

Assessment report: Primary survey on household cooking fuel usage and willingness to convert to LPG

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Ministry of Petroleum and Natural Gas,
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Abbreviations

Acronym	Definition
AS	Assam
BHR	Bihar
CRIS	CRISIL Risk and Infrastructure Solutions Ltd
CSR	Corporate social responsibility
CWE	Chief wage earner
DBT	Direct benefit transfer
EMI	Equated monthly instalment
GP	Gram panchayat
GUJ	Gujarat
HO	Head office
JHK	Jharkhand
LPG	Liquefied petroleum gas
MG	Meghalaya
MHI	Monthly household income
MP	Madhya Pradesh
NAG	Nagaland
ODI	Odisha
OMC	Oil marketing company
OJT	On-the-job training
PDS	Public distribution system
PESO	Petroleum and Explosives Safety Organization
PM	Parallel marketers
PNG	Piped natural gas
PPAC	Petroleum Planning and Analysis Cell
PSU	Public sector undertaking
QC	Quality check
RAJ	Rajasthan
RGGLV	Rajiv Gandhi Gramin LPG Vitaran
RIL	Reliance Industries Ltd
ROI	Return on investment
SOP	Standard operating procedure
TG	Target group
TRIP	Tripura
UP	Uttar Pradesh
WB	West Bengal

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1. Executive summary

One of the major facets of the progressive growth of a country is the reach, access and utilization of energy sources across the country. For India to witness an inclusive and holistic growth, a strong focus needs to be on the rural populace, energy usage being one of the primary areas of emphasis.

However, the rural population in India still continues to rely heavily on traditional fuels such as cow dung, biomass, kerosene etc., for cooking purpose. The preference for liquefied petroleum gas (LPG) as a preferred fuel for cooking has been restricted to urban areas, with rural areas still dependent on traditional fuels due to affordability, accessibility and awareness issues. Addressing these deterrents is imperative to enable the rural populace to switch to cleaner and efficient cooking, thereby achieving the government's stated objective of progressive growth.

The year 2016 has been declared by the Government of India as "The year of LPG consumers" with focus on supplying clean fuel to majority of the households in the coming three years. As part of this thrust, the government has launched the Pradhan Mantri Ujjwala Yojana, which aims to provide LPG connections to five crore below poverty line (BPL) households by 2018-19. The scheme is expected to be a fillip for the rural populace to use the clean fuel in an affordable manner.

In pursuit of bridging this gap between the unconnected and connected LPG households, as well as capture detailed data on barriers to and potential of LPG penetration, the Petroleum Planning & Analysis Cell (PPAC) under the Ministry of Petroleum & Natural Gas (MoPNG) commissioned a detailed primary survey across states that have low LPG penetration. The structured survey, the largest carried out in the history of India in the energy sector, amassed primary data from 1.03 lakh unconnected LPG households across 120 districts in 13 states - Assam, Bihar, Chhattisgarh, Gujarat, Jharkhand, Madhya Pradesh, Meghalaya, Nagaland, Odisha, Rajasthan, Tripura, Uttar Pradesh and West Bengal. The survey was conducted over 53 days, covering 120 districts, 211 sub-districts, across topographies such as hilly areas, forest areas, plains, etc. for a complete representation, in terms of demographic profile, occupation, culture, income patterns and accessibility. In addition to households, 1,418 gram panchayats were interviewed / surveyed in the 120 districts to seek their views on drivers and barriers of LPG usage.

The goal of the survey, conducted by a team of 122 enumerators, was to assess the potential of LPG adoption and cooking fuel usage among the unconnected households by:

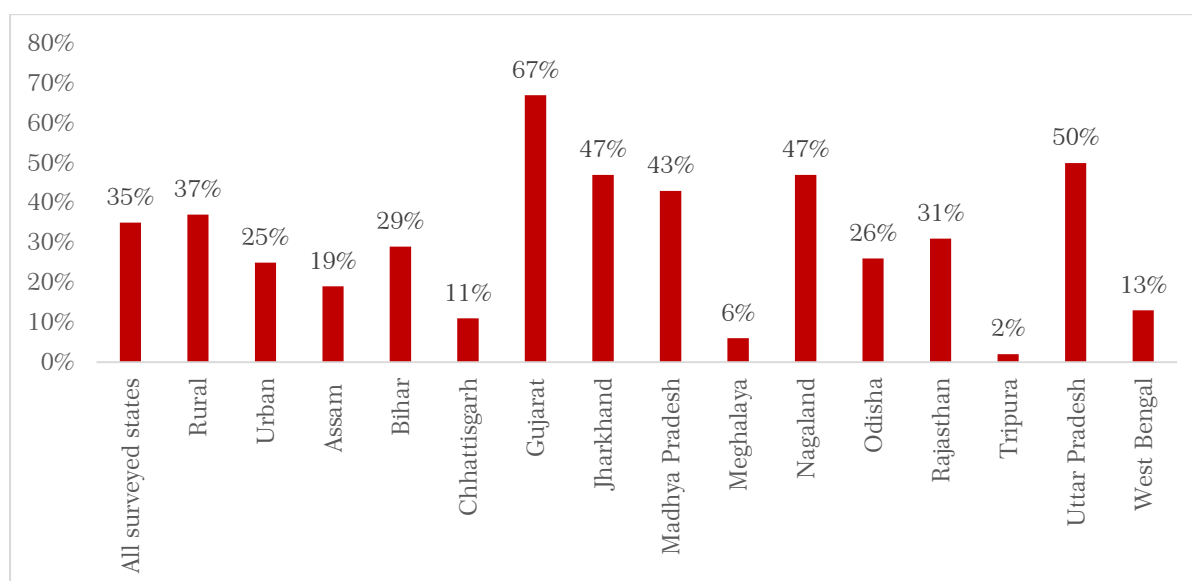
- Mapping current cooking fuel usage and expenditure incurred on cooking fuel of unconnected households,
- Identifying key drivers and barriers for LPG use among urban and rural households that currently do not use LPG as a cooking fuel,
- Assessing market readiness and price sensitivity for new LPG connections and refilling, and identifying markets that could easily adopt LPG,
- Enumerating conversion drivers that can facilitate LPG adoption in these markets, and
- Providing directions to formulate interventions through schemes/policy frameworks to scale up demand.

The key findings from the primary survey are:

a) Current cooking fuel consumption

Primary cooking fuels used in India by unconnected households are biomass, cow dung cakes and firewood. Firewood is the dominant cooking fuel used in rural areas, followed by cow dung cakes and biomass. While biomass and cow dung are largely procured for free from agriculture waste and owned livestock, firewood is often purchased, as it is not available, accessible or allowed to be collected from reserved/protected forests. Considering all the three fuels, 35% of households at overall level are procuring cooking fuel for free. Within this, 37% unconnected households in rural areas procure cooking fuel for free as against 25% urban households. Across the surveyed states, an average 35% unconnected households procure firewood for free, 76% procure cow-dung cakes for free and 88% procure biomass for free for cooking.

Figure 1: Households procuring cooking fuel (firewood, biomass, and cow dung) for free (%)



Easy availability of firewood in the vicinity of forests is a primary barrier to adoption of LPG. The top five states where over 40% of the households procure firewood for free are Gujarat, Madhya Pradesh, Jharkhand, Uttar Pradesh and Nagaland. Usage of firewood is low in areas with challenging topography. Considerable use of cow dung cakes alongside firewood is seen in states with a large livestock population - Bihar, Chhattisgarh, Madhya Pradesh, Rajasthan Uttar Pradesh and West Bengal. Usage of biomass is also largely seen in the states of Bihar, Tripura and West Bengal.

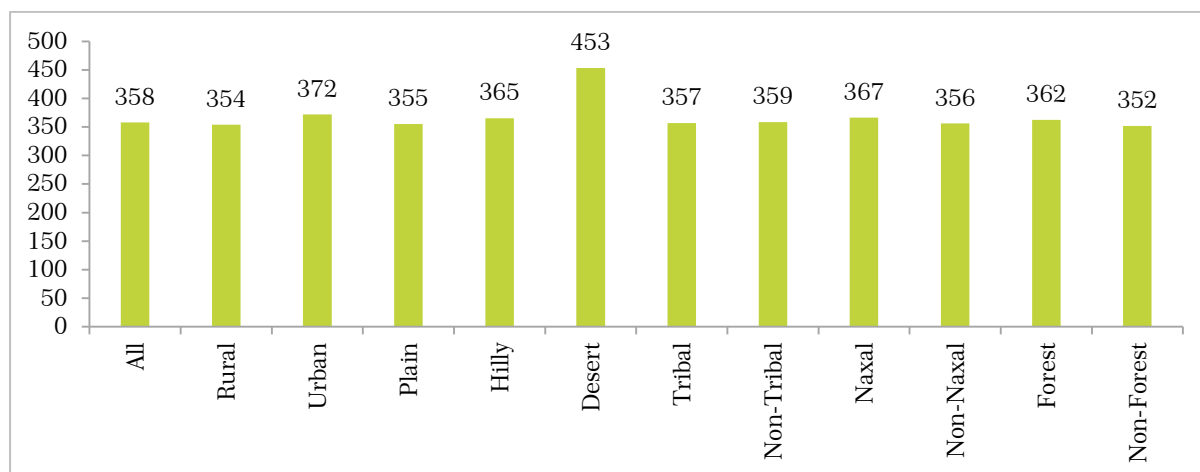
The primary survey revealed that unconnected households use an average of 121 kg firewood per month. High usage of firewood (more than 150 kg/month) is seen in districts that are located in dense forests and areas with high tribal population. Usage of cow dung on an average is 98 kg per month at an overall level. Use of biomass is 33-125 kg/month in states where it is used as supplementary fuel to firewood. Biomass usage in India is the highest in West Bengal at an average of 125 kg/month.

b) Expenditure on cooking fuels

Cumulative average expenditure on cooking fuel (firewood, biomass and/or cow dung) is Rs 358/month across the 13 surveyed states for households where at least one of the three fuels is purchased. For such households, the total average monthly spend on cooking fuel varies between rural and urban areas - Rs 354/month in rural areas (free procurement - 37%) and Rs 372/month in urban areas (free procurement - 25%).

The average monthly amount spent by households in desert areas (Rs 453/month) is the highest among region-wise categories¹ at Rs 453, followed by Naxalite belts (Rs 367), hilly areas (Rs 365), forest areas (Rs 362), non-tribal belts (Rs 359), tribal belts (Rs 357), non-Naxalite belts (Rs 356), plains (Rs 355), and non-forest areas (Rs 352).

Figure 2: Monthly expenditure on cooking fuel (comprising of biomass, cow dung and firewood) (Rs/month)



(All indicates average of all surveyed states)

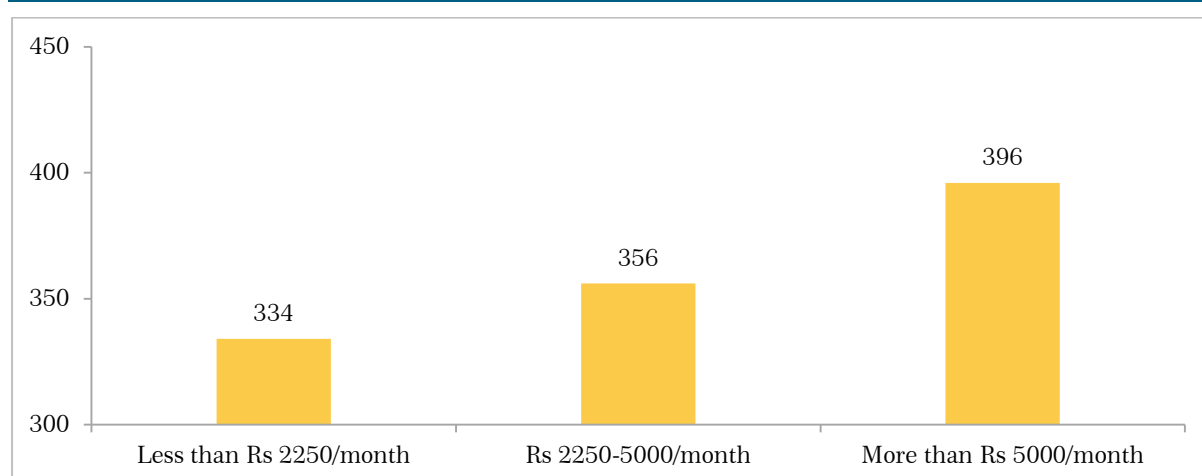
States with high monthly average spend on cooking fuel are Meghalaya, Nagaland, Odisha, Tripura and West Bengal. Lowest average cooking fuel spend of Rs 285/month is in Uttar Pradesh. Expenditure on cooking fuels is driven by the topography of the place and availability of fuels.

Cumulatively, for all surveyed states, free procurement of cooking fuel declined from 41% in households with monthly household income (MHI) of less than Rs 2,250 to 34% in the Rs 2,250-5,000 MHI bracket, and further to 26% in the over Rs 5,000 MHI bracket. This shows that higher economic status translates into lower propensity to spend time and effort in procuring free fuel.

Monthly expenses on cooking fuel also shows a high degree of correlation with MHI – rise in MHI increases the expenditure on cooking fuel (as the component of free fuel declines). Monthly expense for the lowest MHI segment is estimated at Rs 334, with 59% of the households in the segment paying for fuel. This increases to Rs 356 for the mid-MHI segment, with 66% procuring paid fuel, and reaches Rs 396 for the high MHI segment of Rs 5,000, wherein 74% pay for fuel.

¹ Category segregation based on one selected critical factor about an area. A particular area might have one or more attributes.

Figure 3: Monthly spending on fuel in relation with monthly income levels (Rs/month)



c) Key barriers to adoption to LPG

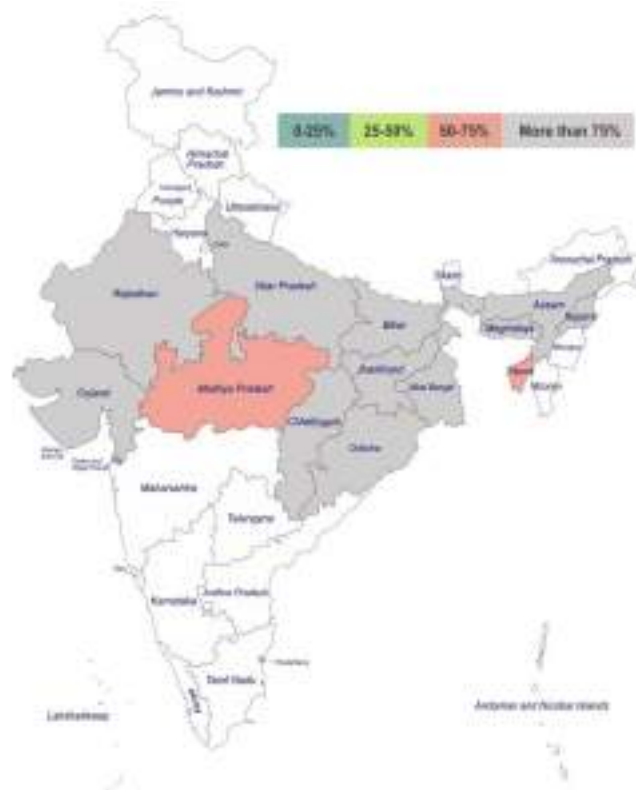
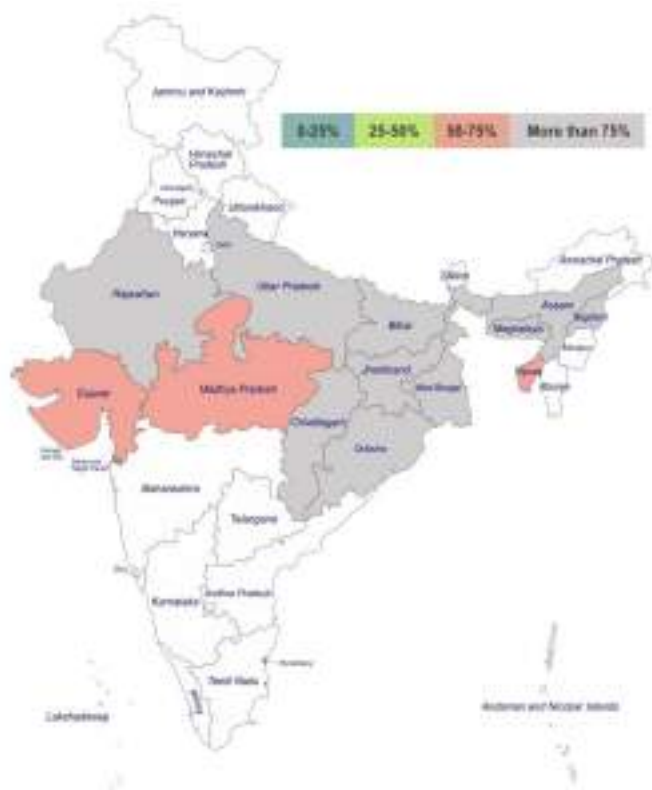
Affordability-related barriers

Key barriers for not applying for LPG connection are high initial cost, including security deposit / price of gas stove (86%) and high recurring cost of the cylinder (83%). Of the 120 districts surveyed, 58 districts reported high degree of reluctance (over 90% unconnected households) to opt for LPG as cooking fuel due to the high initial cost. Owing to high price of LPG refill, 54 out of 120 districts reported high reluctance (over 90% unconnected households).

Among all the 13 surveyed states, high initial cost has emerged as a barrier among 86% households, irrespective of monthly income level. High recurring cost emerged as a barrier among 81% households with monthly income below Rs 2,250/month, 84% households with Rs 2,250-5,000/month income and 84% households with Rs 5,000/month and above income. This indicates that refill cost is also a significant barrier regardless of the household income level.

Figure 4 State-wise spread of high recurring cost as barrier

Figure 5: State-wise spread of high initial cost as barrier



Availability-related barriers

Although there are perceptible variations in the traditional fuel mix varies across the surveyed states, the unifying feature is limited access to LPG. Other significant barriers are long waiting periods to get a refill, distance of the distribution centre and tedious application procedure. These barriers, including the tedious application process and long waiting time for LPG refill, could be perception-related issues, as the respondents are not yet connected to the LPG service.

Long waiting time to get a LPG refill is a particular cause of apprehension among unconnected LPG households in Assam, Bihar, Meghalaya, Nagaland and Uttar Pradesh. Further, majority of the gram panchayats (GPs) in Assam, Meghalaya, Nagaland and Uttar Pradesh have shared that the average waiting time is in excess of 15 days to avail an LPG refill. In all other surveyed states, except Rajasthan, majority of the GPs said that the time taken to get an LPG refill is 4-15 days. The least time (less than 3 days) has been noted by majority of the GPs in Rajasthan.

Hilly, deep interior and areas with naxal activities face maximum issues, due to lack of distribution centres. Distance of distributor centres is a hurdle in the hilly states of Nagaland and Tripura - 40- 50% of the unconnected households in the two states are not catered to due to the absence of distributor centres.

Awareness-related barriers

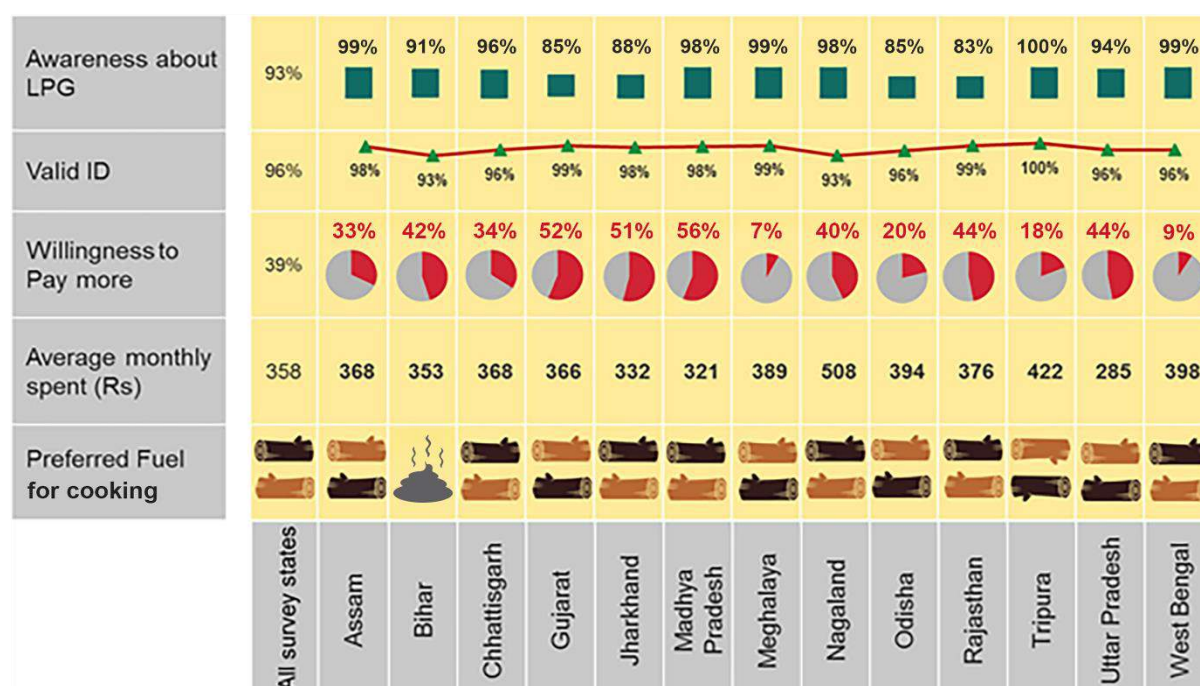
Among the surveyed states, the perception of LPG being unsafe is as high as 46% (rural - 45% and urban - 48%). States where 50% or more households mentioned safety as a barrier are Gujarat, Jharkhand, Odisha, Rajasthan and Uttar Pradesh. Low awareness with regard to advantages of LPG as a cooking fuel has been

cited as a spanner towards the adoption of LPG. Non-familiarity about operating an LPG stove is a concern expressed by 35% of the surveyed households. Moreover, there is poor awareness about the adverse health impact of traditional cooking fuels.

Also, in the surveyed states, the perception regarding taste of food cooked by using LPG is a barrier among 26% unconnected households. Taste is a barrier among unconnected households in areas where predominantly traditional food items/dishes are prepared using locally grown ingredients and deeply ingrained cooking habits. Long-held beliefs about the method of cooking leading to enhanced taste exist in many areas. These could serve as strong barriers towards adoption of LPG as a cooking medium.

Taste perception is a significant barrier to adoption among Gujarat, Jharkhand, Odisha and Rajasthan households. In Rajasthan, cooking of bajra roti, bati, etc. is considered to be difficult with LPG. Roti prepared over firewood or cow dung cake flame is perceived to retain its sweet taste, whereas there is a perception that cooking over an LPG flame leads to loss of sweetness. In Uttar Pradesh, the perception is that the food may not be fully cooked over a gas flame. Some households in Bihar were of the opinion that spices used may not cook well and provide the flavours on LPG flame as compared to firewood flame. Major resistance on account of taste of food cooked using LPG exists in tribal-dominated areas, as their diet is predominantly non-vegetarian or wild edible plants, which are cooked on slow flame using traditional cooking methods.

