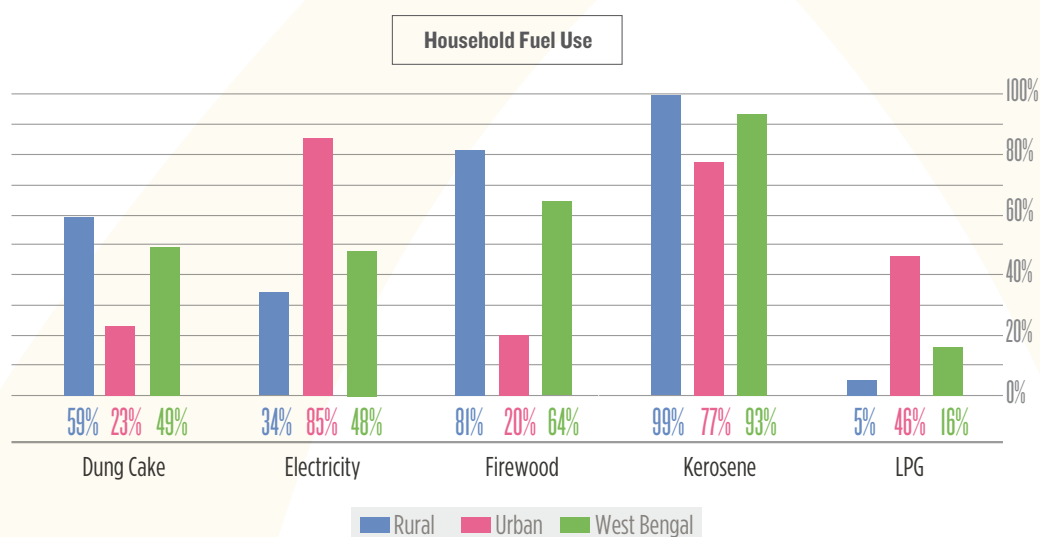
	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total MPHE (All Categories)	2,633.29	4,424.84	3,131.06

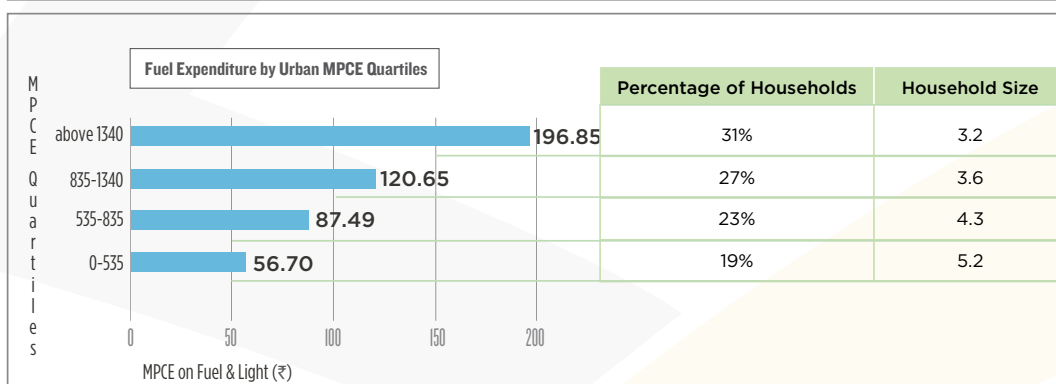
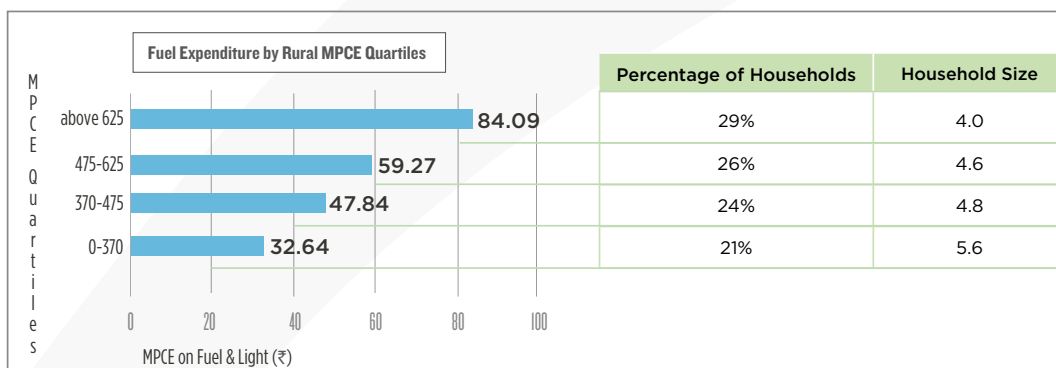