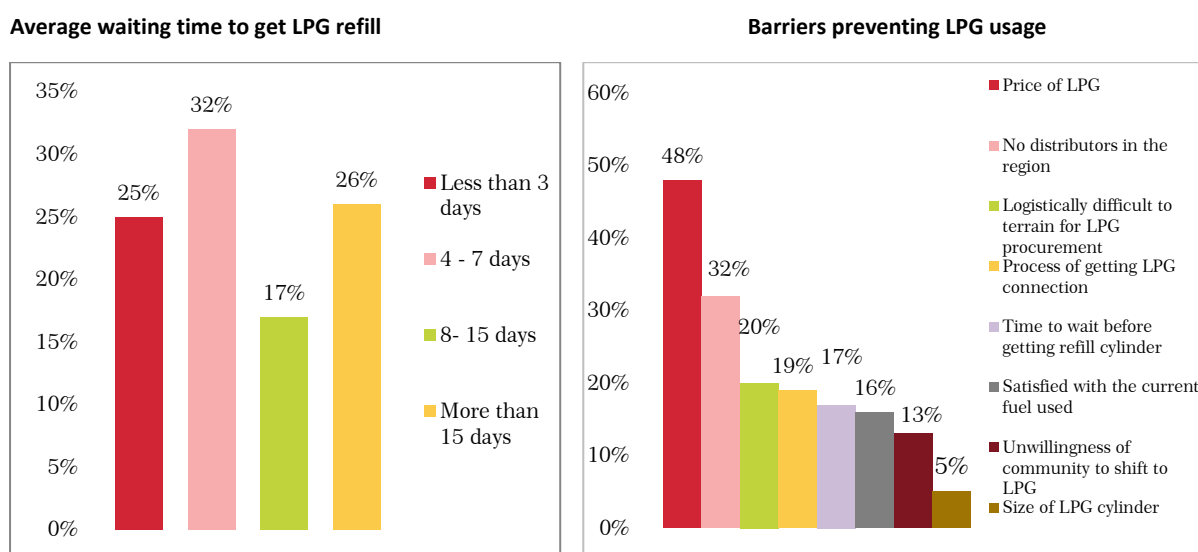
Figure 6: Key findings of primary survey (households)



Meanwhile, the awareness level about LPG is high at 93% at an overall level across the surveyed states. Also, majority of the respondents had valid ID proof, which is an essential document to avail an LPG connection. However, only 39% of the respondents expressed their willingness to pay more in comparison to the alternate fuel they were using. Hence, price is a crucial impediment for the households to switch to LPG.

The average monthly spend for fuel (for households paying for at least one fuel) varies, depending on availability and access to alternate fuels. North-eastern states such as Nagaland and Tripura have a higher monthly expenditure of Rs 508 and Rs 422, respectively, on the purchase of fuel for cooking, whereas Uttar Pradesh has relatively lower monthly expenditure at Rs 285.

Figure 7: Key findings of gram panchayat survey



While price of LPG has been cited by GPs as the most significant barrier for usage of LPG, another barrier is the non-availability of LPG distributors operating in their respective regions. Majority of GPs in Nagaland, Meghalaya, Tripura and Assam have cited that average waiting time for LPG refill is more than 15 days.

Addressing barriers identified by households as well as GPs warrant multi-pronged initiatives from the government and other stakeholders across the LPG value chain. While addressing concerns related to availability and awareness will require long term efforts, in terms of strengthening the LPG infrastructure, concerns regarding affordability can be addressed by undertaking suitable policy measures of reducing/subsidising initial security deposit and limiting recurring cost of LPG to manageable levels. Schemes such as Pradhan Mantri Ujjwala Yojana, where the initial cost of procuring the cylinder and connection cost is waived for BPL women applicants, would benefit in increasing LPG penetration.

At an overall level, LPG penetration across the targeted households would require addressing the barriers of affordability, accessibility and awareness. With affordability emerging as a dominant and recurring barrier across states, it will call for measures on initial and recurring cost. To address accessibility, it would require initiatives on strengthening the infrastructure, particularly on the distribution network for rural and challenging terrain areas. Awareness-related barrier on health, taste and safety will need to be addressed through focussed programmes.



2. Introduction

The government's focus to deepen the usage of LPG for cooking in rural areas has multi-pronged benefits. Apart from reducing tree cutting in forest areas, rural women will benefit as they would not be exposed to health hazards associated with smoke from *chullas* caused by cooking fuels such as biomass, firewood or other polluting fuels.

LPG being a relatively environment-friendly and clean fuel has tremendous potential as a substitute of traditional fuels like coal and firewood. On account of limitations with traditional fuels and the associated health hazards, there is a strong reason to promote the use of LPG as a cooking fuel. Usage of LPG also leads to significant saving on time, which can be used to focus on more productive activities.

Despite the numerous advantages offered by LPG, over 39%² households in the country still do not have access to LPG. The Minister of State (Independent Charge) for Petroleum and Natural Gas, Shri Dharmendra Pradhan, reiterated the goal of scaling up LPG penetration in India. In this context, the government intends to devise a strategy to increase LPG penetration in areas/states where the usage is low, and popularise LPG as a medium of cooking.

Keeping in view the different needs of domestic households, national/state/district-level infrastructure, policy and marketing strategy need to be developed for greater adoption of LPG. In pursuit of scaling up LPG penetration, a primary survey among 1.03 lakh unconnected LPG households was conducted across 13 states with low penetration. This is the largest survey of its kind that has ever been conducted in the Indian energy sector. The survey results are being used as a reference to prepare a comprehensive master plan for increasing LPG penetration in the country in the next three years.

² As on January 1, 2016

3. Research objectives

The survey, commissioned by PPAC, MoPNG, seeks to identify factors that will encourage households using traditional cooking fuels to switch to LPG. The output of the in-depth survey, covering 1.03 lakh unconnected LPG households, encompassing 120 states across 13 districts, will serve as a base for preparing a comprehensive master plan to increase LPG penetration at an all-India level. The scope of work was:

- Map current cooking fuel consumption and amount spent on cooking fuel of unconnected households;
- Identify barriers affecting use of LPG in rural and urban areas, especially in low-usage areas with specific emphasis on price and access barriers;
- Enumerate conversion drivers for LPG usage according to end-users and key influencers such as GPs;
- Estimate price-sensitivity for purchasing new LPG connection and refill;
- Identify priority markets for increasing LPG penetration in the short term;
- Provide direction for formulating interventions that can be addressed through schemes/ policy frameworks to scale up the demand; and
- Outline socio-economic profile of unconnected households.

4. Geographic coverage of sample

To achieve the Central government's plan of significantly increasing LPG penetration, especially with focus on rural areas, within the next three years, a committee comprising officials in the MoPNG and PPAC has been tasked with preparation of a master plan. As part of this objective, a primary survey of households that do not have LPG connections was carried out to gauge the expectations/perceptions of such households regarding the usage of LPG as a cooking fuel. The survey seeks to capture micro-level issues that are hindering LPG penetration and enable the government to design customised solutions to increase penetration of LPG. The procedure adopted to select the districts for the survey was:

- An analysis of state-wise LPG penetration was carried out by PPAC along with MoPNG based on the number of active consumers of oil marketing companies (OMCs) and households, as on June 1, 2015, estimated on the basis of Census 2011. The state-wise LPG penetration as on June 1, 2015 is provided in **Annexure 1**.
- The national average of LPG penetration, based on active connections, was found to be around 57.9%, as on June 1, 2015. It was felt that the survey should be conducted in those states having LPG penetration of less than 50%. However, as the northern region had only one state with LPG penetration less than 50% (i.e. Uttar Pradesh), it was decided that one more state in this region should be included. Accordingly, Rajasthan, having LPG penetration of 58.2%, was selected.
- Rajasthan was also considered keeping in view the topography of the state (arid desert). The Union Territory of Lakshadweep was not included as the number of households was very low.
- Accordingly the following states were shortlisted for the survey:

Region	States	No. of states selected
Northern	Uttar Pradesh; Rajasthan	2
Eastern	Bihar; Jharkhand; Odisha; West Bengal	4
North eastern	Assam; Meghalaya; Nagaland; Tripura	4
Western	Gujarat; Madhya Pradesh; Chhattisgarh	3
Southern	Nil as all states had LPG penetration of more than 68%	0
	All India	13

The LPG penetration in the shortlisted states is summarized below.

Table 1: LPG penetration (as on June 1, 2015) in the shortlisted states

State	LPG penetration %	State	LPG penetration %
Rajasthan	58	Assam	41
Uttar Pradesh	50	Madhya Pradesh	39
Gujarat	48	Bihar	28
West Bengal	46	Chhattisgarh	28
Nagaland	45	Odisha	26
Tripura	41	Jharkhand	25
Meghalaya	22		



The 13 shortlisted states comprised of a total of 387 districts, as on June 2015. It was decided to conduct the survey of unconnected households in around 30% of the districts. Accordingly, the next stage was shortlisting of around 120 districts. It was decided to select these 120 districts, keeping in view the following:

- a) **LPG penetration in the district based on active connections in June 2015** - Districts having lower LPG penetration and having large number of unconnected households were given preference.
- b) **Topography of the area** - It was felt that all types of topographies like hilly areas, plain areas, forest areas and desert areas should get represented. Accordingly, it was ensured that at least one district from every administrative division was included in the survey.
- c) **Demographic profile in terms of percentage of tribal population and scheduled caste population** - It was ensured that at least some areas having high tribal or scheduled caste (SC) population were selected. In addition, left-wing extremism-affected areas were also included.

It was observed that in some of the selected 13 states, new districts had subsequently been carved out of districts existing at the time of conducting Census 2011, and hence household data of Census 2011 was not available for such districts. In such cases, one district out of the two districts, which together constituted a single district at the time of Census 2011, was considered for the survey. The plotting of all districts in the 13 states is provided in **Annexure 2**. The districts finally selected for survey are listed in **Annexure 3**.

In addition, it was decided to conduct interviews of 1,418 GPs (~1% of around 1.35 lakh GPs in these 13 states) so that macro issues could be highlighted, in addition to micro level issues that would emerge from the household surveys. The district-wise list of GPs shortlisted is provided in **Annexure 33**.

Other important parameters considered for sample selection were:

- a) As LPG penetration in urban areas is comparatively higher than in rural areas, it was decided that the survey would include 80% rural and 20% urban households. This would provide insights into issues impacting urban and rural areas separately.
- b) It was decided to adopt a sample size of 1,000 households for districts having household population of above five lakh and 800 households for districts having less than five lakh households.
- c) Further, it was decided to prepare questionnaires in vernacular languages, as spoken in the respective states, and also to use pictorial cards so that the respondents could properly understand the questions and respond correctly. Efforts were made to design the survey questionnaire in a manner so as to bring out various issues in a comprehensive and holistic manner thereby enabling the government to design a customised solution. The state wise LPG penetration spread across India is shown in the following map (heat maps of state wise LPG penetration and rural/urban spread are based on June 1, 2015 numbers).

Figure 8: State-wise LPG penetration map as on 1 June 2015

LPG coverage as per active customers of OMCs

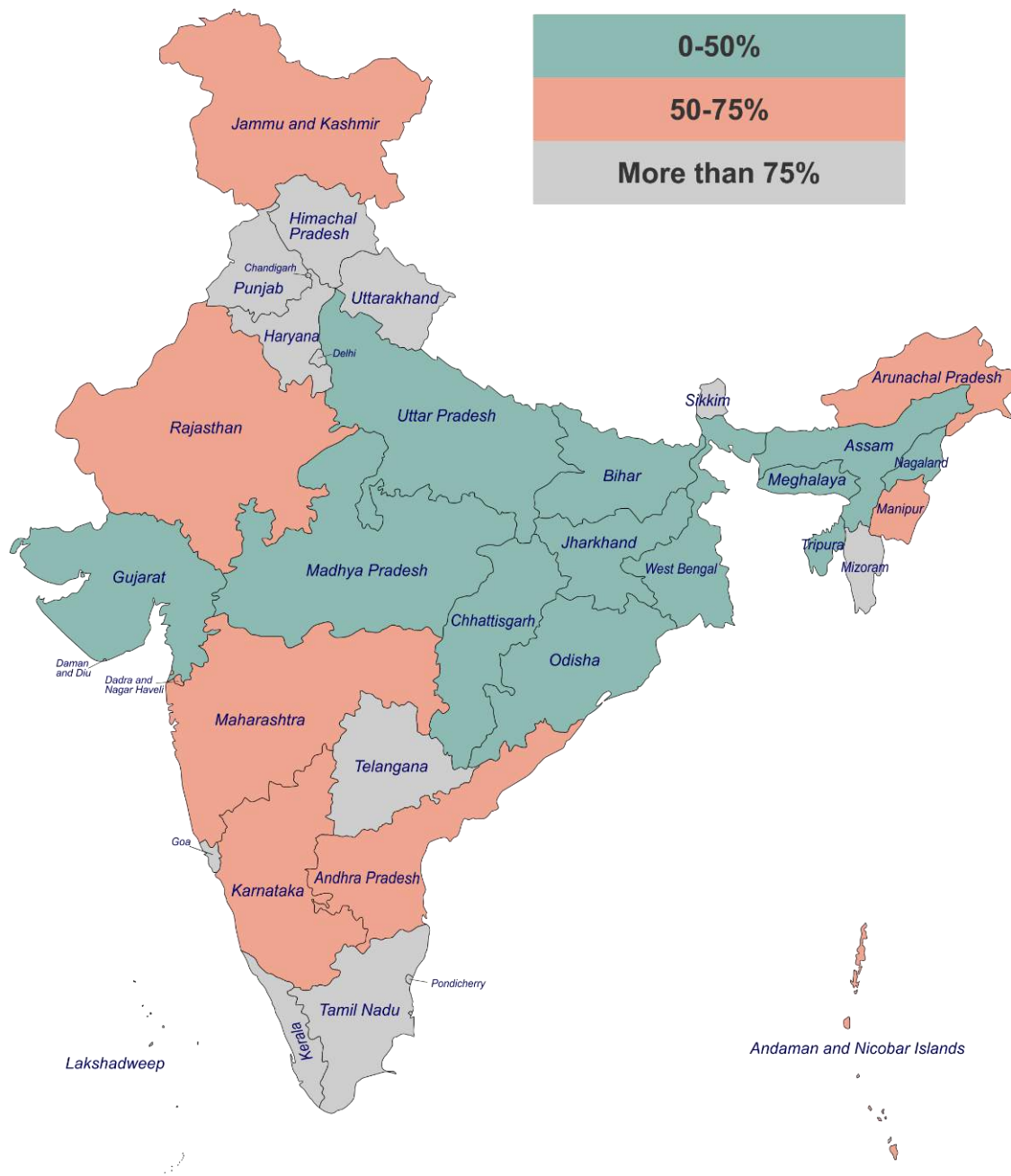
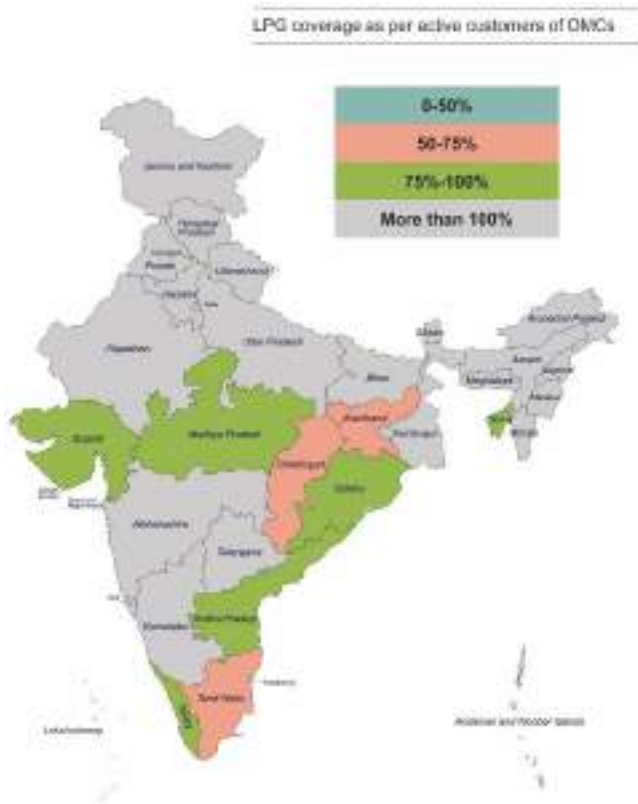
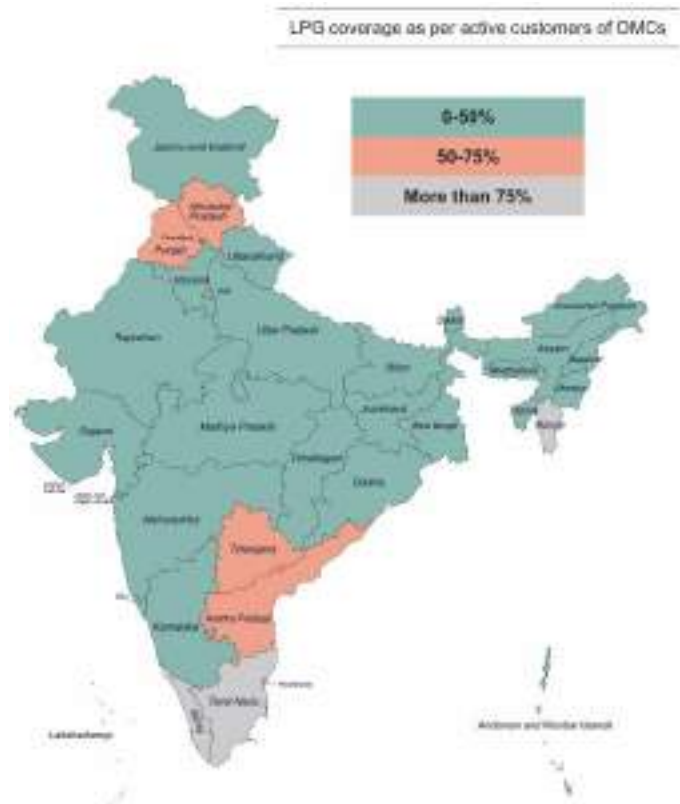


Figure 9: LPG penetration in urban areas



Urban areas

Figure 10: LPG penetration in rural areas



Rural areas

District-wise heat maps for LPG penetration for 13 surveyed states are given in **Annexure 34**.



5. Research methodology

Given the level of detail and data points required, a conclusive research methodology, through structured face-to-face interviews, was used to arrive at statistically-valid estimates for the relevant parameters. Research tools comprising a structured questionnaire for the household and a semi-structured questionnaire for the gram panchayat (GP) were prepared. The questionnaire's design required defining the substantive goals of the survey and identifying the information to be collected. It evolved through several rounds of suggestions, with valuable inputs from senior members of PPAC. Pilot questionnaires were framed to check understanding, flow and ease of translation into different languages.

The following information was captured in the questionnaire:

Household questionnaire

- Demographic information - Age, occupation of chief wage earner of family, education of chief wage earner of family, size of family, monthly household income, type of house, facilities available (electricity, water supply, internet, mobile connection), assets owned (television, two/four wheeler), whether holding bank account, Aadhaar card, ration card, driving license, voter ID card, etc.
- Fuel/s used for cooking, quantity used/month, amount spent/month, type of fuel used - firewood, kerosene, biomass, cow dung cake, coal, etc.
- Awareness of LPG as a cooking fuel, awareness of Pratyaksh Hanstantarit Labh (PAHAL) scheme, awareness of LPG distribution companies.
- Whether applied for LPG connection anytime and reason for delay in obtaining connection.
- Reasons for not applying for LPG connection till now – Not aware of application process, application process is tedious, non-availability of documents required for application, LPG distributor centre is located far away, long waiting time to receive LPG connection, size of cylinder is large -14.2 kg, taste of food cooked in LPG is not palatable, LPG is considered unsafe, high initial cost for application, high recurring cost of cylinder, long waiting time to get refill, lack of knowledge regarding how to use LPG stove.
- Motivators for shifting to LPG - Price at which household is willing to purchase LPG, initial security deposit, recurring cost, financial incentive that would make the household shift to LPG, preferred cylinder size, distance of distributor centre, distribution channel suggested for LPG in respective areas.

Gram panchayat questionnaire

- Village information (village in which GP was located was considered) - Area of village, population of village, number of houses in village - kuccha/pucca, village topography, village connectivity - national/state highway, main district road, closest railway station; average monthly household income, literacy rate of GP area, occupation profile, percentage of backward and scheduled castes and tribes, facilities available in village - schools, colleges, primary health center, hospital, post office, bank, number of households having a valid identity card, distance of PDS center from village.



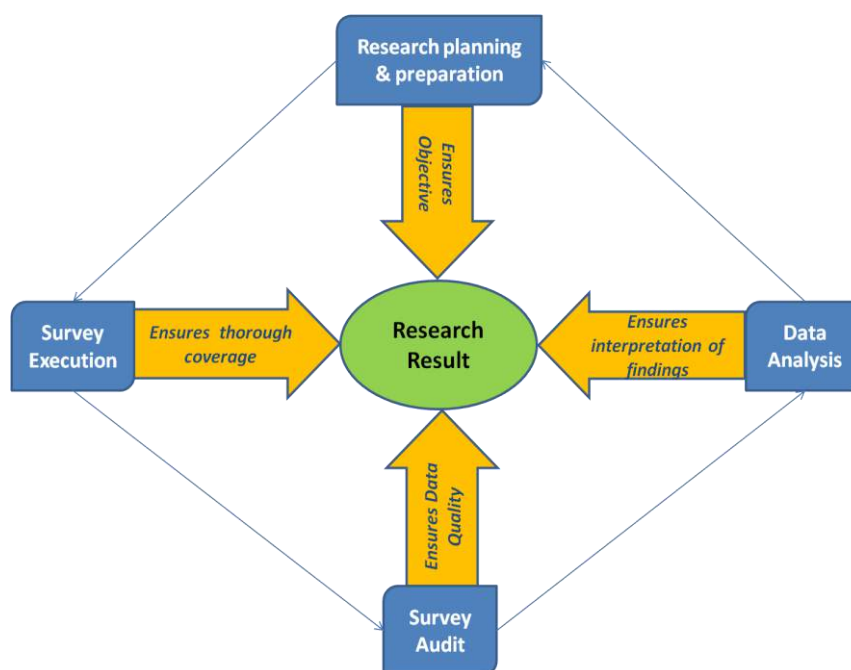
- Preference of fuel used for cooking based on ease of availability, ease of usage, price of fuel, safety of usage, environment friendliness, fuel/s available in the area, fuel/s used most for cooking currently - firewood, kerosene, biomass, cow dung cake, coal, LPG.
- Availability of LPG in GP area, key reasons for non-usage of LPG in GP, non-availability of distributor, long waiting time to get refill, non-availability of documents required for application, taste of food cooked in LPG is not palatable, process of application is tedious, high initial cost for application, high recurring cost of cylinder, size of cylinder is very large -14.2 kg, distributor center is far, satisfied with fuel used currently.
- Time taken to get an LPG cylinder refilled.
- Likely conversion of unconnected households to LPG if all barriers are removed.
- Co-operation and support expected from government to facilitate increased adoption of LPG in the GP, interest to join with neighbouring GPs in undertaking LPG distribution, likelihood of adopting community kitchen at village level, suggestions to increase rate of LPG adoption and usage in the village.

The questionnaires were translated into vernacular languages of all 13 states after a pilot survey. The household questionnaire is enclosed in **Annexure 4** and GP questionnaire in **Annexure 5**. The primary survey was conducted through Prastut Consulting, Gurgaon.

6. Sample survey research process

A scientific process was followed to plan, execute, audit and analyse the findings of the primary and GP surveys.

Figure 11: Research process followed

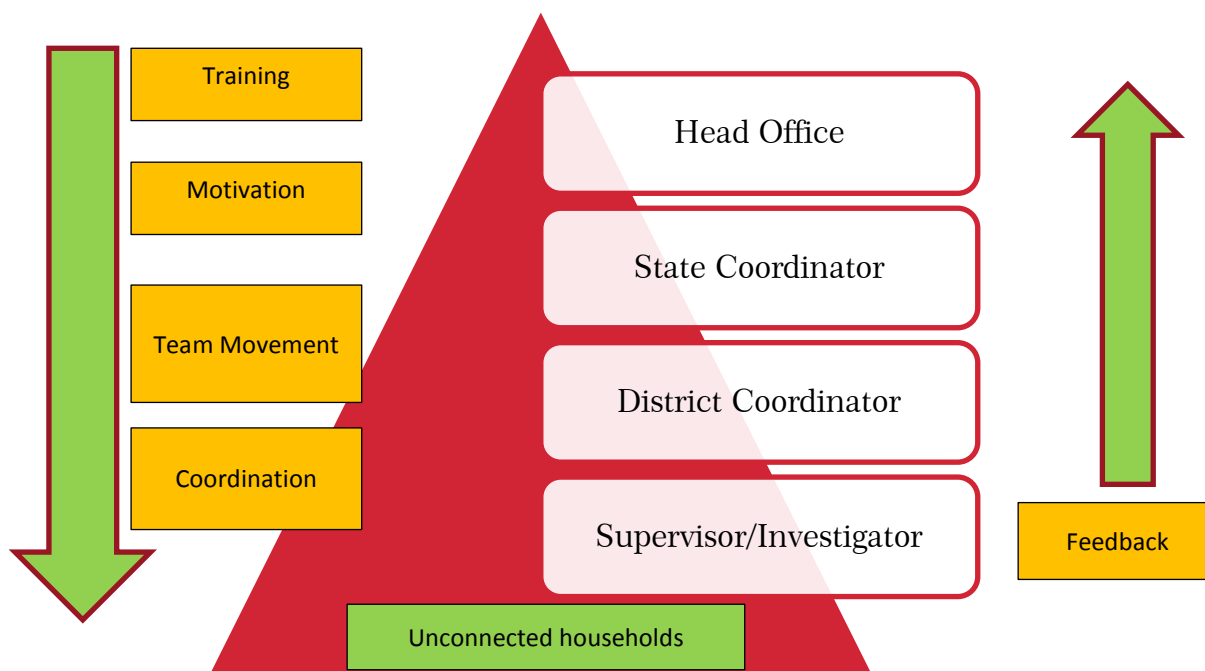


6.1 Research planning and preparation

Critical parameters identified for the success of the survey, in terms of knowledge, skill-set and IT infrastructure required, were:

- Manpower - Team selection, setting up a team reporting structure, team training and deployment.
- Feedback mechanism - Questionnaire quality, team reporting structure, design of reporting formats.
- Setting up a dedicated project coordination cell.

Figure 12: Key steps in research implementation



6.2 Roles and responsibilities

For collection of primary data and ensuring its quality a four-tier system was developed:

State co-ordinator was made responsible at the state level for smooth execution and timely delivery of project activities. The state co-ordinator provided logistics support and training to the district co-ordinator. He/she was also responsible for quality check of the surveyed household forms. The state co-ordinator visited the surveyed area and randomly and systematically checked a few households to verify the collected data.

District co-ordinator was appointed to organise the survey work, train the supervisors and investigators, and liaise with the state co-ordinator. He/she was also responsible to collect information of the village through the GP. Questionnaires were checked for completion of the assigned quota of the blocks and GP, and then dispatched from the states to the head office.

Investigators and supervisors, trained by the district co-ordinators, were acquainted with the importance of the study, apart from the methodology to be used for household selection and method of administering the questionnaire. To supervise the survey work of investigators, four of them were attached to one supervisor for proper guidance and supervision. Emphasis was given on placing responsibility on the person who was acquainted with the local language and had worked in the area for a considerable duration. All responses recorded by the field personnel were checked by a supervisor.

At the research agency (Prastut Consulting) Head Office at Gurgaon, a co-ordination cell was set up to monitor daily reports, regular updating against planned sample at the village/ sub district/ district level, team movement, quality control, training to state co-ordinators, courier tracking and orientation of the teams regarding their role and responsibility. Questionnaires received at the head office were segregated on the basis of state, district, block and GP. Partially-filled questionnaires were discarded. Before data entry, phone calls were made to the respondents and GPs, as per available phone numbers, in order to verify the name of

the respondent as well as responses with respect to fuel used, expenses, LPG usage, intention to subscribe for LPG connection, etc. If all requirements were met, the questionnaires were selected for further analysis.

6.3 Survey execution

122 field investigators were deployed across the 13 states. The team spent cumulatively approximately 6,200 man-days to cover a sample of 1.03 lakh households, with productivity of 12-16 interviews per day, depending on the topography, literacy levels and weather conditions.

Conducting the survey – Procedure adopted

A potential block was identified, after which the approval of the gram sarpanch was obtained for carrying out the survey. His/her views regarding LPG consumption trends in the GP were obtained. Villages for sampling were selected on the basis of suggestion of the gram sarpanch; households in the village were selected according to the sampling criteria using purposive random sampling design. (Respondent selection was based on criteria other than random sampling - whether the respondent was able to understand the questions being asked and whether he/she showed an active interest in participating in the survey, was willing to provide his/her contact details, etc, did not expect any incentives for participation in survey, etc.)

- Only non-LPG user households were considered.
- In each household, the family member who had knowledge of fuel consumption was interviewed.
- Feedback from respondents was obtained through face-to-face interviews.
- Face-to-face interviews also explained the purpose of the survey.
- Each question was explained in detail.
- All responses were noted on the questionnaire.
- Additional observations such as location of kitchen and storage area of traditional fuels in the house were also recorded.



6.4 Survey audits

Supervisors at the head office randomly and systematically checked households to verify the data collected. All responses recorded by field personnel were checked by supervisors. Questionnaires cross-checked by



supervisors were labelled for easy identification. An external review was conducted by the PPAC team in the field in all states during the survey. The questionnaire was carefully designed and the training was rigorously conducted to minimise enumerator bias and keep them from leading on the respondents. Wherever discrepancies were observed in the data, the survey company was asked to either cross-verify the information or redo the survey.

6.5 Data analysis

Apart from capturing the socio-economic scenario, the survey data was analysed district-wise to capture key insights across issues that have to be tackled to increase LPG penetration, including evaluating price sensitivity of households to LPG purchase, awareness of the usefulness of LPG, presence and effectiveness of the LPG distribution network, etc. A thorough quality check of the data for incorrect recording of observations and missing values was carried out before the data was analysed. These issues were also analysed with respect to:

- Gender
- Region - rural and urban
- Topography - plains, desert and hilly areas
- Naxalite and non-naxalite areas
- Forest and non-forest areas

All references and analysis was in regard to the surveyed population and unless otherwise mentioned, the figures and assessment refer to the surveyed population. The term 'all' in graphs and figures refers to average or cumulative results from all 13 surveyed states.

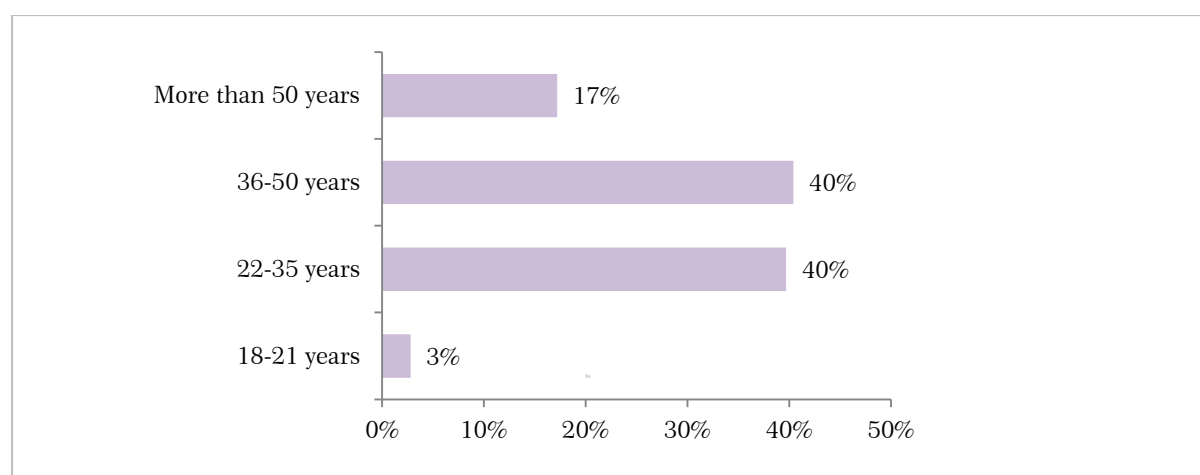
7. Socio-economic profile of unconnected households

The sample comprised 87% male and 13% female respondents, mostly chief wage earners (CWEs). In case CWEs were unavailable, family members with knowledge of fuel consumption were interviewed. Indicators such as demographics, living conditions and economic parameters were used to assess the socio-economic profile of the unconnected households.

7.1 Demographic parameters

Young (22-35 years) and middle age (36-50 years) groups together formed 80% of the total respondents, in both rural and urban areas. It is assumed that these age groups might aspire to shift to a cleaner fuel.

Figure 13: Age distribution of surveyed population

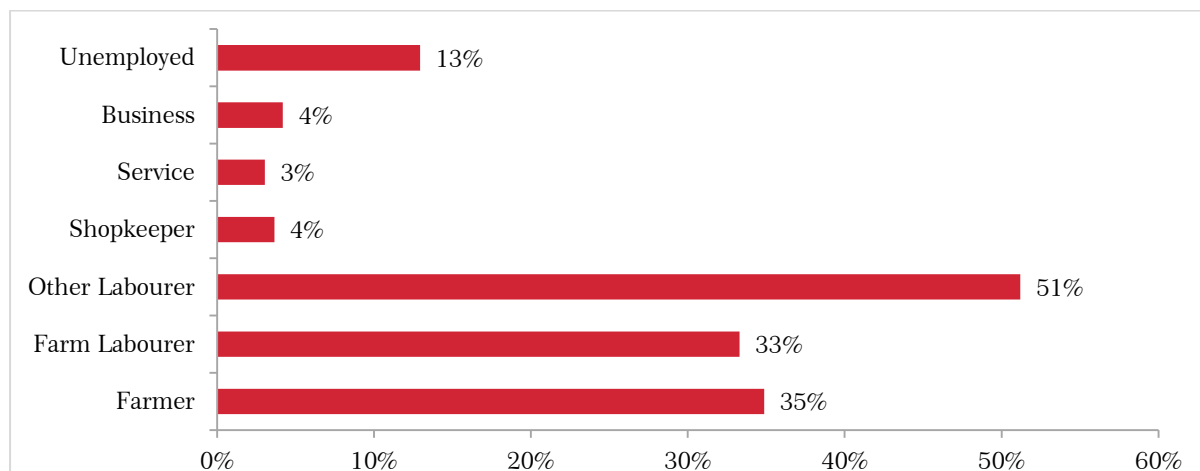


State-wise details are given in **Annexure 6**.

7.2 Occupation of CWEs

CWEs are primarily employed as farmers, farm labourers or other labourers. It was observed that respondents had more than one occupation. The unemployment rate among unconnected households is 13%.

Figure 14: Occupation distribution of surveyed population

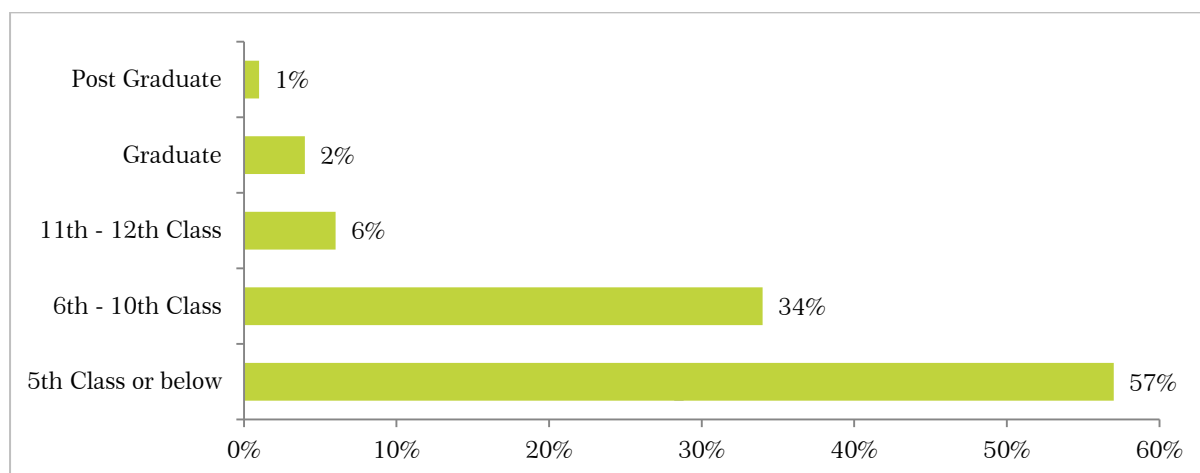


Farming is the predominant occupation in Nagaland and Meghalaya, while farm-related labour dominate the occupation profile in West Bengal, Madhya Pradesh and Chhattisgarh for the surveyed population. Seasonal unemployment is highest in Jharkhand (33%), followed by Rajasthan (28%) and Bihar (25%). State-wise details are given in **Annexure 7**.

7.3 Educational background of CWEs

Nearly 57% of the surveyed population had studied only up to the primary level. The education level trends are similar across rural and urban areas.

Figure 15: Education level of surveyed population



Awareness about LPG and its application process is comparatively lower among respondents with lower education levels. Around 21% respondents with graduation and above level of education are not aware of the LPG application process as compared with nearly 27% of respondents with education up to Class 12. This trend is more prominent in Rajasthan, Bihar, Odisha, Gujarat and Jharkhand. State-wise details are given in **Annexure 8**.

7.4 Family size

The average family size among the surveyed households is more than 5 members: 1-2 male adults, 1-2 female adults, 1-2 male children and 1-2 female children. Tripura and Odisha have smaller families with 4-5 members, compared with Meghalaya and Uttar Pradesh, where the average family size is 6-7. State-wise details are given in **Annexure 9**.

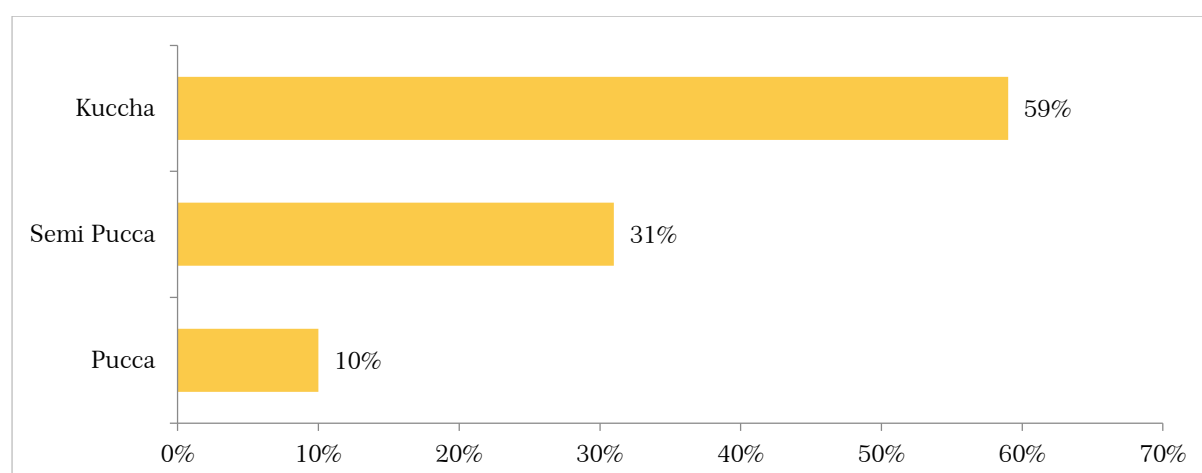
7.5 Living conditions

7.5.1 Type of dwelling unit

Majority of the unconnected households stay in *kuccha* houses; only 10% stay in *pucca* houses. *Pucca* households are likely to be more receptive to using LPG as cooking fuel since they typically have a closed kitchen. The trend is found to be similar across rural and urban areas.



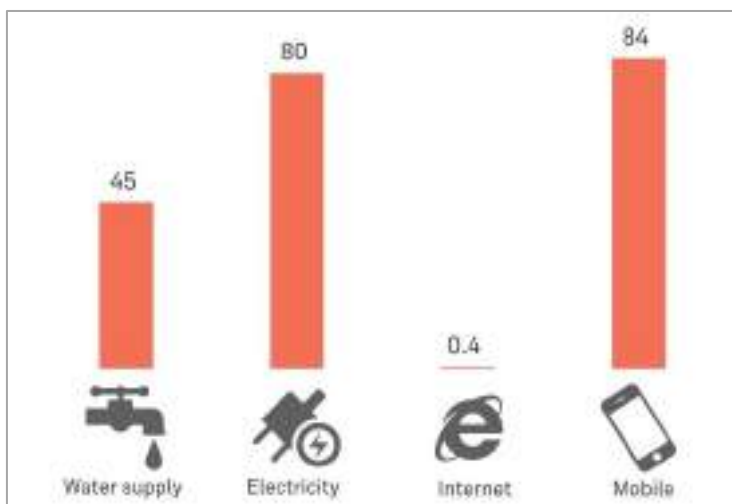
Figure 16: Type of house



Uttar Pradesh, Bihar and Odisha have higher percentage of *pucca* and *semi-pucca* houses, while states with more than 60% of *kuccha* households were Jharkhand, Assam, Madhya Pradesh, Chhattisgarh, Rajasthan, and Gujarat. State-wise details are given in **Annexure 10**.

7.6 Facilities available – Electricity, water supply, internet and mobile connection

Figure 17: Facilities available (% of households confirming availability)



Basic living amenities such as electricity and water supply are available in 80% and 45% households, respectively. Interestingly, penetration of mobile phones is significantly high across rural and urban areas together at nearly 84%. Thus, the mobile network can be an effective channel to create awareness about LPG among the unconnected households. State-wise details are given in **Annexure 11**.

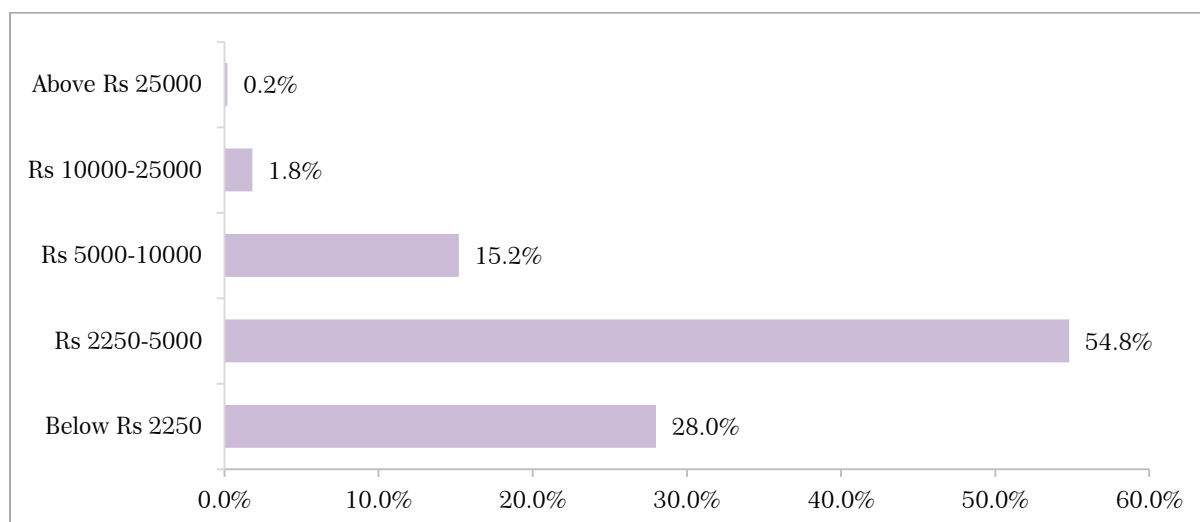
7.7 Economic parameters

7.7.1 Monthly household income

Almost 99.3% respondents provided information about their monthly household income; the rest did not respond. About 28% of the unconnected households belong to the below poverty line (BPL) category (earning less than Rs 2,250/month), with 29% and 22% BPL households in rural and urban areas, respectively.

Chhattisgarh (52%), Nagaland (39%), Madhya Pradesh (37%) and Uttar Pradesh (34%) have higher percentage of BPL households. High-income households of Rs 10,000-25,000 are most prevalent in Assam (10%) and Meghalaya (8%); the propensity to upgrade to LPG is higher in this profile. State-wise details are given in **Annexure 12**.

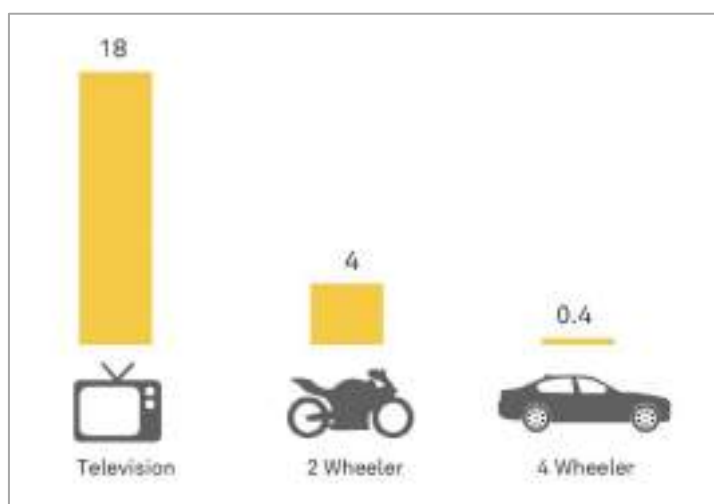
Figure 18: Monthly household income



7.7.2 Assets owned - TV, two/four-wheeler

Non-availability of personal vehicles to transport LPG cylinders could be a hindrance to LPG penetration. Only 4% of the respondents have a two-wheeler. The same pattern is seen across rural and urban areas. Odisha (9%), Rajasthan (6%), West Bengal (6%) and Gujarat (5%) have comparatively higher two-wheeler vehicle ownership; therefore, it is comparatively easier to transport LPG cylinders in these states.

Figure 19: Assets owned by households (in %)

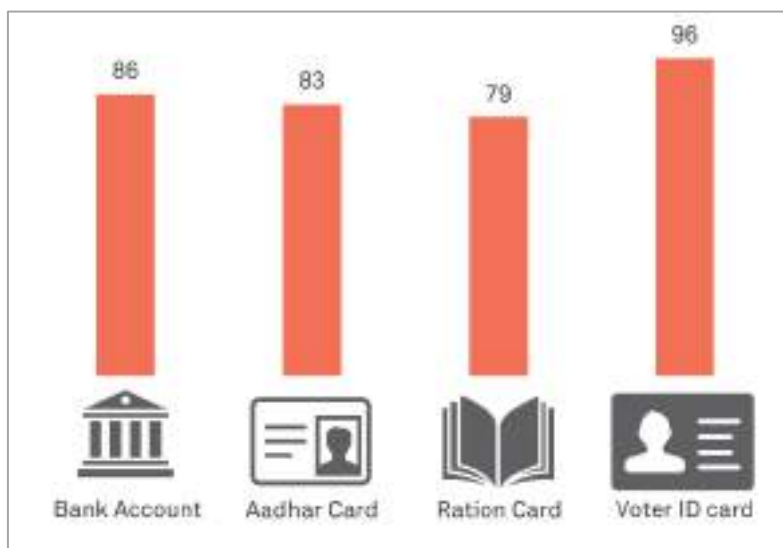


Tripura (59%), West Bengal (39%), Chhattisgarh (38%), Meghalaya (34%) and Odisha (31%) have a higher number of households with television sets. Thus, television can be used as a medium for increasing awareness about various initiatives undertaken by the government regarding LPG. State-wise details are given in **Annexure 13**.

7.7.3 Availability of bank account, Aadhaar card, ration card, driving licence and voter ID card

A vast majority of the surveyed households have the government documents required for applying for LPG connection, including Aadhaar card, ration card, voter ID card, driving licence and bank account. Thus, unavailability of documents for applying for LPG connection, may not be a concern.