## Section 2: Energy Use (Consumption and Expenditure)

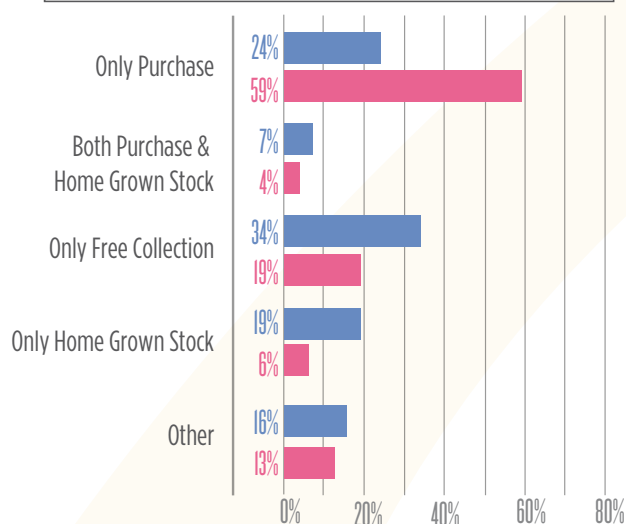


	Rural (₹)	Urban (₹)	Both Rural & Urban (₹)
Total Monthly Expenditure on Fuel & Light	3,389,409,384	2,228,722,789	5,618,132,240
Average MPHE on Fuel & Light	267.12	456.53	319.75

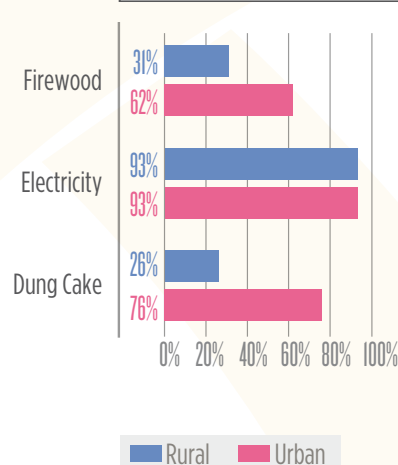




**Percentage of Firewood Users Obtaining Firewood by Source**



**Percentage of Users who Pay**



Market Value Vs. Financial Expenditure	Rural		Urban	
	Market Value	Financial Expenditure	Market Value	Financial Expenditure
Total Monthly Expenditure on Fuel (₹)	3,389,409,384	2,126,810,630	2,228,722,789	2,132,007,529
Average MPHE on Fuel (₹)	267.12	167.62	456.53	436.71
Percentage of Market Value		63%		96%

## Section 3: Consumption and Expenditure patterns for individual fuel type

Monthly Consumption of Firewood	Rural	Urban	West Bengal
Number of Households Using	10,308,675	983,230	11,291,905
Average Quantity/HH/Mo (kg.)	117.9	77.7	114.4
% of Users Paying	31%	62%	34%
Average MPHE (₹)	158.22	128.44	153.44

Monthly Consumption of Dung Cake	Rural	Urban	West Bengal
Number of Households Using	7,423,695	1,108,781	8,532,475
% of Users Paying	26%	76%	33%
Average MPHE (₹)	38.10	35.07	37.19

Monthly Consumption of Kerosene	Rural	Urban	West Bengal
Number of Households Using	12,540,800	3,762,809	16,303,610
Average Quantity/HH/Mo (litre)	3.6	4.9	3.9
Average MPHE (₹)	44.05	69.19	49.86

Monthly Consumption of LPG	Rural	Urban	West Bengal
Number of Households Using	615,542	2,241,641	2,857,183
Average Quantity/HH/Mo (kg.)	12.2	12.7	12.6
Average MPHE (₹)	258.89	284.89	279.29

Monthly Consumption of Electricity	Rural	Urban	West Bengal
Number of Households Using	4,330,082	4,158,728	8,488,810
Average Quantity/HH/Mo (std. units)	48.9	81.7	65.01
% of Users Paying	93%	93%	93%
Average MPHE (₹)	109.93	237.73	172.53

## **APPENDIX A**

### ***Useful Resources***

#### ***Web***

Census of India

<http://censusindia.gov.in>

Energy Information Administration (EIA)

<http://www.eia.doe.gov/country/index.cfm>

HEDON Household Energy Network

<http://www.hedon.info/>

India Energy Portal

<http://www.indiaenergyportal.org/index.php>

India Human Development Survey (IHDS)

<http://ihds.umd.edu/>

IndiaStat

<http://www.indiastat.com/default.aspx>

Ministry of Statistics and Programme Implementation

[http://mospi.nic.in/Mospi\\_New/site/home.aspx](http://mospi.nic.in/Mospi_New/site/home.aspx)