Figure 20: Documents owned by households (in %)



Almost all households in all states have voter ID cards. States with very low availability of Aadhaar cards are Assam (1%) and Meghalaya (1%). Nagaland has the lowest number of bank account holders - 42%. The number of ration card holders is lower in Nagaland (2%), Meghalaya (31%) and Odisha (54%). State-wise details are given in **Annexure 14**.

8. Fuel consumption assessment

One of the main objectives of the primary survey is to ascertain the fuel consumption pattern in the 13 states where LPG penetration is low. The analysis presents the “as-is” condition of the respondents, which forms the basis for formulating strategies to convert them into LPG users.

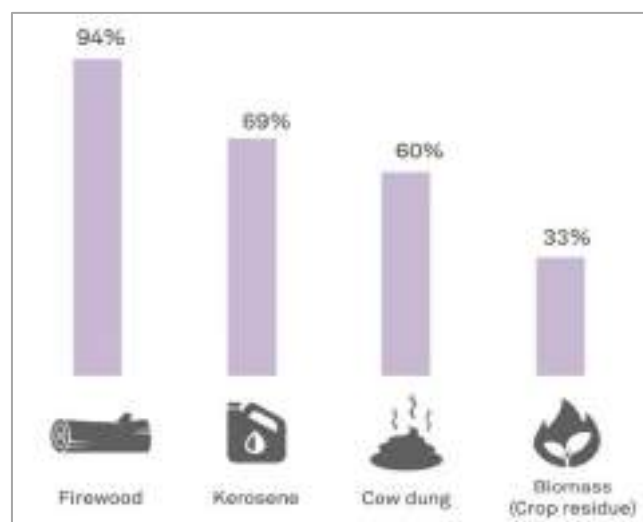


The survey covered the type and quantity of fuels used and the amount spent.

8.1 Fuels used for cooking

Use of firewood as cooking fuel is found to be significantly high among all the surveyed states -94% households. Other fuels used include kerosene (69% households), cow dung cakes (60% households) and biomass (33% households). Most households use more than one fuel.

Figure 21: Major fuels used for cooking



Firewood

The usage of firewood is lower in Bihar (77%) as compared to other states where it is over 90%. Some of the salient features of firewood usage are:



- There is no significant difference in the usage of firewood as fuel between unconnected LPG households in urban and rural areas.
- Shortage of wood was highlighted by households in certain districts of Uttar Pradesh (Banda and Chitrakoot) and Bihar (Aurangabad, Banka, Gaya, Jamui and Nalanda). This was further confirmed during the GP survey.
- Kannauj, which uses biomass as fuel for cooking, falls in a plain non-forest area in Uttar Pradesh characterized by 90% farming population. The principal crops are potatoes, wheat and maize which provide easy access to biomass for fuel. Cow dung cakes are found in abundance due to a sizable population of livestock in the area. Chitrakoot is a hilly dense forest area resulting in difficulty in accessibility and households prefer to use biomass from mustard farming or cow dung cakes. Households in Banda district located adjacent to Chitrakoot also exhibit similar behaviour.
- Aurangabad, Banka, Gaya and Jamui are covered by dense forests that are unsafe for firewood collection on account of wild animals and insurgent activities. In Nalanda, cow dung cakes are preferred due to their easy availability.
- Firewood is used as cooking fuel in all the surveyed states, except Nagaland, where it is also used for lighting.
- Easy availability of forest wood and cow dung has been cited as a barrier to adopt LPG as cooking fuel in Madhya Pradesh. In Rajasthan, good quality wood (mainly babul wood) is easily available for cooking purpose, which might be a barrier to shift to LPG. In Chhattisgarh, Assam, and Tripura the availability of plenty of wood has been cited as an important barrier for not switching over to LPG. In Odisha too, wood being available free of cost in large quantity results in low inclination towards using LPG. Firewood is easily available in the North eastern states of Meghalaya, Tripura, and Nagaland and its usage to not only for cooking but also for heating purposes, resulting in firewood being their primary source for energy.

Kerosene

Kerosene usage for cooking in the states of Meghalaya (5%), Nagaland (23%), Chhattisgarh (48%), West Bengal (52%) and Rajasthan (59%) is lower when compared to the other states covered in the survey. The salient features of kerosene usage are:

- No significant difference is observed in the usage of kerosene as fuel between unconnected LPG households in urban and rural households.
- Usage of kerosene in households is high across all states except Nagaland and Meghalaya due to limited availability of ration cards. The gram panchayat members mentioned easy availability of kerosene in Uttar Pradesh, Assam, Odisha and Gujarat as reason for its high usage while gram panchayat members from Rajasthan, Meghalaya and Nagaland cited limited availability as the cause for low usage.
- Kerosene is the principal fuel used for lighting, i.e., to ignite firewood or cow dung cakes. It is also used for other purposes such as running water pumps.

Biomass

Biomass utilisation for the purpose of cooking in the states of West Bengal (63%), Tripura (63%) and Uttar Pradesh (57%) is higher than rest of the states surveyed. Usage of biomass is negligible in the North eastern states of Assam (7%), Meghalaya (1%) and Nagaland (0%).



Salient features of biomass usage are discussed below:

- Nearly 35.7% of rural households use biomass due to its higher and easy availability. The number drops significantly to 23.3% for urban centres.
- Usage of biomass is highest in West Bengal followed by Tripura, Uttar Pradesh, Bihar and Rajasthan. However, it is significantly low in Assam, Meghalaya and Nagaland on account of non-availability. This is corroborated by the gram panchayat members of these states confirming that biomass is abundant in Rajasthan and West Bengal and not available at all in Nagaland and Meghalaya.
- Moderate usage of biomass is seen in Jharkhand, Odisha, Chhattisgarh, Madhya Pradesh and Gujarat.
- Biomass is used only for cooking purposes in all the surveyed states, except West Bengal, where it is also used for lighting.
- Over 90% of households use biomass as fuel in Cooch Behar, Murshidabad and East Medinipur districts of West Bengal due to low income and large family sizes; also, firewood is insufficient and biomass from paddy is available in plenty.
- Dausa, Karauli, Rajsamand, Tonk and Dholpur in Rajasthan also reported 70% and above usage of biomass due to abundant availability from mini millet (bajra) and mustard farming.
- Azamgarh, Sant Ravidas Nagar, Jaunpur and Chitrakoot are high biomass consumption areas in Uttar Pradesh; these are predominantly agricultural belts with easy availability of biomass from sugarcane, mustard and potato.
- Begusarai, Madhubani and Sitamarhi in Bihar cultivate multiple crops including lentils and maize, which provide biomass for use as fuel.
- South Tripura has ample biomass from paddy farming; both biomass and firewood are used equally.

Cow dung cakes

Cow dung cakes are preferred by households in the states of Madhya Pradesh, Bihar, Uttar Pradesh, Rajasthan and West Bengal. Negligible to low usage of cow dung cakes is present in the North eastern states of Nagaland, Tripura, Meghalaya and Assam. The salient features of usage of cow dung cakes are:

- A significant 62% of unconnected rural households use cow dung cakes as fuel, whereas the number is only around 51% for urban households. Cow dung cakes are easily available in rural areas and hence used widely.
- Cow dung cakes are extensively used in Uttar Pradesh, Bihar, West Bengal, Chhattisgarh and Madhya Pradesh. The GP survey also validates high availability of cow dung in Uttar Pradesh, Bihar, West Bengal and Madhya Pradesh.
- Negligible to low usage of cow dung cakes is seen in Nagaland, Tripura, Meghalaya, Assam and Odisha.
- According to GP members, abundant availability of cow dung cakes at very low rates in Uttar Pradesh acts as a strong barrier to adopting LPG. All districts in Uttar Pradesh exhibit high usage of cow dung cakes, except Bahraich, Balrampur, Lalitpur and Rampur, where firewood is easily available from forests.
- All districts in Bihar, West Bengal and Madhya Pradesh show high usage of cow dung cakes alongside firewood. In Chhattisgarh, all districts show high usage of cow dung cakes, except tribal areas such as Bastar, Dantewada and Surguja, where cow dung is mixed with paddy husk, red soil and beeswax to produce wonderful artefacts.
- In all the surveyed states, cow dung cakes are used only as cooking fuel.

Coal and charcoal

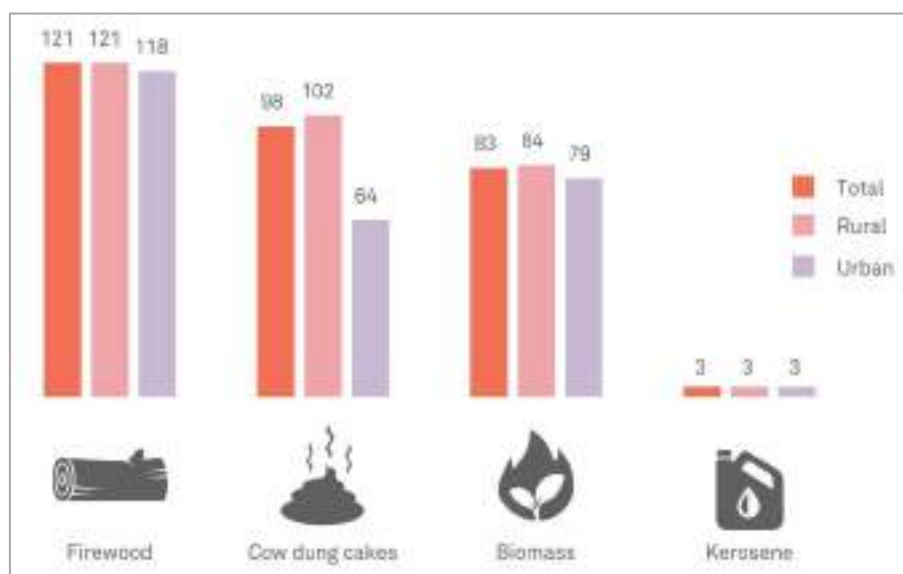
Usage of charcoal as fuel is minimal in the surveyed states, except Jharkhand, where 23% households use it as fuel for domestic purposes. 65% of unconnected households in Pakur district in Jharkhand use coal besides firewood due to proximity to Pachwara coal mines.

State-wise details are given in **Annexure 15**.

8.2 Quantity of fuel used for cooking per month

Firewood and cow dung cakes are the primary fuels used for cooking. On an average, households use approximately 121 kg/month and 98 kg/month of these fuels, respectively. Consumption of biomass is around 83 kg/month, while that of kerosene is estimated at 3 litre/month (mainly to light firewood).

Figure 22: Fuel consumption (units/month)



Firewood, cow dung and biomass are stated in kilograms, while kerosene is stated in litres in the above diagram. State-wise details are given in **Annexure 16**.

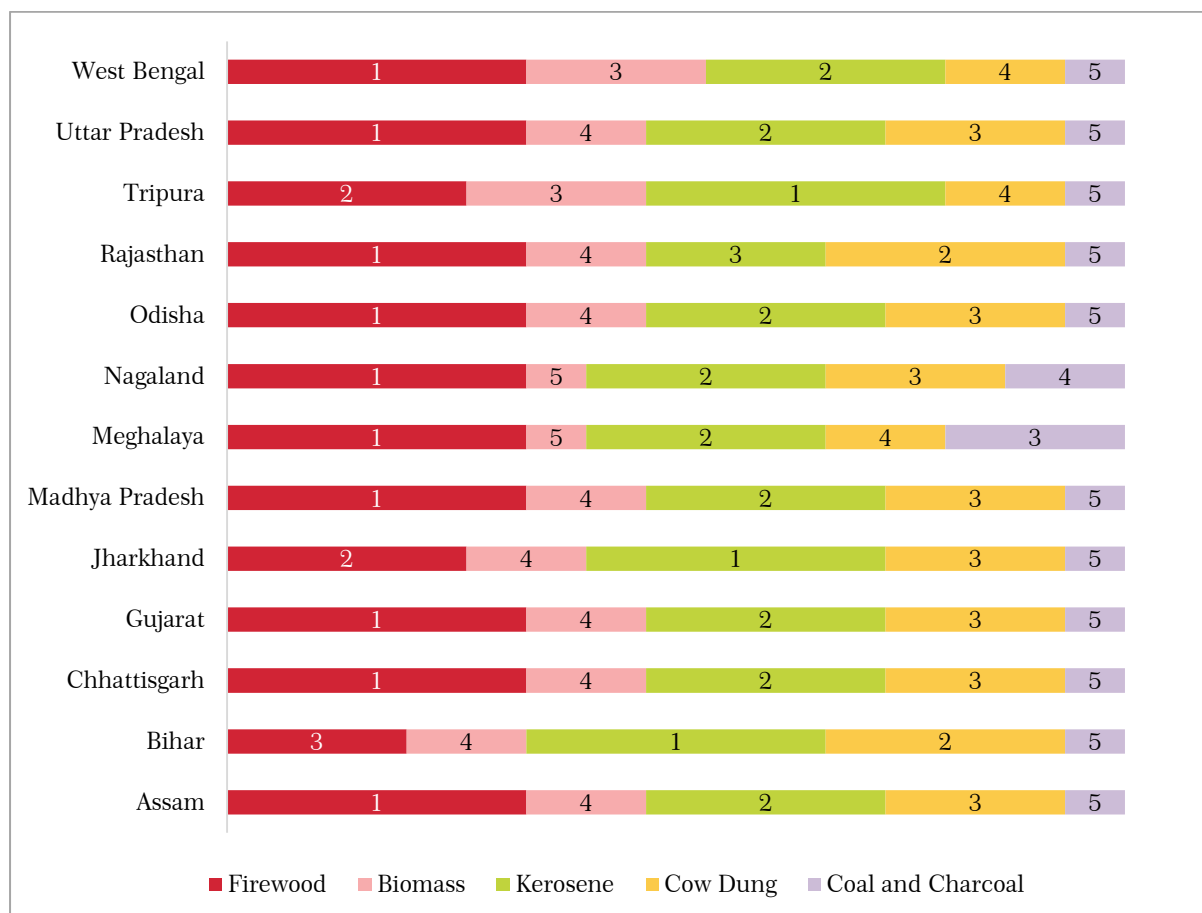
Salient features of fuel consumption are discussed below:

Firewood

- No substantial difference is observed in the quantity consumed between rural (121 kg/month) and urban (118 kg/month) households.
- Approximately 100-145 kg/month of firewood is used per household across all states, except Nagaland (170 kg/month, where firewood is easily available, but other fuels such as biomass and cow dung cakes are not available) and Jharkhand (150 kg/month, where firewood is easily available from dense forests).
- Districts located in dense forest areas and with high tribal population have reported high firewood consumption - more than 150 kg/month on average. Notable among these are:
 - ◆ Barmer in Rajasthan (low availability of cow dung cakes and biomass in desert area)
 - ◆ Bahraich, Balrampur, Hardoi, Lalitpur and Maharajganj in Uttar Pradesh (predominantly forest areas)
 - ◆ East Champaran in Bihar (dominated by magnolia forests)
 - ◆ Mon, Kiphire and Peren in Nagaland (dense forest, hilly and tribal areas)
 - ◆ West Garo Hills in Meghalaya (hilly, forest and tribal areas)
 - ◆ Dhubri and Hailakandi in Assam (timber reserve forest areas)
 - ◆ Cooch Behar and Jalpaiguri in West Bengal (forest areas and large family sizes)
 - ◆ Chatra, Deoghar, Seraikela Kharsawan, Simdega, West Singhbhum and Latehar in Jharkhand (more than 60% forest coverage or tribal areas)
 - ◆ Gajapati and Mayurbhanj in Odisha (forest and tribal areas)

- ◆ Dantewada in Chhattisgarh (hilly, forest and tribal areas)
- ◆ Narmada and Panchmahal in Gujarat (tribal, forest and hilly areas)

Figure 23: Ranking of preferred fuels in the surveyed states (1 - highest rank, 5 - lowest rank)



The figure shown above indicates preference of fuels (including all the five fuels) across the surveyed states. These preferences of fuel cited as presented in the figure above by the households are for cooking and lighting purpose. The choice of preferred fuels used for cooking is firewood across all the surveyed states excluding Bihar where cow dung has been noted as the preferred fuel for cooking.

Cow dung

- There is a significant difference in the average quantity of fuel consumed by rural and urban households - 102 kg/month and 64 kg/month, respectively.
- Jharkhand has the highest average consumption of cow dung cakes at 132 kg/month; lowest is in Tripura - 20 kg/month.
- Districts with high cow dung cake consumption are Chatra (251kg/month), West Singhbhum (181kg/month) and Saraikela Kharsawan (158kg/month) in Jharkhand, Karauli (171kg/month), Baran (149 kg/month) and Dholpur (145 kg/month) in Rajasthan; Hardoi (134 kg/month) and Kannauj (171 kg/month) in Uttar Pradesh; Aurangabad (150 kg/month), Banka (151 kg/month), Gaya (147 kg/month), Bhabua (154 kg/month) and Nalanda (149 kg/month) in Bihar; Cooch Behar (170 kg/month) and Murshidabad (147 kg/month) in West Bengal; Mayurbhanj (178kg/month) in Odisha; Ashoknagar (178 kg/month) and Rewa (145 kg/month) in Madhya Pradesh and Kabirdham(132kg/month) in Chhattisgarh.

Biomass

- Use of biomass in Nagaland is negligible. Among the surveyed states, West Bengal reported the highest biomass consumption of 125 kg/month and Meghalaya, lowest biomass consumption of 33 kg/month.
- The high biomass consumption centres are East Medinipur (137 kg/month) and Murshidabad (201 kg/month) in West Bengal, due to low income, large family sizes and abundant availability of biomass from paddy farming.

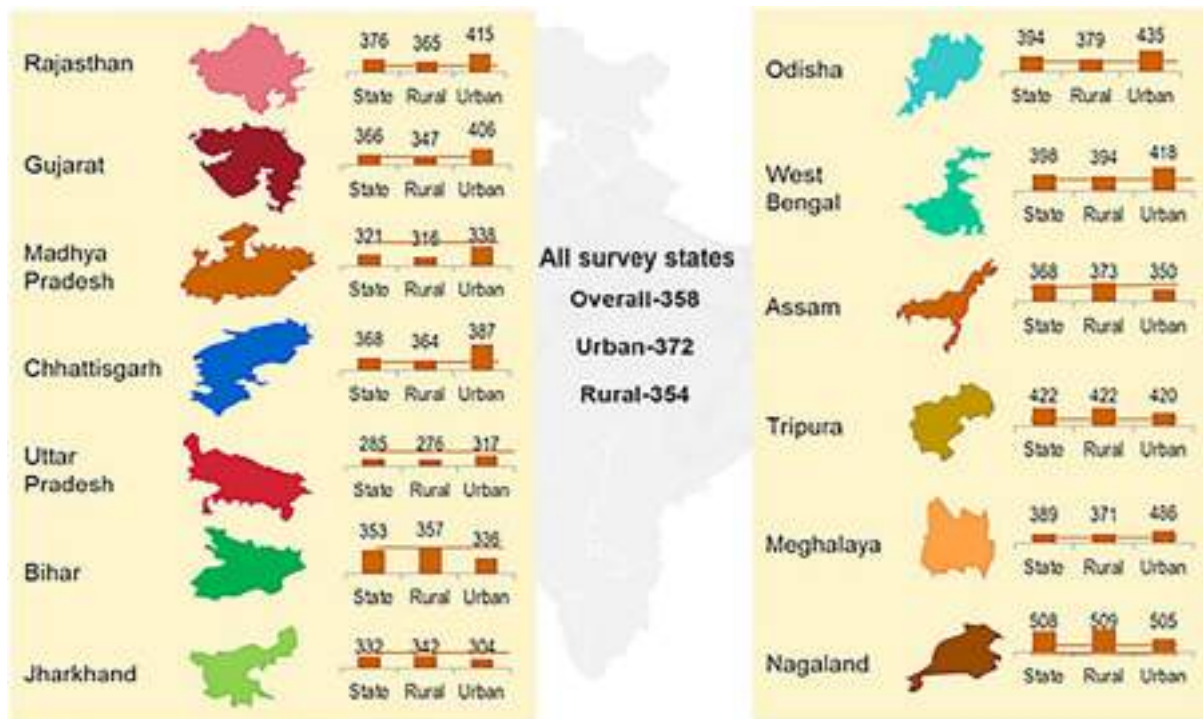
Kerosene

- Quantity of kerosene used per month is more than or equal to 4 litres in areas such as Chirang, Dhemaji, Dhubri, Golaghat, Hailakandi, Karbi Anglong and Nagaon in Assam; Bilaspur in Chhattisgarh; Banaskantha, Dahod, Kheda, Narmada, Panchmahal and Surendranagar in Gujarat; Chatra and Khunti in Jharkhand ; East Nimar in Madhya Pradesh; Mon in Nagaland; Kalahandi in Odisha; Kasganj (Kanshi Ram Nagar), Lalitpur and Maharajganj in Uttar Pradesh; 24 Parganas, Medinipur East and Purulia in West Bengal.
- Kerosene is available as a substitute in these areas during heavy rains when usage of other fuels is not possible.

8.3 Monthly expenses on cooking fuel

The monthly expenses are computed considering the three primary fuels used for cooking -including firewood, biomass and/or cow dung - and for households that procure at least one of these fuels from the open market at a price. A total of 67,437 (or ~65%) households have cited that at least one of the three fuels is procured from the open market. The fuel-wise analysis is discussed below:

Figure 24: Expenditure on three primary cooking fuels (Rs/month)



Firewood

Households using firewood for cooking, on an average, consume 121 kg/month and spend approximately Rs 343/month for it (taking into consideration only those who buy from the market). Due to the low availability of other fuels, the expenses on firewood are very high – Rs 508/month in Nagaland (since it is the only fuel available), Rs 421/month in Tripura, Rs 389/month in Meghalaya, Rs 382/month in Gujarat and Rs 371/month in Odisha. In Uttar Pradesh, expenses on firewood are somewhat lower at Rs 276/month, since most households do not have to buy it.

Biomass

Households using biomass for cooking, on an average, consume 83 kg/month and spend approximately Rs 121/month for it (taking into consideration only those who buy from the market). The monthly expenses on biomass do not show a marked variation across states, except in Bihar and Madhya Pradesh, where it is at least 40% higher than the national average.

Cow dung

Households using cow dung cakes for cooking, on an average, consume 98 kg/month and spend approximately Rs 118/month for it (taking into consideration only those who buy from the market).

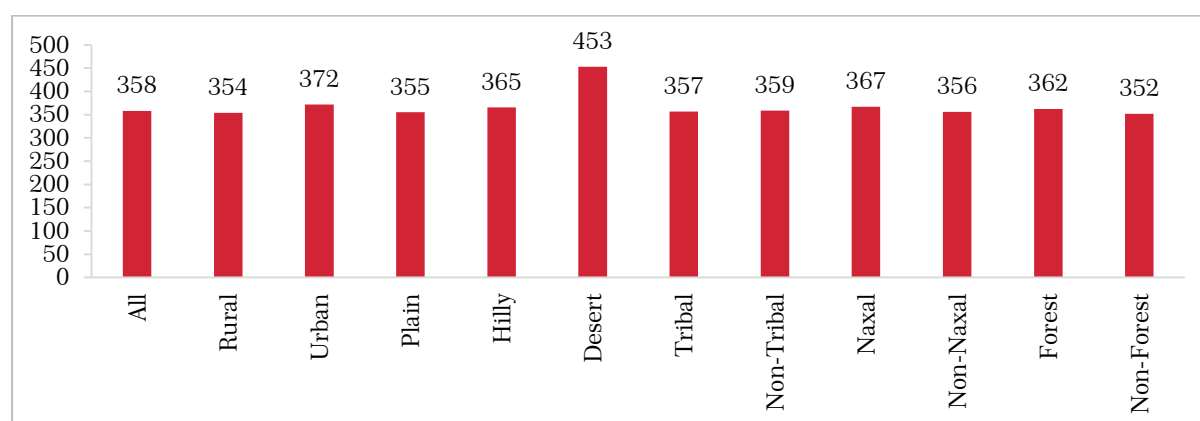
Kerosene

Households using kerosene for cooking, on an average, consume 3 litre/month and spend approximately Rs 72/month for it (taking into consideration only those who buy from the PDS/open market). The amount spent on kerosene varies with consumption, with Gujarat spending the highest at Rs 115/month and West Bengal, the lowest at Rs 45/month.