National Council of Applied Economic Research (NCAER)

<http://www.ncaer.org/index.aspx>

National Family Health Survey, India

<http://www.nfhsindia.org/index.shtml>

National Sample Survey Organisation

[http://mospi.gov.in/nssso\\_4aug2008/web/nssso.htm](http://mospi.gov.in/nssso_4aug2008/web/nssso.htm)

Rural Electrification Corporation Limited

<http://recindia.nic.in/index.html>

The World Bank

<http://www.worldbank.org/>

#### ***Books***

Pachauri, S. (2007) "An Energy Analysis of Household Consumption" Berlin, Heidelberg, New York: Springer.

## **APPENDIX B**

Below are explanations taken from the accompanying instructions to NSS field staff for conducting the NSS Consumer Expenditure Survey.

### **[Box A]**

**Imputation of Value:** Household consumer expenditure is measured as the expenditure incurred by a household on domestic account during a specified period, called reference period. It includes the imputed values of goods and services, which are not purchased but procured otherwise for consumption. In other words, it is the sum total of monetary values of all the items (i.e. goods and services) consumed by the household on domestic account during the reference period. The imputed rent of owner-occupied houses is excluded from consumption expenditure. Any expenditure incurred towards the productive enterprises of the households is also excluded from household consumer expenditure.

**Imputation of Value:** If an item is purchased and consumed by a household, the value of consumption can be taken as its purchase value. But the value of an item consumed for commodities received in exchange of goods and services, home-grown/home-produced stock, transfer receipts or free collection, all require imputation. The rule for imputation of value of consumption of commodities is given below:

- The value of goods and services received in exchange of goods and services – including those received as perquisites by the members of the household from their employers - is imputed at the rate of average local retail prices prevailing during the reference period. However, the judgement of the respondent about the price of the goods purchased in exchange is to be taken into account;
- The value of consumption out of gifts, loans, free collection, etc. is imputed at the average local retail prices prevailing during the reference period;
- The value of consumption out of purchase will be the value at which the purchase was made.

**[Box B]**

**Source Code:** Items consumed during the last 30 days may have been procured or acquired in one or more ways. The 'source' from which the item consumed was procured (or the means by which it was acquired) by the household will be recorded in terms of codes. The codes to be used are:

only purchase .....	1
only home-grown stock .....	2
both purchase and home-grown stock .....	3
only free collection .....	4
only exchange of goods and services .....	5
only gifts/ charities .....	6
others .....	9

Code 3 will be used if consumption was made out of both purchase and home-grown stock but not from any other sources. Any other combination of sources will get code 9. Consumption out of transfer receipts or commodities received in exchange of goods and services will also get code 9.

## APPENDIX C

### Census Population Projections for March, 2004

*From 2001 Census of India (<http://censusindia.gov.in>)*

Location	Projected Population	Percent of Total Population
Andaman & Nicobar Islands	391,000	0.0%
Andhra Pradesh	78,973,000	7.3%
Arunachal Pradesh	1,141,000	0.1%
Assam	27,878,000	2.6%
Bihar	87,745,000	8.1%
Chandigarh	1,000,000	0.1%
Chhattisgarh	21,904,000	2.0%
Dadra & Nagar Haveli	240,000	0.0%
Daman & Diu	194,000	0.0%
Delh	15,129,000	1.4%
Goa	1,409,000	0.1%
Gujarat	53,290,000	4.9%
Haryana	22,450,000	2.1%
Himachal Pradesh	6,309,000	0.6%
Jammu & Kashmir	10,622,000	1.0%
Jharkhand	28,388,000	2.6%
Karnataka	54,926,000	5.1%
Kerala	32,707,000	3.0%
Lakshadweep	69,000	0.0%
Madhya Pradesh	64,006,000	5.9%
Maharashtra	101,624,000	9.4%
Manipur	2,251,000	0.2%

Location	Projected Population	Percent of Total Population
Meghalaya	2,409,000	0.2%
Mizoram	923,000	0.1%
Nagaland	2,068,000	0.2%
Orissa	38,085,000	3.5%
Pondicherry	1,019,000	0.1%
Punjab	25,384,000	2.4%
Rajasthan	59,984,000	5.6%
Sikkim	562,000	0.1%
Tamil Nadu	64,096,000	5.9%
Tripura	3,324,000	0.3%
Uttar Pradesh	176,374,000	16.3%
Uttaranchal	8,927,000	0.8%
West Bengal	83,316,000	7.7%
All India	1079117000	100%



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[www.ifmr.ac.in/cdf](http://www.ifmr.ac.in/cdf)