Coal and charcoal

Households using coal and charcoal for cooking, on an average, consume 26 kg/month and spend approximately Rs 208/month for it (taking into consideration only those who buy from the open market). The amount spent on charcoal and coal also depends on the quantity consumed. The highest amount is spent in Bihar and Jharkhand.

Figure 25: Monthly expenses on cooking fuels (Rs/month)



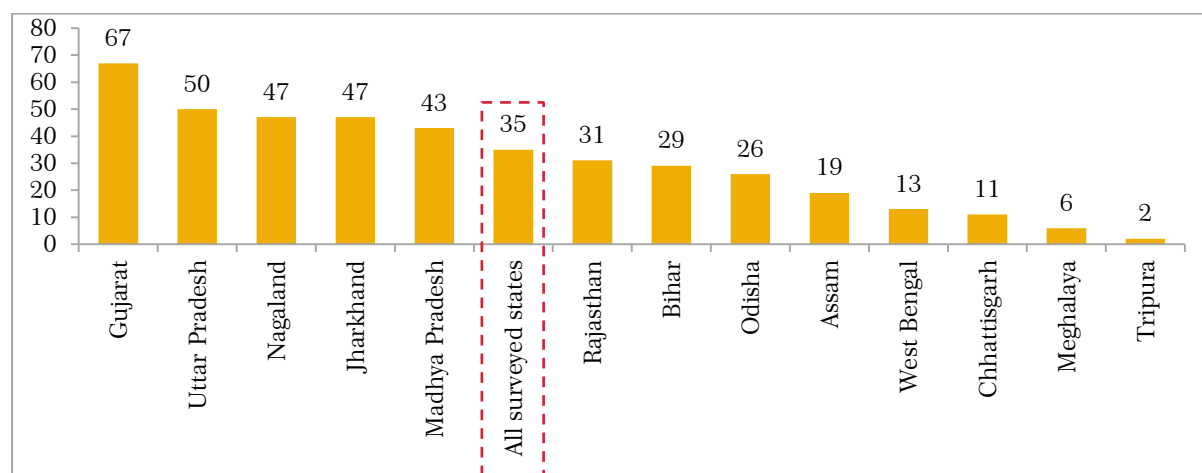
(“All” indicates average of all the surveyed states.)

The summary of fuel-wise spending on cooking across the surveyed states is presented in **Annexure 17B** and **Annexure 18**.

8.4 Percentage of unconnected households availing free cooking fuel

Firewood, biomass and cow dung cakes are used in varying quantities by unconnected households. While biomass and cow dung are largely available for free from agriculture waste and livestock, firewood is purchased from the open market in areas where it is not available or not accessible or firewood collection from forests is restricted by the forest department.

Figure 26: Unconnected households availing alternate fuels for free (figures in percentage)



Some of important observations are:

- 35% households procure all the three fuels free of cost. This is 37% in rural areas and 25% in urban areas.
- 34.9% unconnected households procure firewood used for cooking free, 87.5% households procure biomass free while 76.3% households procure cow dung cakes free.
- Significant differences exist between rural and urban areas with respect to the usage of free firewood - 37.5% and 24.1% households, respectively - even though almost equal number of households use firewood in both areas.
- No significant difference is observed between urban and rural areas with respect to usage of free biomass and cow dung cakes.

Table 2: Percentage of cooking fuels procured for free (figures in percentage)

Fuel access – Free or Paid		All	Region	
			Rural	Urban
Firewood	Free	34.9	37.5	24.1
	Paid	65.1	62.5	75.9
Biomass	Free	87.5	87.1	89.7
	Paid	12.5	12.9	10.3
Cow dung	Free	76.3	76.3	76.4
	Paid	23.7	23.7	23.6

Fuel access – Free or Paid		All	Region	
			Rural	Urban
All 3 fuels	Free (All)	34.5	36.7	24.8
	Paid (At least for one)	65.5	63.3	75.2

The availability of firewood for free is seemingly one the biggest barriers preventing large-scale penetration of LPG, especially in forest and tribal areas. Gujarat, Uttar Pradesh, Nagaland, Jharkhand and Madhya Pradesh are the top five states where 40% of cooking fuels are procured for free. The state-wise summary with respect to percentage of cooking fuel being procured free of cost is shown in the table below:

Table 3: State-wise cooking fuels procured for free (figures in percentage)

State	Firewood		Biomass		Cow dung		All 3 fuels	
	Free	Paid	Free	Paid	Free	Paid	Free	Paid
All	34.9	65.1	87.5	12.5	76.3	23.7	34.5	65.5
Rajasthan	32.5	67.5	97.7	2.3	84.2	15.8	31.3	68.7
Uttar Pradesh	47.8	52.2	99.1	0.9	89.9	10.1	49.9	50.1
Bihar	18.1	81.9	90.6	9.4	70.2	29.8	28.8	71.2
Nagaland	47.3	52.7	NA	NA	97.9	2.1	47.3	52.7
Tripura	1.6	98.4	96.0	4.0	100.0	0.0	1.7	98.3
Meghalaya	6.1	93.9	100.0	0.0	95.3	4.7	6.0	94.0
Assam	19.2	80.8	95.9	4.1	98.3	1.7	19.1	80.9
West Bengal	22.4	77.6	45.8	54.2	44.2	55.8	12.8	87.2
Jharkhand	48.7	51.3	96.7	3.3	87.8	12.2	46.7	53.3
Odisha	26.3	73.7	48.7	51.3	55.8	44.2	26.1	73.9
Chhattisgarh	13.5	86.5	91.0	9.0	53.8	46.2	11.3	88.7
Madhya Pradesh	50.1	49.9	94.8	5.2	77.9	22.1	43.1	56.9
Gujarat	69.2	30.8	98.8	1.2	90.8	9.2	66.9	33.1

Some critical state-wise observations are:

- Uttar Pradesh - 12 out of the 22 districts surveyed, including Sonbhadra, Mirzapur, Ambedkar Nagar, Ghazipur, Rampur, Azamgarh, Maharajganj, Banda, Chitrakoot, Hardoi, Lakhimpur and Sultanpur, fall in forest areas, which provide easy access to firewood, resulting in 47.8% free procurement
- Nagaland - All the 4 districts surveyed - Peren, Mon, Wokha and Kiphire - fall in forest areas, with high tribal population and weak economic status. 47.3% of unconnected households in these districts procure firewood for free.
- Jharkhand - All the 10 districts surveyed - Bokaro, Chatra, Latehar, Seraikela Kharsawan, Simdega, Deoghar, Garhwa, Khunti, Pakur and West Singhbhum - fall in forest areas. 6 of these districts have majority tribal population belonging to low-income groups. Nearly 49% of the unconnected households procure firewood for free.
- Madhya Pradesh - Out of the 14 districts surveyed, 13 - Dindori, Seoni, Sheopur, Umaria, Jhabua, Panna, Ashoknagar, Damoh, Shajapur, Betul, Raisen, Khandwa and Singrauli - fall in forest areas, which provide easy access to free firewood. 8 of these are also tribal dominated districts.

- Gujarat - Out of the 7 districts surveyed, 6 - Sabarkantha, Dahod, Surendranagar, Banaskantha, Narmada and Panchmahal - fall in forest areas. Moreover, 4 of these largely comprise tribal population belonging to low-income groups, resulting in very high propensity to procure free firewood.
- Tripura and Meghalaya - All districts surveyed are forest areas, but firewood is not available for free because of difficult terrains and inaccessibility.

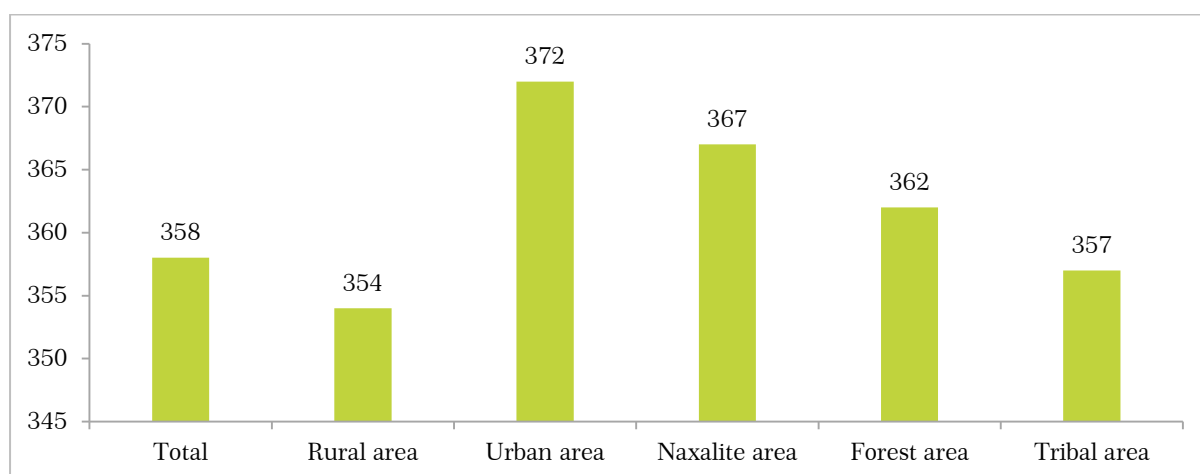
8.5 Total monthly expenses on cooking fuels

Since households use multiple fuels and also obtain some fuels for free at times, the sampled households were asked to mention the average amount spent on all fuels collectively in a month. The total amount spent on cooking fuels (firewood, biomass and/or cow dung) is Rs 358/month across all 13 states among households that purchase at least one of the fuels from the open market.

Significant difference is seen between rural and urban areas with respect to the total monthly spend on cooking fuels – Rs 354/month (free procurement - 37%) and Rs 372/month (free procurement – 25%), respectively.

In terms of area-wise segregation, households in Naxalite, forest and tribal areas spend on an average Rs 367/month, Rs 362/month and Rs 357/month, respectively, on cooking fuels.

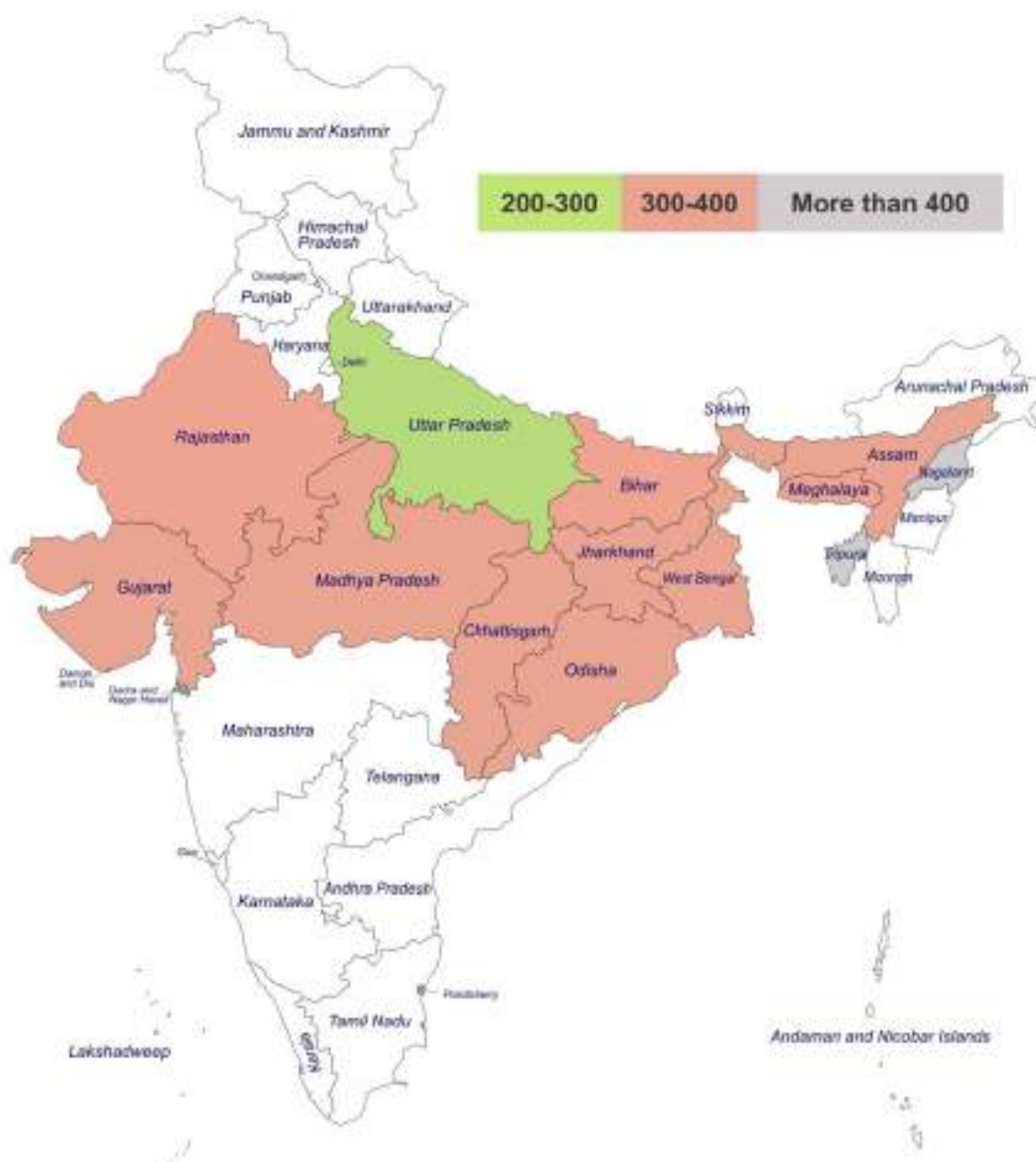
Figure 27: Monthly expenses on cooking fuels (Rs/month)



Nagaland and Tripura spend, on an average, more than Rs 400/month on cooking fuels. Rajasthan, Bihar, Meghalaya, Assam, Jharkhand, West Bengal and Chhattisgarh spend, on an average, Rs 300-400/month. Uttar Pradesh reported the lowest spend - below Rs 300/month.

The district-wise summary is presented in **Annexure 17** and **Annexure 18**.

Figure 28: Heat map for state-wise monthly fuel expenses (Rs/month)

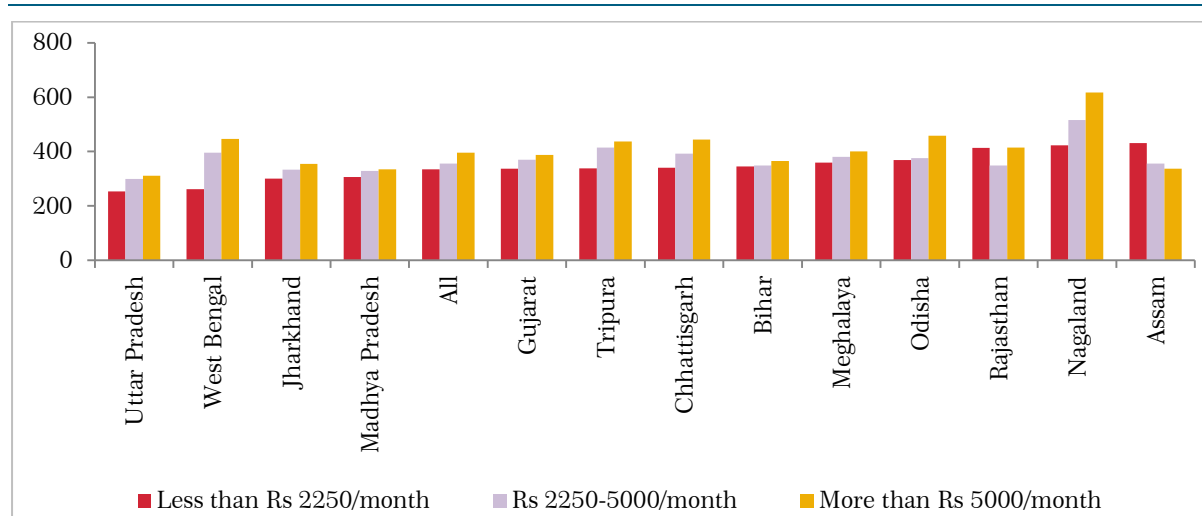


Correlation between monthly spends and average income levels

In the surveyed states, free procurement of cooking fuel declines from 41% for households earning less than Rs 2,250/month to 26% for those earning more than Rs 5,000/month. Increase in earning capacity results in greater ability to purchase and lower propensity to spend time and effort in procurement of free fuel.

Monthly expenses on cooking fuels also show a high degree of correlation with the median household income (MHI). Increase in MHI leads to greater expenditure on cooking fuels (since the component of free fuel declines). Average monthly expenses for the lowest MHI segment have been estimated at Rs 334/month with 59% households procuring paid fuel. The expenses increase to Rs 356/month for the middle MHI segment, with 66% procuring paid fuel, and reach Rs 396/month for the high MHI segment, where 74% procure paid fuel. A similar correlation is observed across all states, except Rajasthan and Assam.

Figure 29: Correlation between average spends and income levels



("All" refers to the average of all surveyed states.)

Table 4: Total expenses on cooking fuels/month by households versus income levels

State/region		Total amount spent on fuels		
		Income less than Rs 2,250/month	Income Rs 2250-5,000/month	Income more than Rs 5,000/month
	All	334	356	396
Region	Rural	330	353	391
	Urban	347	366	408
State	Rajasthan	414	349	415
	Uttar Pradesh	253	299	311
	Bihar	345	349	365
	Nagaland	423	516	617
	Tripura	338	415	437
	Meghalaya	359	381	401
	Assam	431	356	337
	West Bengal	262	396	447
	Jharkhand	300	333	355
	Odisha	369	376	458
	Chhattisgarh	341	392	444
	Madhya Pradesh	306	329	334
	Gujarat	337	370	387

Specifically, an analysis on the expenditure on cooking fuels across households of the surveyed states was carried out to understand the challenge of affordability that these unconnected households face.

With nearly 55% of the households falling under the income band of Rs 2,250/month to Rs 5,000/month, the average amount spent by households as a percentage of their income level is estimated at 9.8%. However, this may not be a true representation of the share of fuel cost in the monthly income as households may also stock fuels, which can last beyond one month.

- **For 55% of households** in the income band of Rs 2,250/month to Rs 5,000/month, expenditure on fuels is estimated at **9.8% of the household income**.
- Household income has high degree of correlation with fuel expenses:
 - ◆ MHI < Rs 2,250/month - Fuel expenses **Rs 334/month** with 59% procuring paid fuel
 - ◆ MHI from Rs 2,250/month to Rs 5,000/month - Fuel expenses **Rs 356/month** with 66% procuring paid fuel
 - ◆ MHI greater than Rs 5,000/month - Fuel expenses **Rs. 396/month** where 74% procure paid fuel

9. Awareness-related assessment

9.1 Awareness about LPG as a cooking fuel

Awareness about LPG as a cooking fuel is close to 93% among the unconnected households surveyed across the selected states. There is no significant difference in awareness between rural (92.6%) and urban areas (94.4%).



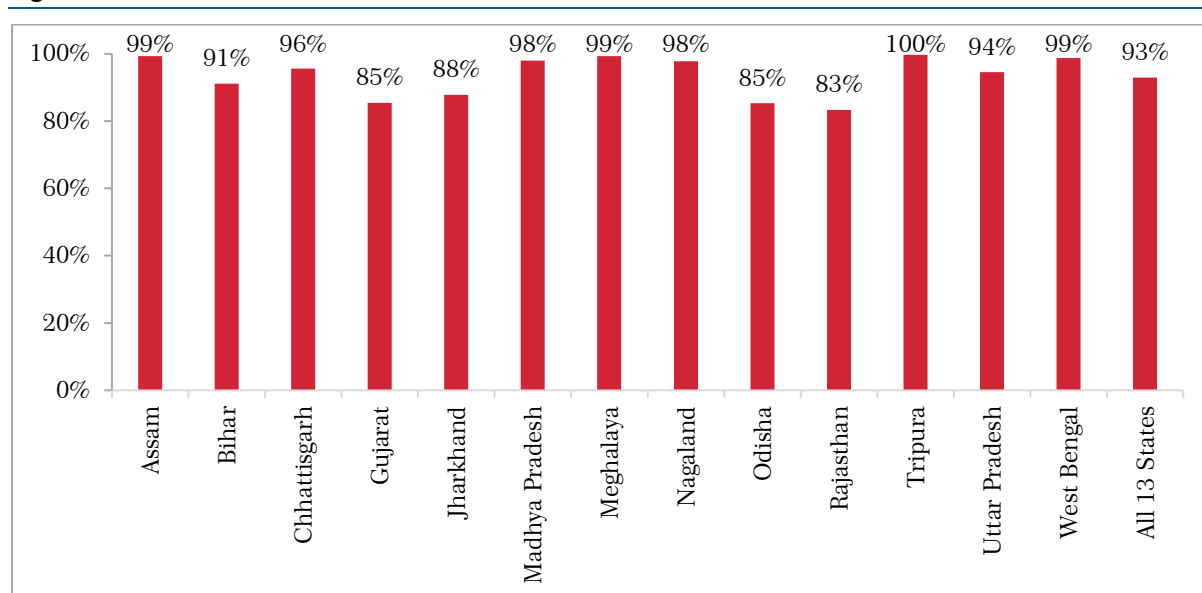
Awareness about LPG as a cooking fuel is more than 90% in all states except Jharkhand-88%, Odisha-85%, Gujarat-85% and Rajasthan-83%. We highlight some district-wise observations about LPG awareness in these states are below:

- Rajasthan - Districts with low awareness about LPG are Banswara-65%; Baran-64%, Dungarpur-75% and Rajsamand-60%. The poor awareness can seemingly be attributed to low literacy rate³ (Banswara-56.3%, Dungarpur-59.3%) compared with the state's average of 66.1%.
- Jharkhand - Districts with low awareness about LPG are Pakur-77% and Khunti-59%. The poor awareness levels can seemingly be attributed to again, low literacy rate (Pakur-48.8%, Khunti-63.9%) compared with the state's average of 66.4%.
- Odisha - Districts with low awareness include Mayurbhanj-19% and Sundargarh-68%. The poor awareness can seemingly be attributed to the low literacy rate (Mayurbhanj-63.2%) compared with the state's average of 72.9%.
- Gujarat - Districts having low LPG awareness are Narmada-35%, Surendranagar-86% and Banaskantha-86%. Literacy in these districts (Surendranagar-72.1%, Banaskantha-65.3%, Narmada-72.3%) are lower than the state's average of 78%, which may be the primary reason for the low LPG awareness. Further, in Banaskantha, the numbers can also be due to the large area surveyed (areas falling under 40 km from the major district road).

The state-wise summary of LPG awareness is shown in **Annexure 19**.

³ All the literacy rates referred in this chapter are as per Census 2011

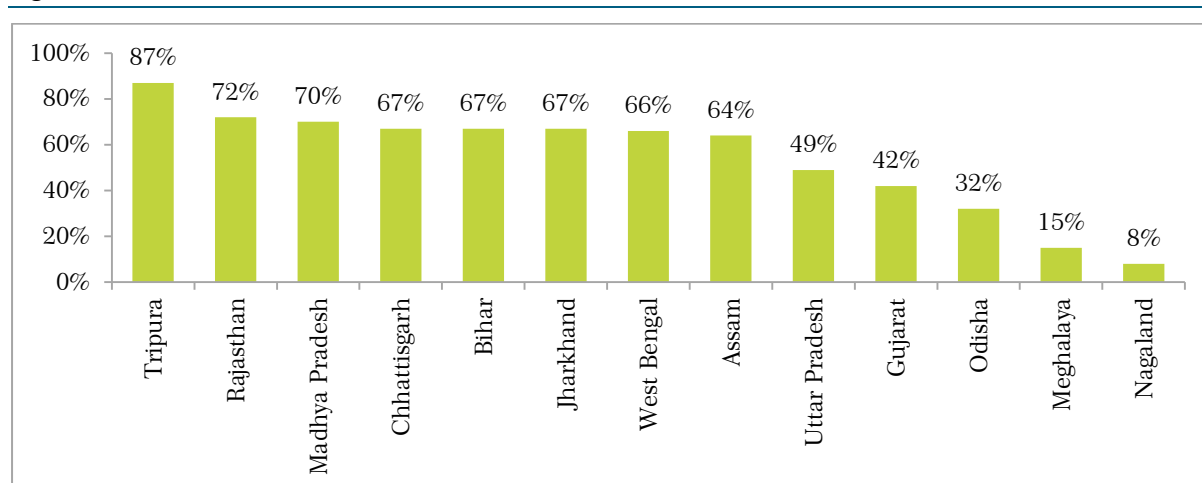
Figure 30: LPG awareness across states



9.2 Awareness about PAHAL scheme

The Pratyaksh Hanstantrit Labh (PAHAL) scheme, which ensures that LPG subsidy is directly deposited in the consumer's bank account, is a progressive step towards increasing LPG usage. It is observed that around 57% unconnected households are aware about the PAHAL scheme. Lower awareness about PAHAL was recorded in Nagaland (8%), Meghalaya (15%), Odisha (32%), Gujarat (42%) and Uttar Pradesh (49%). The district-wise observations in these states are below:

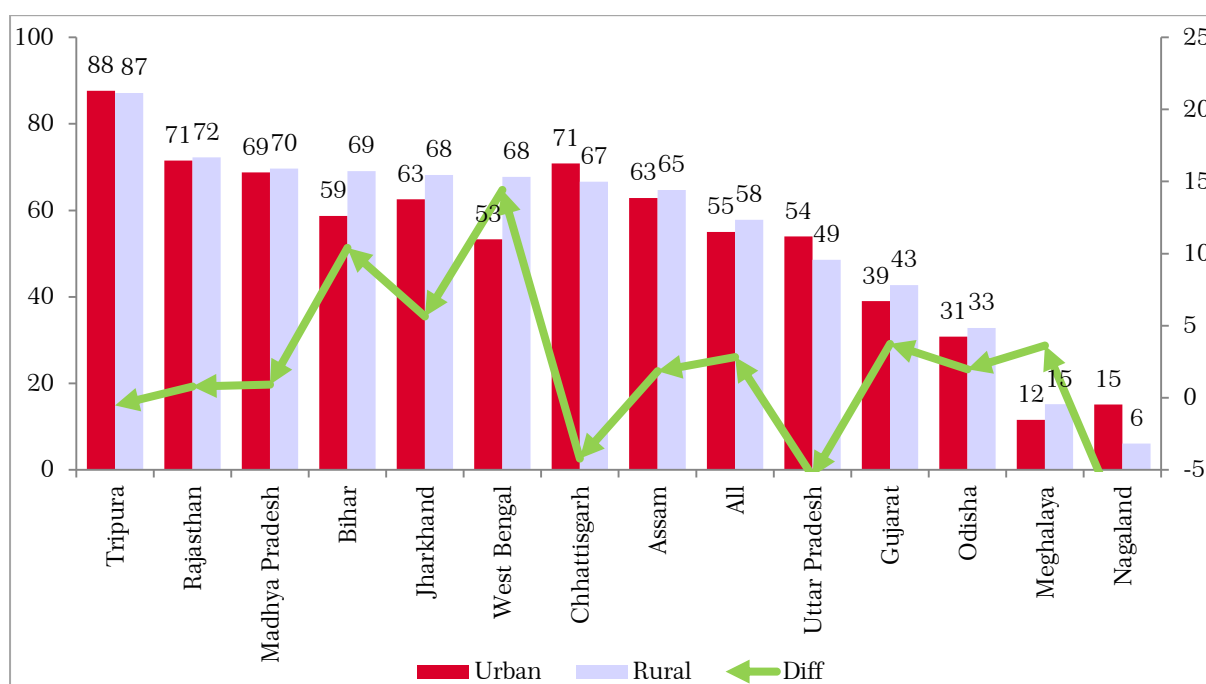
Figure 31: Awareness about the PAHAL scheme across select states in India



- 57% unconnected households surveyed are aware about the PAHAL scheme.
- Lower awareness of PAHAL was recorded in **Nagaland, Meghalaya, Odisha, Gujarat and Uttar Pradesh.**

- Nagaland - Low awareness about PAHAL was recorded across the state, including in the districts of Mon (8%), Kiphire (9%), Peren (7%) and Wokha (8%).
- Meghalaya - Low PAHAL awareness was recorded across the state, especially in the districts of West Jaintia Hills (1.8%) and West Khasi Hills (2%).
- Odisha - Some of the districts with low awareness about the scheme included Gajapati (14%), Malkangiri (21%), Mayurbhanj (1%) and Sundargarh (6.5%).
- Gujarat - Some of the districts with low awareness about the scheme included Kheda (9%), Narmada (2%) and Panchmahal (4%).

Figure 32: Awareness about the PAHAL scheme across urban/rural households (in %)



(All refers to average of all the surveyed states, Difference is rural over urban plotted on right axis.)

- Awareness about PAHAL scheme among **urban households was 55%, and in rural households it was 58%.**
- Urban and rural households differ in terms of being aware of the PAHAL scheme - the difference is maximum in **West Bengal and Bihar.**

9.3 Awareness about OMCs

Awareness about oil-marketing companies (OMCs) was also checked with the surveyed unconnected households. High awareness emerged for Indane, the LPG brand name of IOCL (77%), followed by Bharat Gas promoted by BPCL (62%) and HP Gas (44%) of HPCL.



- Highest brand recall emerged for **Indane of IOCL-77%; Bharat Gas of BPCL-62% and HP Gas of HPCL-44 %**.

10. Barriers to LPG penetration

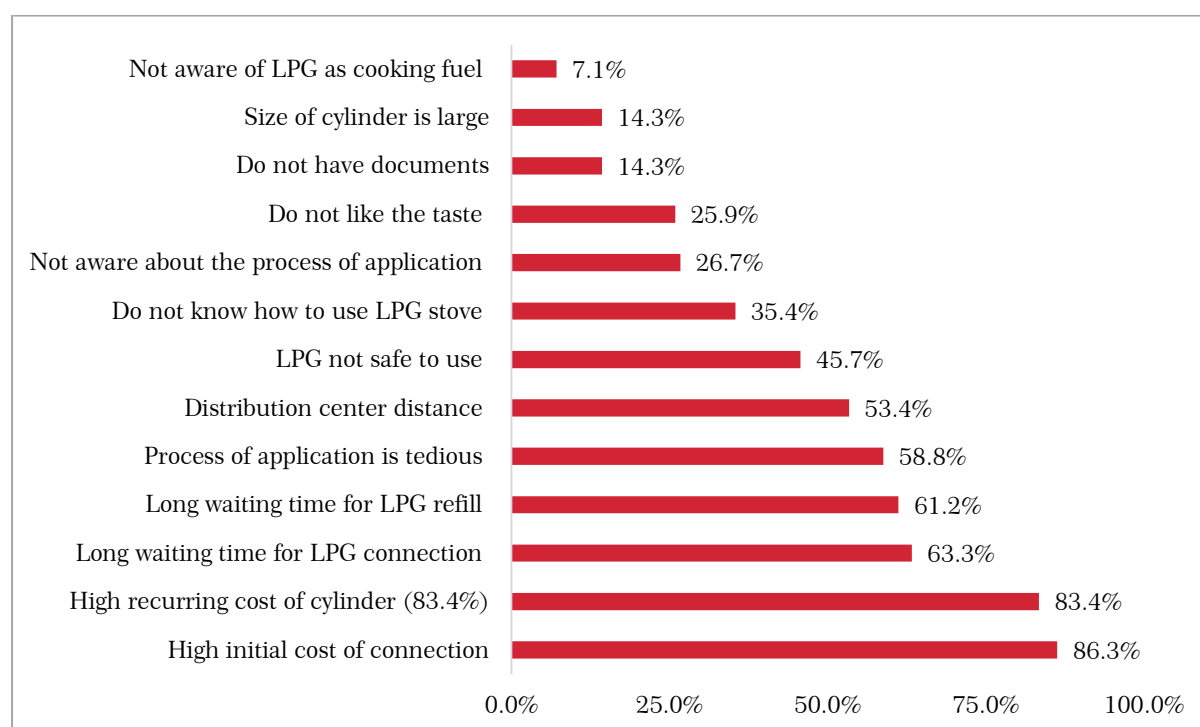
The survey provides insights into the key barriers preventing large-scale penetration of LPG across the identified states.

The two most significant barriers are “High initial cost of LPG connection, including the security deposit and the price of a gas stove-86%” and “High recurring cost of cylinder-83%”. Some other barriers include, “Long waiting time to get a connection”, “Long waiting time for getting a cylinder refill”, “Distance of the distributor centre” and “Complexity in the process of application”.

The major barriers preventing a large-scale penetration of LPG are ranked below on the basis of the percentage of households identifying them as a hurdle.

- Rank 1 – High initial cost of connection (86.3%)
- Rank 2 - High recurring cost of LPG refill (83.4%)
- Rank 3 - Long waiting time for LPG connection (63.3%)
- Rank 4 - Long waiting time for cylinder refill (61.2%)
- Rank 5 - Process of application is tedious (58.8%)
- Rank 6 - Distribution center distance (53.4%)
- Rank 7 - LPG not safe to use (45.7%)
- Rank 8 - Do not know how to use an LPG stove (35.4%)
- Rank 9 - Not aware about the process of application for an LPG connection (26.7%)
- Rank 10-Do not like the taste of food cooked using LPG (25.9%)
- Rank 11 - Do not have required documents (14.3%)
- Rank 12 - Size of the cylinder is large (14.3%)
- Rank 13-Not aware of LPG as a cooking fuel (7.1%)

Figure 33: Reasons for not using LPG as a cooking fuel (in %)



10.1 Price barrier

A. High initial cost of connection

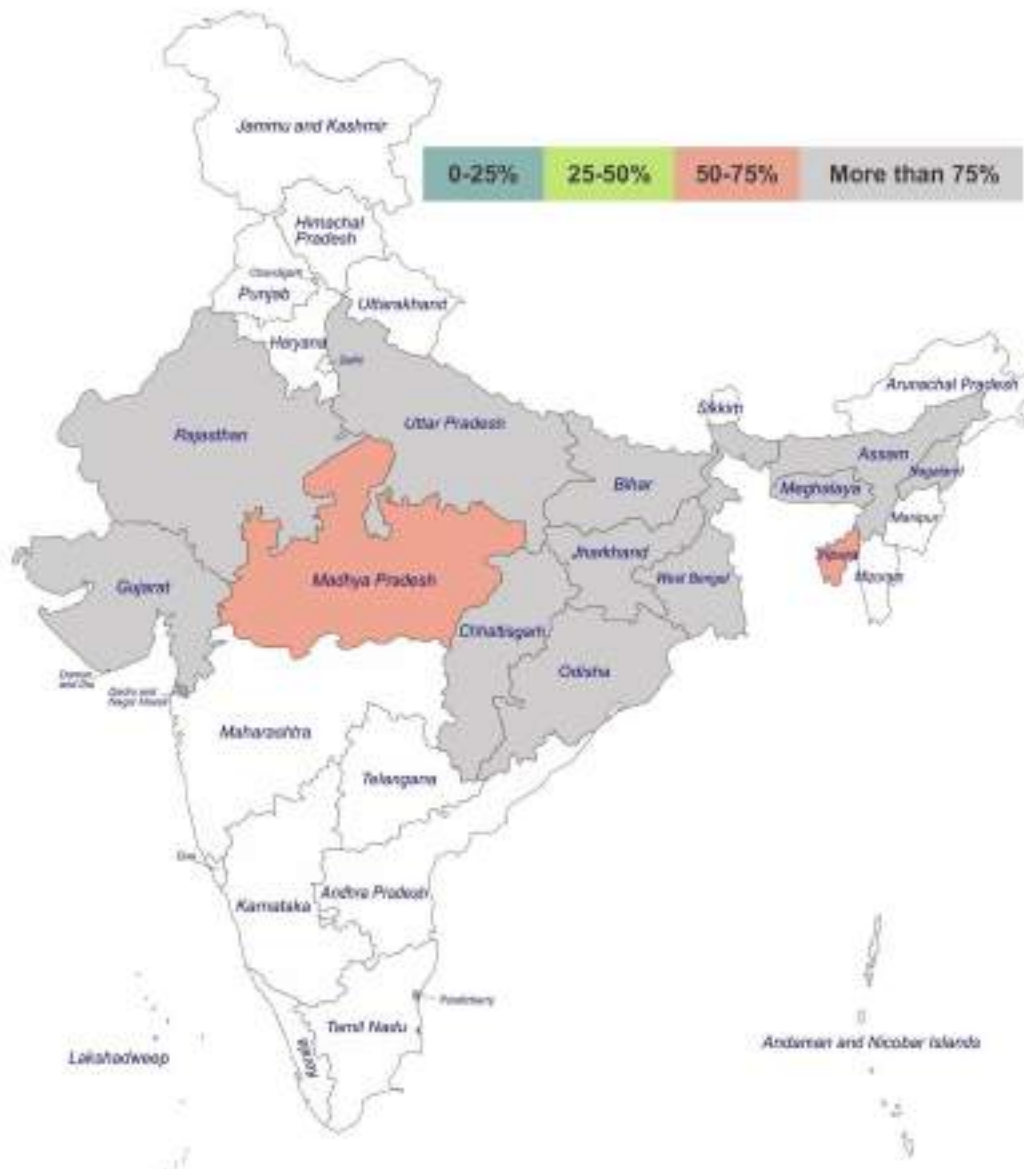
The high initial cost of connection (comprising security deposit and the cost of a stove) as well as the recurring cost of a gas cylinder were singled out as the top two barriers. Both barriers have been reported at similar levels across rural and urban areas.

The high initial cost has been identified as a barrier by 86% of the surveyed households. Except in Madhya Pradesh and Tripura, 75% or more of households have cited high initial cost as a barrier in all the other states. The high initial cost of an LPG connection has emerged as the biggest barrier across households irrespective of rural (86%) and urban (87%) areas, and the income levels (86% for households with income below Rs 2,250/month and 87% for households with income above Rs 2,250/month and gender (87% for females and 86% for males) of the respondents.

The state-wise summary of the percentage of households citing high initial cost as a barrier is shown in Figure 34. The district-level analysis is discussed below:

High initial cost

Figure 34: Spread of respondents citing high initial cost as a barrier



- 58 out of 120 districts have reported high reluctance (more than 90% unconnected households) towards the adoption of LPG as a cooking fuel due to its high initial cost.
- Rajasthan - All 9 districts surveyed consider initial cost as an inhibiting factor to consider LPG as a cooking fuel.
- UP - Bahraich, Badaun, Chitrakoot, Ghazipur, Hardoi, Kheri, Lalitpur, Maharajganj, Mirzapur, Muzaffarpur, Sant Kabir Nagar, Sonbhadr and Sultanpur districts consider initial cost to be a significant barrier in considering adoption of LPG.
- Bihar - Except in Katihar, Muzaffarpur, Purbi Champaran and Saran, a high initial cost has been identified as a barrier by at least 90% of households in the rest of the 11 districts.



- Jharkhand - Households in Pakur, Deoghar, West Singhbhum and Seraikela Kharsawan in Jharkhand consider the initial cost to be high.
- Gujarat - Banaskantha, Dohad, Sabarkantha and Surendranagar have singled out high initial cost as the biggest barrier.
- Others - West Khasi Hills in Meghalaya, Golaghat, Chirang and Hailakandi in Assam, South 24 Parganas, Cooch Behar, Jalpaiguri, West Medinipur and Murshidabad in West Bengal, Mayurbhanj, Sonepur and Puri in Odisha, Durg, Raigarh and Surguja in Chhattisgarh and Kiphire and Peren in Nagaland are other districts, where initial cost has emerged as the single most important barrier preventing LPG penetration. The state-wise summary is shown in **Annexure 20**.

B. High recurring cost of refilling LPG

The high recurring cost of refilling an LPG cylinder has been identified as a barrier by 83% of households. Except in Gujarat, Madhya Pradesh and Tripura, more than 75% of households have cited it as a barrier in all other states.

It has emerged as the biggest barrier across households, irrespective of rural (84%) and urban (82%) areas, and income levels (82% for households with income below Rs 2,250/month and 84% for households with income above Rs 2,250/month and gender (84% for females and 83% for males).

The state-wise summary of the percentage of households citing high recurring cost as a barrier is shown in **Annexure 21**. Some of the district-level analyses have been discussed below:

- 54 of 120 districts surveyed have reported a high degree of reluctance (more than 90% unconnected households) to opt for LPG as a cooking fuel due to its high recurring cost.
- In Rajasthan, except in Baran, Banswara and Barmer high recurring cost has emerged as a significant barrier (i.e., greater than 90% households).
- In Uttar Pradesh, except in Balrampur, Kanshi Ram Nagar, Kannauj and Jaunpur high recurring cost has emerged as a significant barrier (i.e., greater than 90% households).
- Bihar-Araria, Aurangabad, Gaya, Kaimur and Supaul are some districts where the high recurring cost has been identified as a barrier by at least 90% households.
- Jharkhand - Households in Deoghar and Seraikela Kharsawan districts consider the high recurring cost as a significant barrier preventing the acceptability of LPG as a cooking fuel.
- Gujarat - Households in Sabarkantha district have singled out high recurring cost as a significant barrier.
- Others - West Garo Hills, West Jaintia Hills and Khasi Hills in Meghalaya; Golaghat, Chirang, Dhemaji, Nagaon and Hailakandi in Assam; South 24 Parganas, Cooch Behar, Jalpaiguri, West Medinipur and Murshidabad in West Bengal, Singrauli in Madhya Pradesh, Wokha, Kiphire and Peren in Nagaland, Mayurbhanj and Sundargarh in Odisha; Bilaspur, Raigarh and Surguja in Chhattisgarh are other districts where recurring cost has emerged as a barrier (more than 90% households)

10.1.1 Suggested financial incentives for conversion to LPG

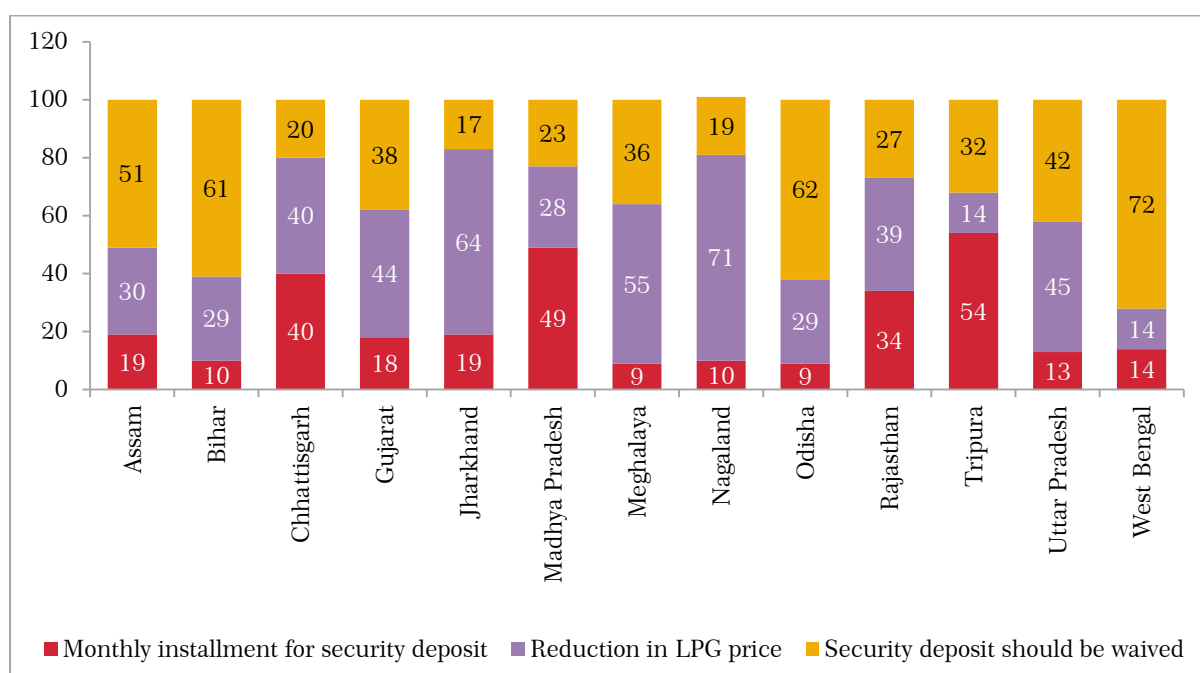
With both high initial cost and recurring cost emerging as significant deterrents to large-scale penetration of LPG, it is important to devise suitable financial incentives targeting these price barriers. The households were enquired about their preference among three options:

- Monthly installment for the security deposit of a cylinder
- A reduction in the recurring price of LPG refill
- Waiving off the LPG security deposit cost

No consensus emerged in the sample with respect to the preference of financial incentives for conversion to LPG. While 41% households prefer waiving off the security deposit cost, 38% prefer reduction in the recurring cost of LPG and another 21% are also comfortable with a possible equated-monthly instalment (EMI) option for reducing initial outgo towards the security deposit.

Households surveyed in the states of Tripura, Chhattisgarh and Madhya Pradesh have suggested a monthly-installment scheme for the security deposit, while Bihar, West Bengal and Odisha have preferred a waiver of security deposit rather than lowering the price of LPG. The state-wise summary is shown below:

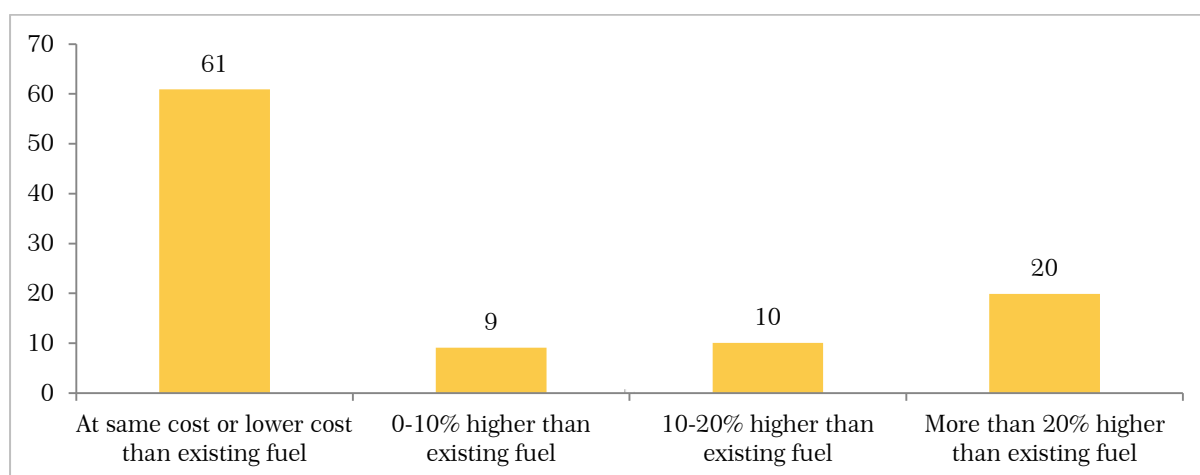
Figure 35: Suggested incentives to target price barriers (in %)



10.1.2 Willingness to pay for LPG versus current fuel expenses

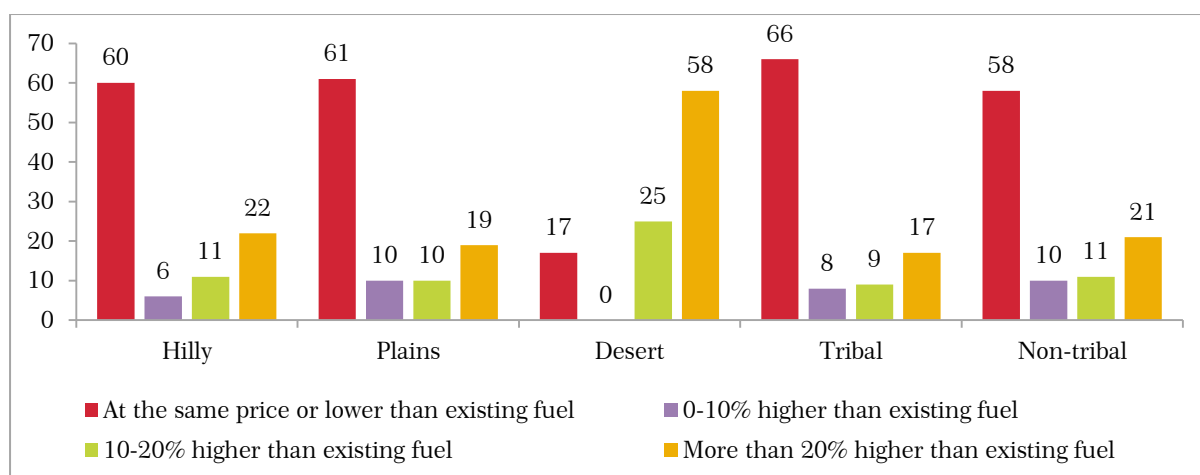
Around 61% unconnected households are willing to consider LPG priced at a level similar to or lower than their existing fuel cost. Nearly 39% are even willing to consider LPG at a price more than their existing fuel cost. Out of the 39% households 20% are willing to pay even more than 20% of their existing fuel cost. The numbers are similar for both rural and urban areas.

Figure 36: Price willing to pay for LPG vs current fuel expenses (figures in percentage)



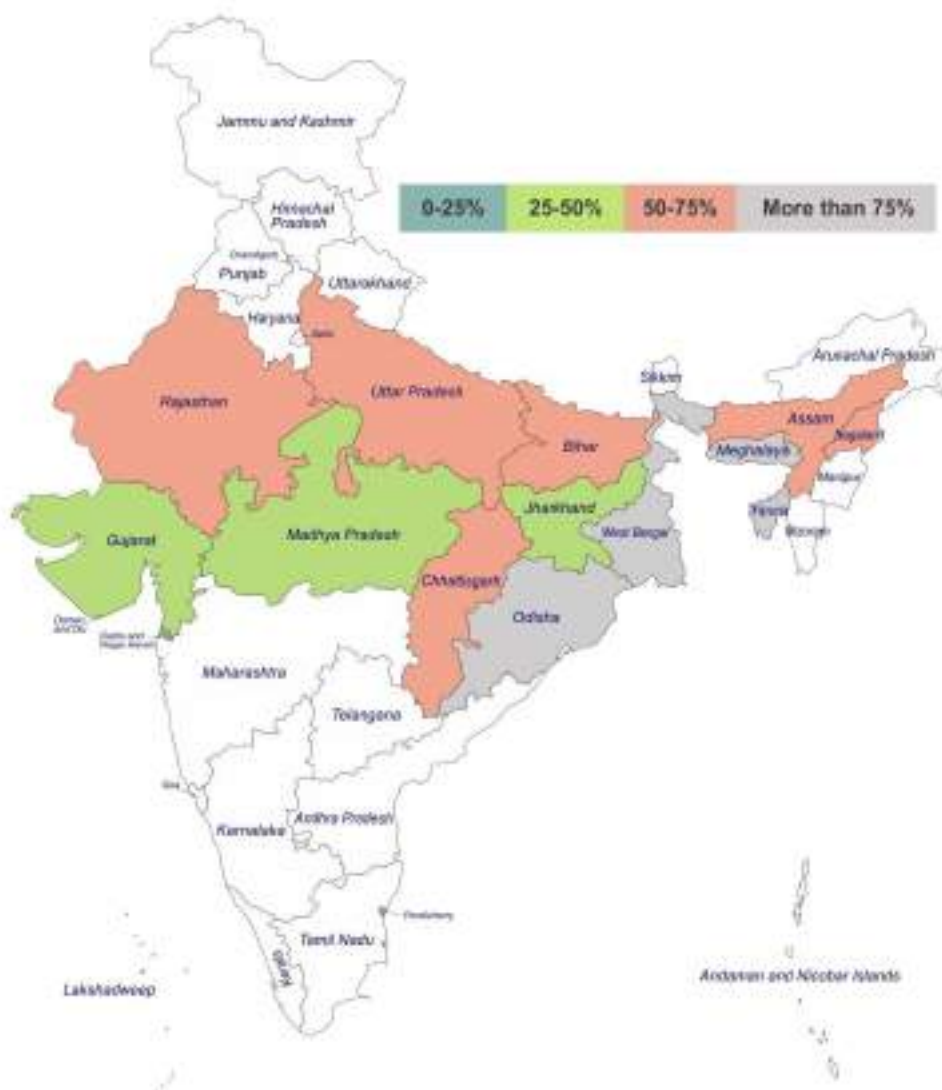
The highest inclination to pay more than their existing fuel cost was among unconnected households in Madhya Pradesh, Gujarat, Jharkhand and Rajasthan. The lowest inclination was found in Tripura, Meghalaya, West Bengal and Odisha. The willingness to pay across hilly, plain, desert, tribal and non-tribal belts is shown below.

Figure 37: Willingness to pay across topographies, tribal and non-tribal belts (in %)



The state-wise summary showing the willingness of states to buy LPG at their existing fuel cost or at a lower price is shown in Figure 38:

Figure 38: Spread of households in terms of willingness to purchase LPG at the same price or lower than their existing fuel cost

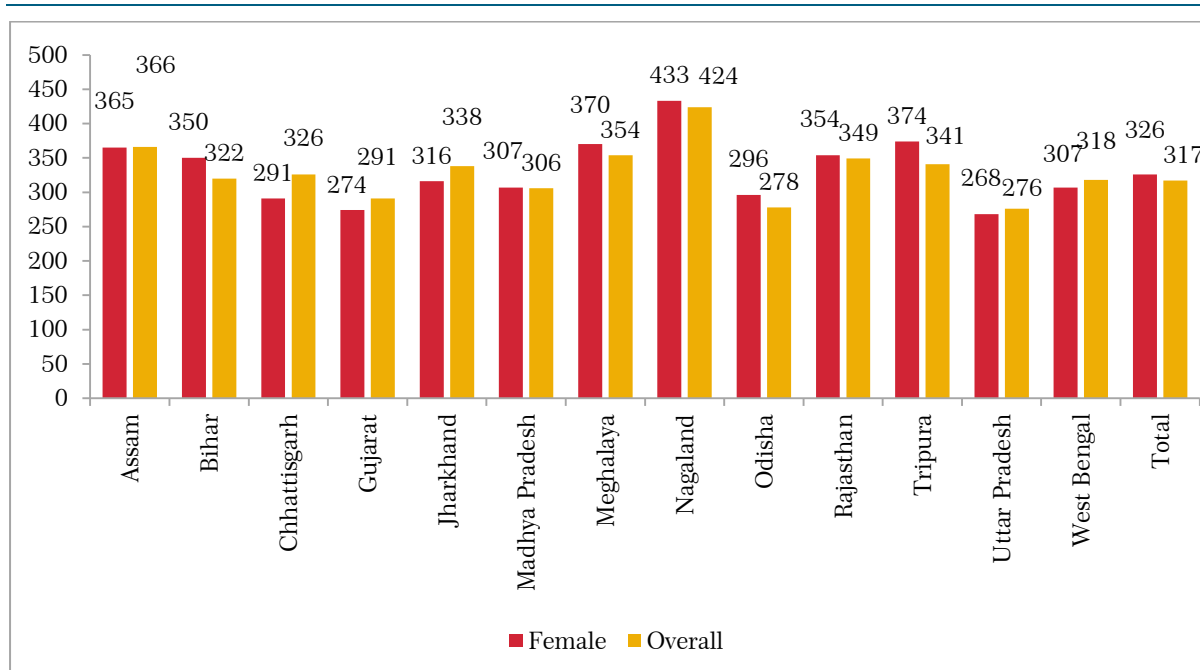


10.1.3 Estimated price households are willing to pay for LPG

As part of the survey questionnaire, the surveyed households were enquired regarding the price they were willing to pay for procuring LPG in a month. Based on their responses, the willingness to pay for LPG is estimated at Rs 317/month. The willingness in rural and urban areas is estimated at Rs 313/month and Rs 333/month, respectively.

Interestingly, female respondents are willing to pay a higher price for the LPG refill (Rs 326/month) as compared to male counterparts (Rs 315/month). This is a significant difference, which clearly implies that the propensity to opt for cleaner fuel, such as LPG, is high among women, who have to directly bear the inconvenience and hazards of using traditional cooking fuel. Women are likely to strongly influence households to convert to LPG as a cooking fuel. The state-wise willingness to pay for LPG is shown in the following graph:

Figure 39: State-wise willingness to pay for LPG (Rs/month)



(Total refers to the average of all surveyed states)

As depicted in the graph above, the states willing to pay higher than the national average of Rs 317/month include Nagaland, Assam, Meghalaya, Rajasthan, Tripura, Jharkhand, Chhattisgarh, Bihar and West Bengal. Uttar Pradesh, Odisha, Madhya Pradesh and Gujarat are willing to pay lower than the national average.

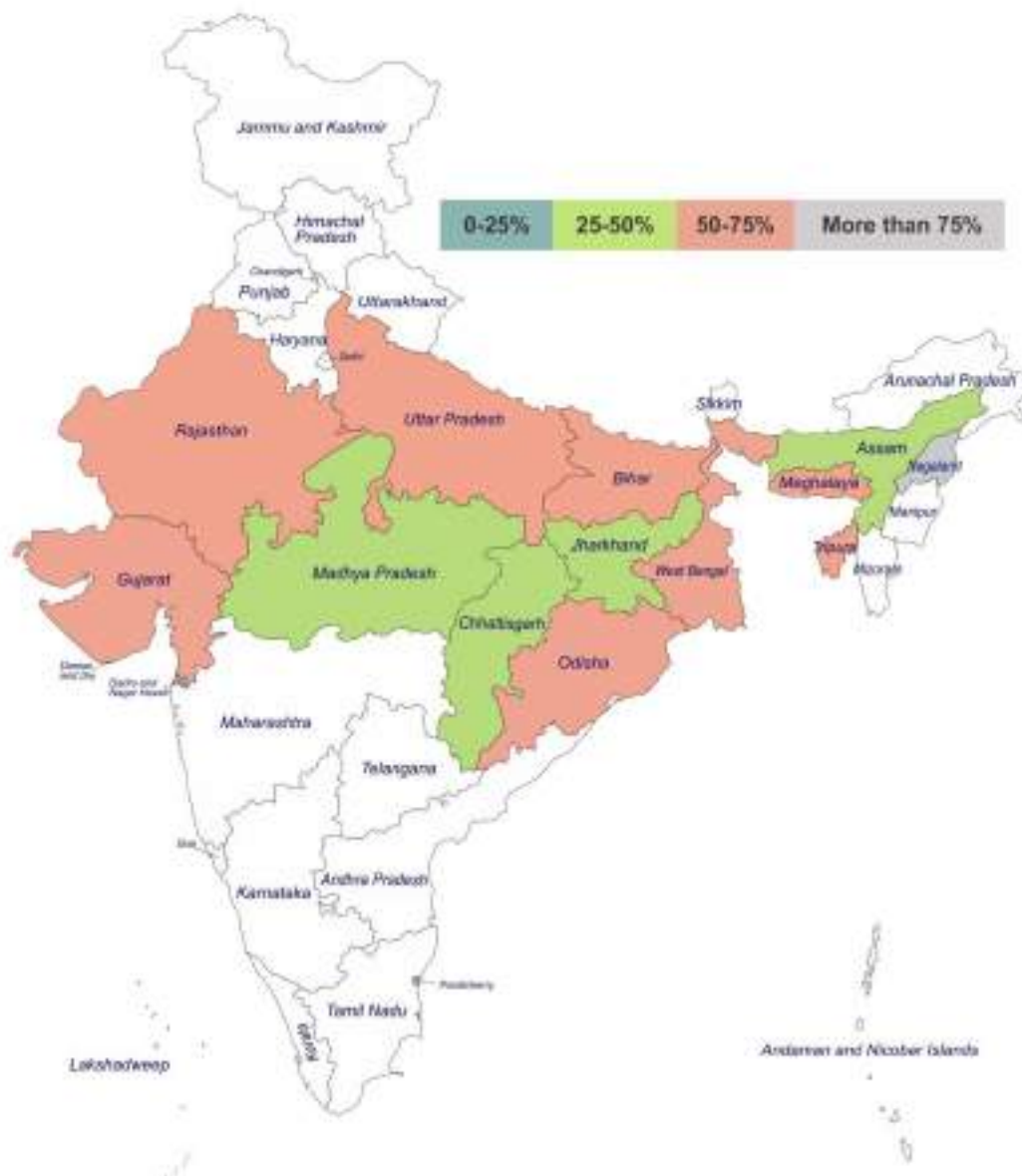
10.2 Process-related barriers preventing LPG penetration

The process-related barriers, according to unconnected households, include the perception that the process of getting a new LPG connection is tedious and entails a long waiting time.

10.2.1 Process of LPG application process is tedious

Nearly 58% households cited tedious application process as one of the barriers preventing them from using LPG. Except in Madhya Pradesh, Chhattisgarh, Jharkhand and Assam, the process of application being tedious was cited as a major barrier preventing acceptability of LPG, with households in Nagaland (91%), Bihar (71%), Odisha (69%), West Bengal (67%) being the most concerned regarding the process. The state-wise summary is in Figure 40.

Figure 40: State-wise response regarding of application process being tedious

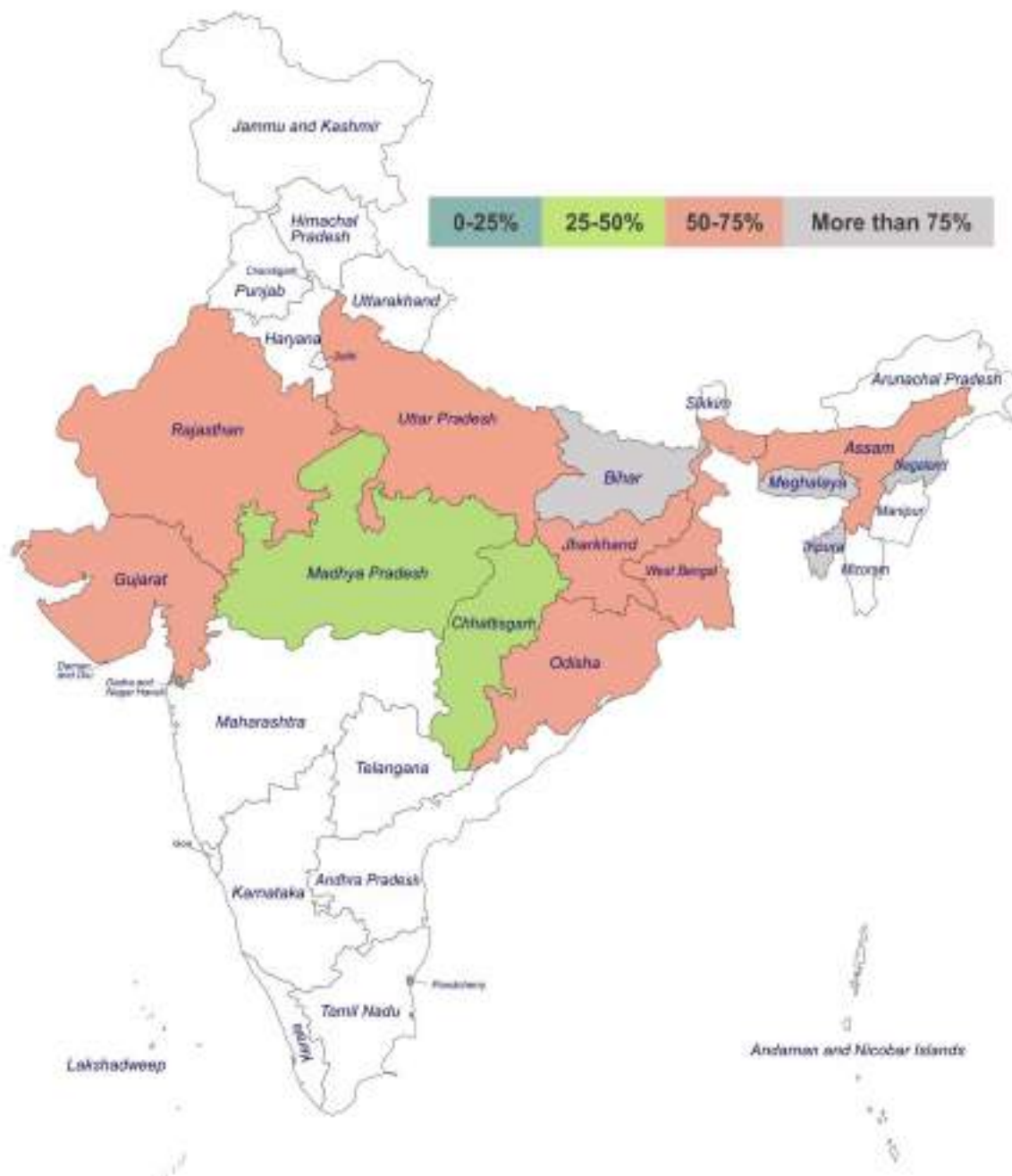


Some districts where more than 90% unconnected households consider the complexity of the application process as a barrier include Dausa, Dholpur and Karauli in Rajasthan; Hardoi in Uttar Pradesh, Araria, Aurangabad, Begusarai, Gaya, Bhabua and Supaul in Bihar, Mon, Kiphire and Peren in Nagaland, Cooch Behar and Murshidabad in West Bengal, Malkangiri, Mayurbhanj and Sundargarh in Odisha and Panna and Singrauli in Madhya Pradesh.

10.2.2 Long waiting time to get an LPG connection

Nearly 63% surveyed households cited a long waiting period as a significant barrier across all states. The same concern was raised by both rural (64%) and urban households (61%) and also females (62%). Except in Madhya Pradesh and Chhattisgarh, long waiting time has been cited as a barrier by the unconnected households. In Nagaland (98%), Meghalaya (81%), Tripura (79%) and Bihar (78%), long waiting time for LPG connection has been identified as a significant deterrent. The state-level summary is shown in Figure 41.

Figure 41: Long waiting time for an LPG connection



Some districts where more than 90% unconnected households consider long waiting time to get LPG cylinder as a barrier include Aurangabad, Begusarai, Gaya and Bhabua in Bihar, Karauli and Dausa in Rajasthan, Banaskantha and Surendranagar in Gujarat, Hardoi in UP, West Garo Hills in Meghalaya, Kiphire, Peren, Mon and Wokha in Nagaland, Hailakandi in Assam, Coochbehar and Murshidabad in West Bengal and Malkangiri and Mayurbhanj in Odisha. The state-wise summary is shown in **Annexure 22**.

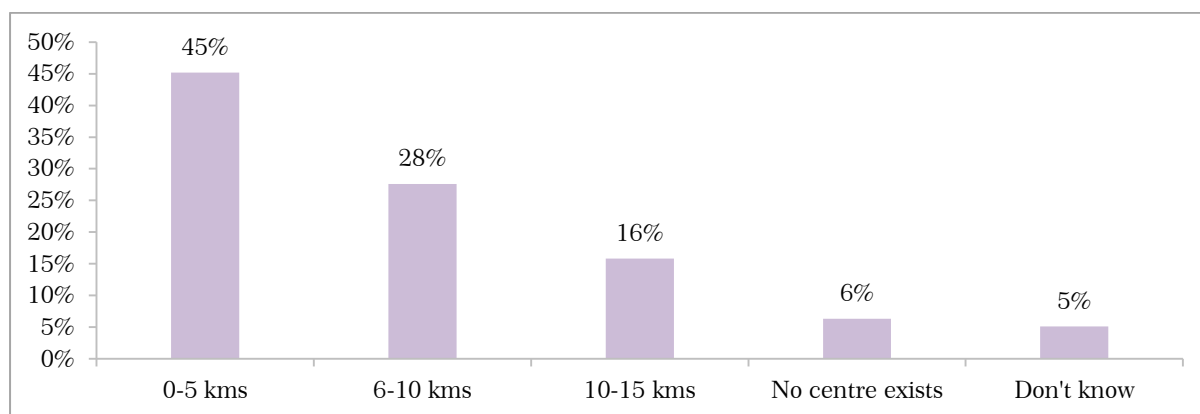
10.3 Availability-related barriers preventing LPG penetration

Inefficient supply chain, poor road network and dispersed households (remotely located customer base) have restricted the current LPG distribution infrastructure to make adequate inroads into rural areas. Last-mile connectivity, in the form of lack of availability of LPG distribution centres and long waiting time for refill of LPG cylinders, especially in rural India, have been cited as key barriers preventing LPG penetration.

10.3.1 Lack of availability of LPG distribution centers

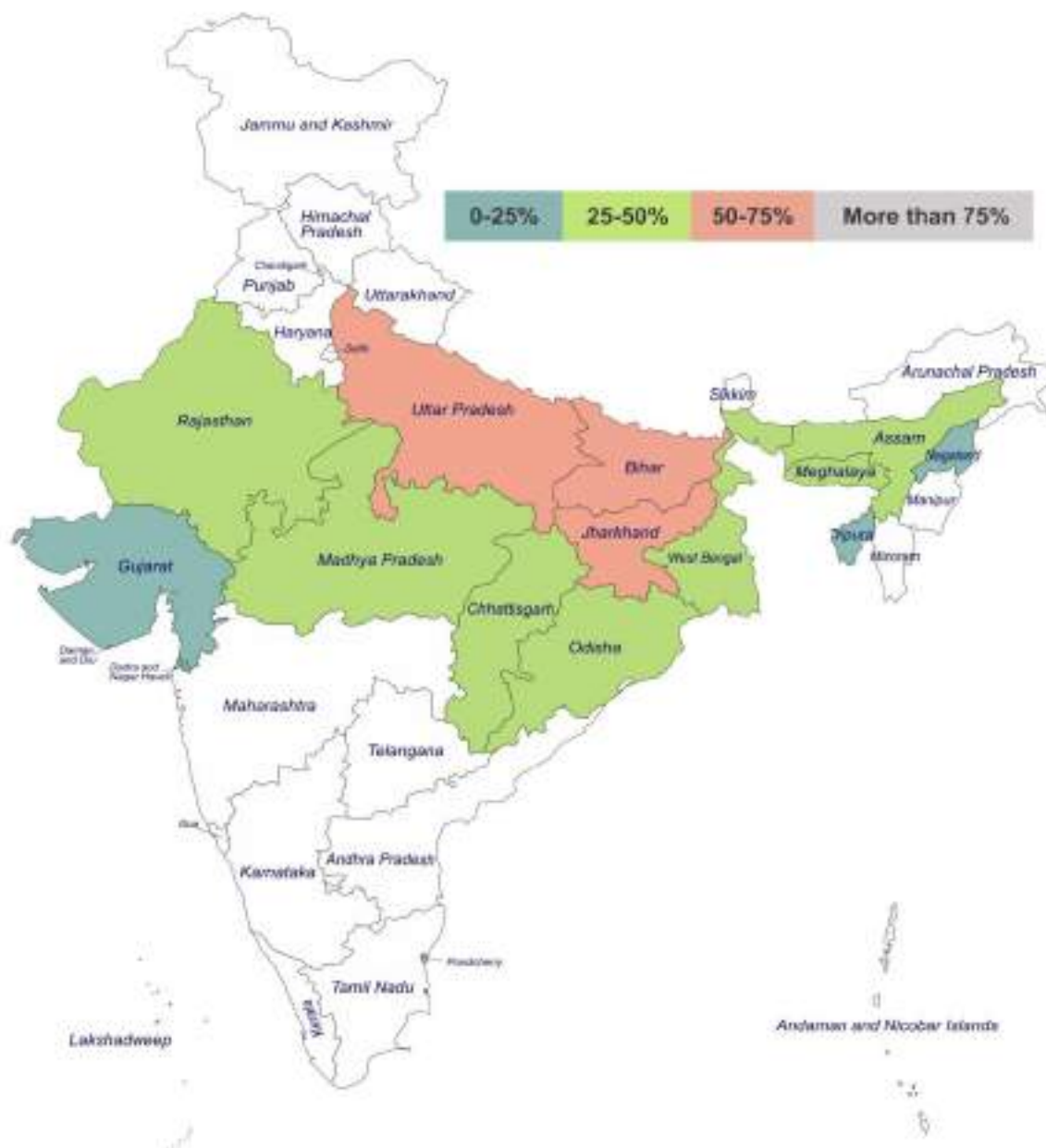
About 45% unconnected households had an LPG distribution centre within 5 km. The balance 55% replied that either the LPG distribution centre distance is more than 5 km or no centre exists or they were not aware about its location. Availability of LPG distribution centre within 5 km was replied by 38% respondents in rural areas and 76% respondents in urban areas.

Figure 42: Distributor centre distance (in %)



About 40%-50% of unconnected households in Nagaland and Tripura are not catered to due to the absence of a distribution centre. Among the rest, which are within 0-15 km of the distributor centre, low stock of cylinders or unavailability of booked cylinders requiring multiple trips make usage of LPG difficult. Distributor centres are available within 0-5 km for 50-65% of unconnected households in Uttar Pradesh, Bihar and Jharkhand. In Bihar, despite close proximity of the distributor centre, the stock of cylinders at the centre is less, because of which the customer needs to visit the centre more than once. The state-wise segregation in terms of availability of distribution centres within 5 km is shown in Figure 43.

Figure 43: Availability of LPG distribution centre within 5 km



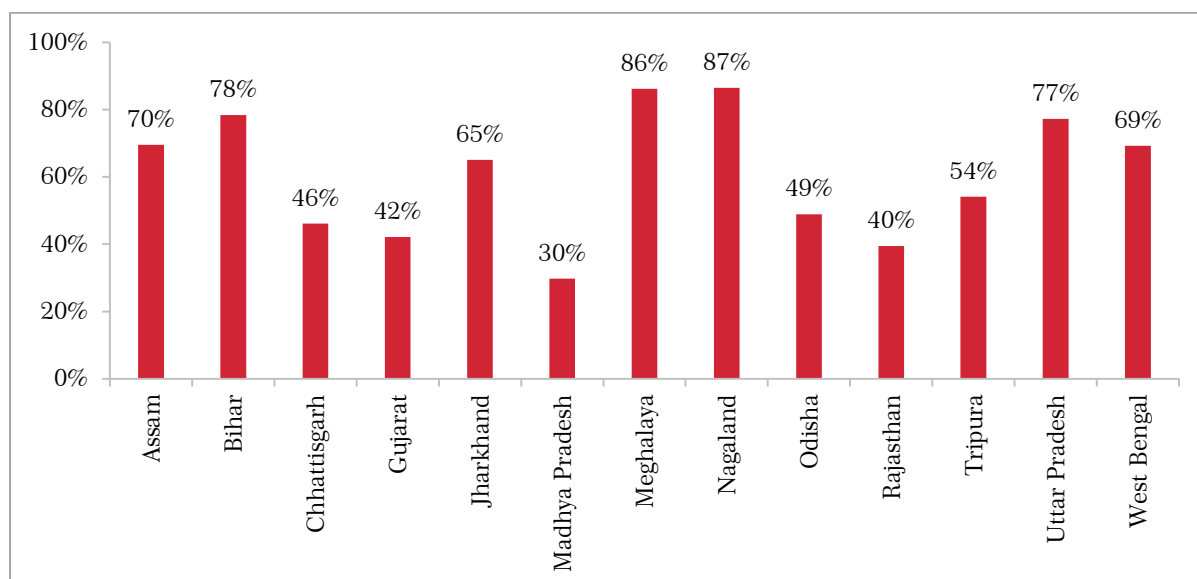
Some districts where around 90% households have cited that a distribution centre is not available within 5 km include Dantewada in Chhattisgarh, Narmada in Gujarat, Balrampur in Uttar Pradesh, Kiphire in Nagaland, Malkangiri in Odisha, South Tripura in Tripura and Murshidabad in West Bengal. The state-wise summary is shown under **Annexure 23**.

10.3.2 Long waiting time to get LPG refill

About 61% of the unconnected households surveyed have cited long waiting time for refill LPG cylinder as a barrier for LPG usage. This concern is greater in rural areas (62%) than urban areas (57%).

Long waiting time to get an LPG refill was particularly cited as a cause for concern in Nagaland (87%), Meghalaya (86%), Bihar (78%), and Uttar Pradesh (77%). The state-wise comparison in terms of percentage of households citing long waiting time for LPG refill as a barrier is shown in below:

Figure 44: Long waiting time for LPG refill being cited as a barrier (in %)



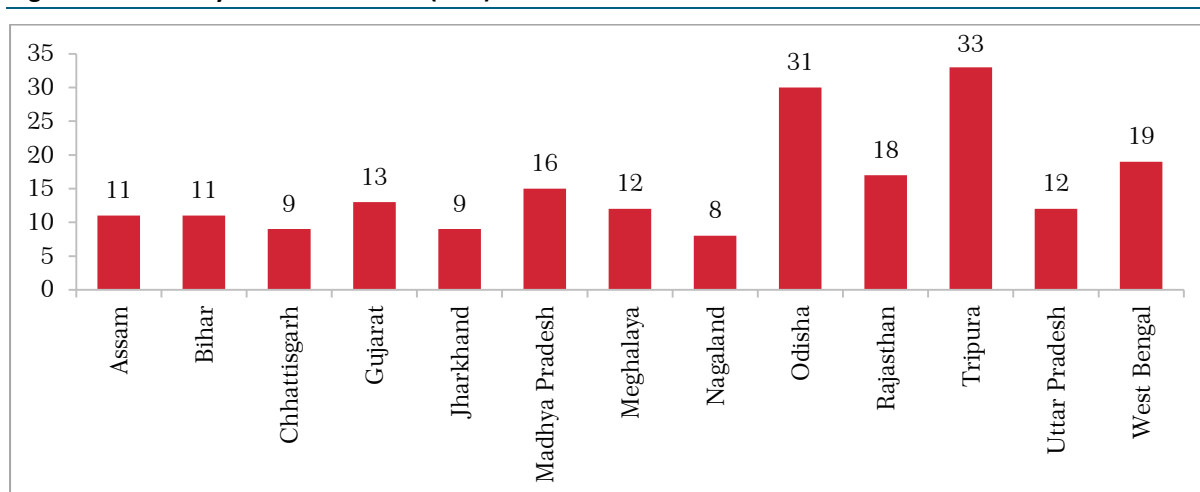
Some districts where more than 90% of households have cited long waiting time to get an LPG refill as a barrier include Dholpur and Karauli in Rajasthan, Araria, Begusarai, Gaya, Bhabua and Supaul in Bihar, Ambedkar Nagar, Azamgarh, Bahraich, Ghazipur, Hardoi, Kheri, Maharajganj, Sant Kabir Nagar and Sonbhadra in UP, Bokaro and West Singhbhum in Jharkhand, West Garo Hills and West Jaintia Hills in Meghalaya, Kiphire, Peren and Wokha in Nagaland, Golaghat and Hailakandi in Assam, Mayurbhanj in Odisha, and Cooch Behar and Murshidabad in West Bengal.

10.3.3 Cylinder size preference

The size of cylinder (14.2 Kgs) emerged as a barrier only for 14% of unconnected households. This is similar for both male and female respondents. It is slightly higher in case of rural areas (15%).

Unlike other states, more than 30% of households in Odisha and Tripura have identified the existing size of cylinder as a barrier to LPG usage. The state-wise summary is shown below:

Figure 45: Size of cylinder as a barrier (in %)



10.4 Usage-related barriers preventing LPG penetration

The usage-related barriers enquired during the survey include awareness related to the usage of LPG stove, perception regarding its safety and taste barriers.

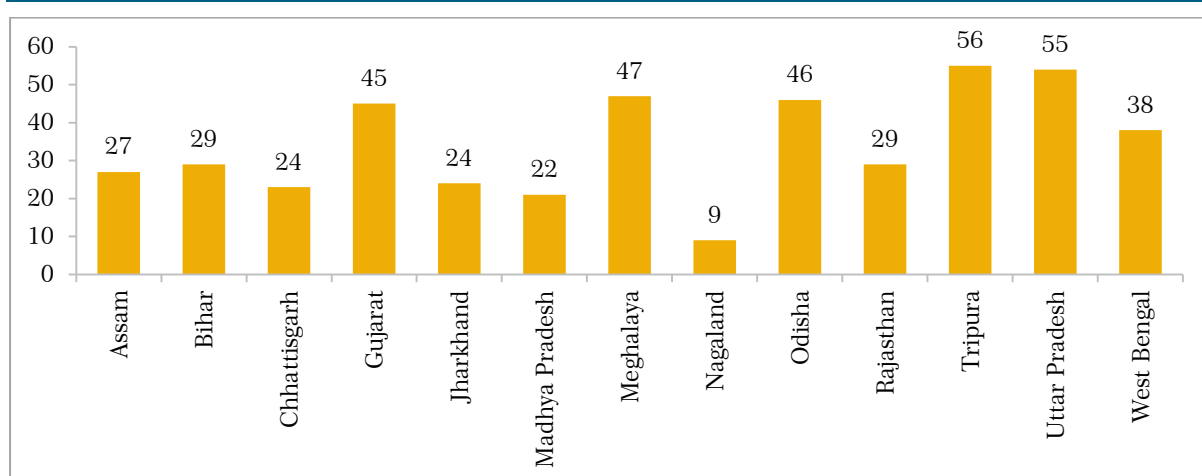
10.4.1 Non-familiarity regarding the usage of LPG stove

Non-familiarity about operating the LPG stove was cited as a barrier by 35% households. This was similar across both female and male respondents. Further, non-familiarity about the usage of LPG stove in naxalite areas is slightly more at 37%.



More than 40% unconnected households surveyed in Uttar Pradesh, Tripura, Meghalaya, Odisha and Gujarat are unfamiliar about the usage of LPG stove. The state-wise summary of percentage of households citing non-familiarity of usage of LPG stove is shown below:

Figure 46: Non-familiarity regarding the usage of LPG stove (in %)

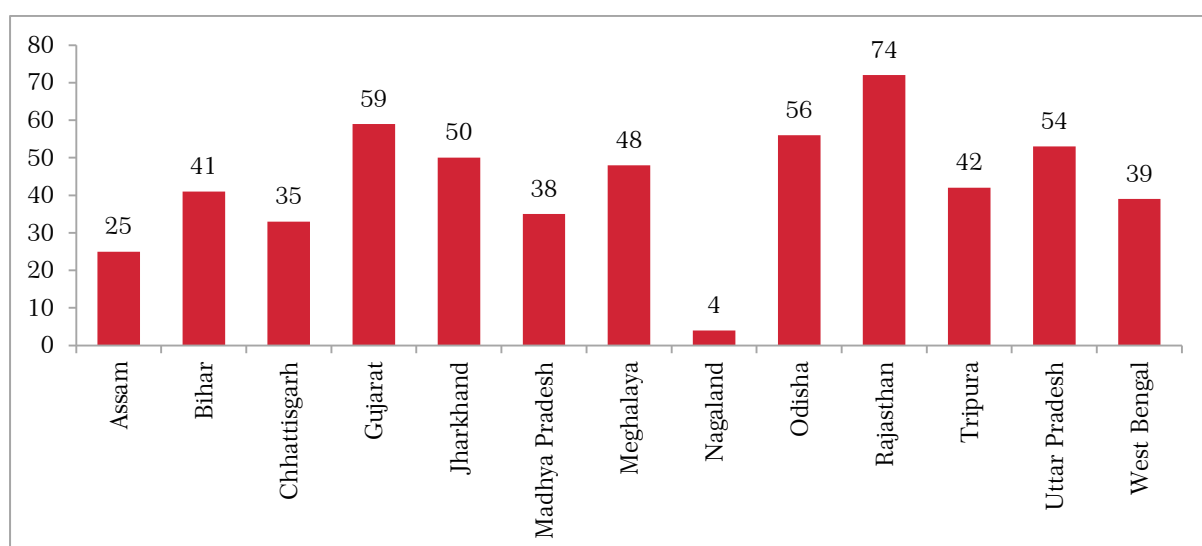


Districts where more than 90% unconnected households are not familiar about using LPG stove are Ambedkar Nagar, Azamgarh, Ghazipur, Hardoi and Sonbhadra in UP and Mayurbhanj in Odisha.

10.4.2 Perception that LPG is not safe to use

Around 46% of households in surveyed states perceive that LPG is not safe to use. This perception was similar across both rural and urban areas. Moreover, 42% women perceive that LPG is not safe to use, whereas this number is higher among male respondents. States where 50% or more households have mentioned safety as a barrier are Rajasthan, Gujarat, Uttar Pradesh, Odisha and Jharkhand. The state-wise summary of percentage of households citing safety as a barrier is shown below:

Figure 47: Households citing safety as a barrier (in %)



Among the states surveyed, 16 districts have been identified as having strong barriers (more than 80% unconnected households) to use LPG due to safety considerations – Banswara, Baran, Dholpur, Dungarpur and Rajsamand in Rajasthan; Ghazipur, Lalitpur, Mirzapur, Sonbhadra, Sultanpur and Hardoi in Uttar Pradesh, Mayurbhanj and Puri in Odisha and Dohad, Narmada and Sabarkantha in Gujarat.

10.4.3 Taste of food cooked on LPG as a barrier

Taste of food cooked on LPG stoves was a significant obstacle among 26% unconnected households in both rural and urban areas. However, taste was somewhat a lower barrier among women, with 24% citing it as a deterrent, compared with 26% among men. Taste is a significant barrier to LPG adoption among households of Odisha (39%), Jharkhand (34%), Rajasthan (34%) and Gujarat (33%). The state-wise percentage of households citing taste as a barrier in accepting LPG as a cooking fuel is summarised below:

Figure 48: Percentage of households identifying taste as a barrier



Cooking of hard grains, such as bajraroti and bati, was considered difficult with LPG in Rajasthan. Roti prepared on firewood or cow-dung cake flame is considered to retain its sweetness, whereas that prepared on LPG flame is considered to result in loss of that sweetness. A significantly 81% unconnected households in Dholpur and 75% in Karauli districts have a preconceived belief that they would not like the taste of food cooked on LPG.

Districts in Uttar Pradesh having a strong resistance to taste of food cooked on LPG are Ghazipur, Mirzapur, Sonbhadra and Sultanpur. More than 60% unconnected households in these districts believe they will not like the food cooked on LPG. The perception is that food may not be fully cooked by the gas flame, particularly on the sides, whereas it gets cooked uniformly using a firewood flame.

With more than 60% households not willing to switch over to LPG due to the taste of food cooked using LPG, there is major reluctance among tribal-dominated districts of Odisha – Malkangiri, Mayurbhanj and Sundargarh. These areas predominantly prepare non-vegetarian food, which is cooked on a slow flame using traditional cooking fuel. They strongly believe that these food items cannot be prepared on an LPG flame.

Nearly 85% households in the tribal-dominated Narmada district of Gujarat were apprehensive of the taste of food cooked using LPG. Traditional food items such as bajra and jowar rotis (thick rotis) are made using traditional cooking methods. In the interior areas, among Adivasi tribes in Gujarat, rotis are made of grass/leaves, which are believed to be feasible to be cooked only through traditional methods such as firewood or cow-dung cake.

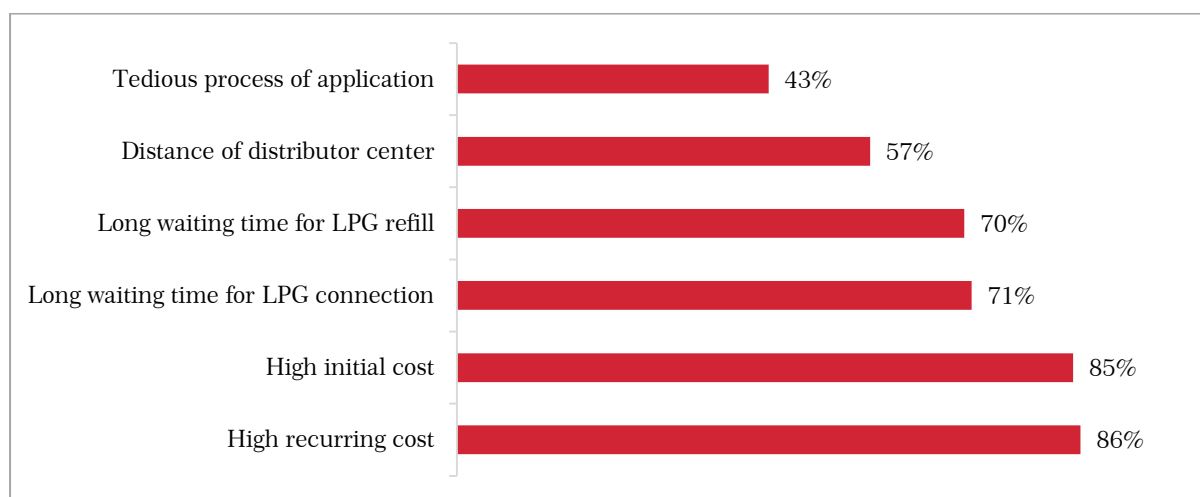
11. Summary of identified barriers in each state

Based on the results of the primary survey, we have identified the top six barriers across all the 13 states surveyed. Addressing these barriers will go a long way in improving LPG penetration. The the state-wise top six barriers across the 13 surveyed states are summarized below.

1. Assam

High recurring cost of LPG refill (86%) and high initial cost (85%) of getting a connection (security deposit plus stove) are the top barriers in Assam, followed by long waiting time to get an LPG connection (71%) and LPG refill (70%). Further, addressing barriers related to distance of distributor centres (57%) and tedious process of application (43%) need to be addressed for better LPG penetration in Assam.

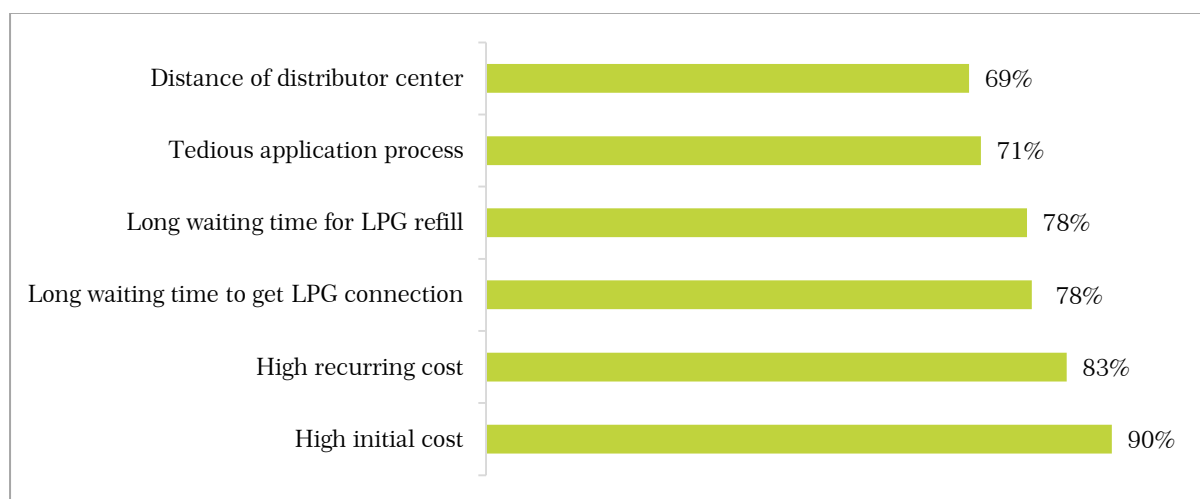
Figure 49: Top six barriers in Assam



2. Bihar

High initial cost (90%) and high recurring cost of cylinder (83%) have emerged as top barriers for LPG conversion among unconnected LPG households in Bihar. Long waiting time to get LPG connection (78%) and long waiting time to get LPG refills (78%) are other prominent barriers, followed by perceptions regarding tedious application process (71%) and concern regarding distance of distributor centres (69%).

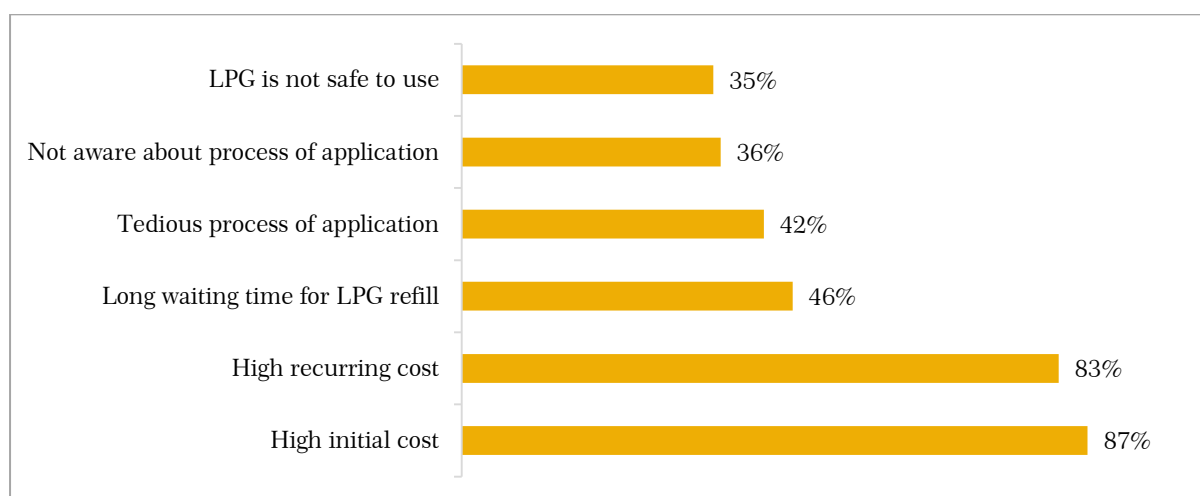
Figure 50: Top six barriers in Bihar



3. Chhattisgarh

High initial cost (87%) is the top conversion barrier. Other top barriers include high recurring cost (83%), long waiting time for LPG refill (46%), perception regarding tedious application process (42%), lack of awareness about application process (36%) and perception that LPG usage is unsafe (35%).

Figure 51: Top six barriers in Chhattisgarh



4. Gujarat

High initial cost (88%) and high recurring cost (74%) are the top barriers; other barriers include long waiting time for LPG connection (73%), distance of the distributor centre (71%), perception regarding safety concern of LPG usage (59%) and tedious process of application (57%).

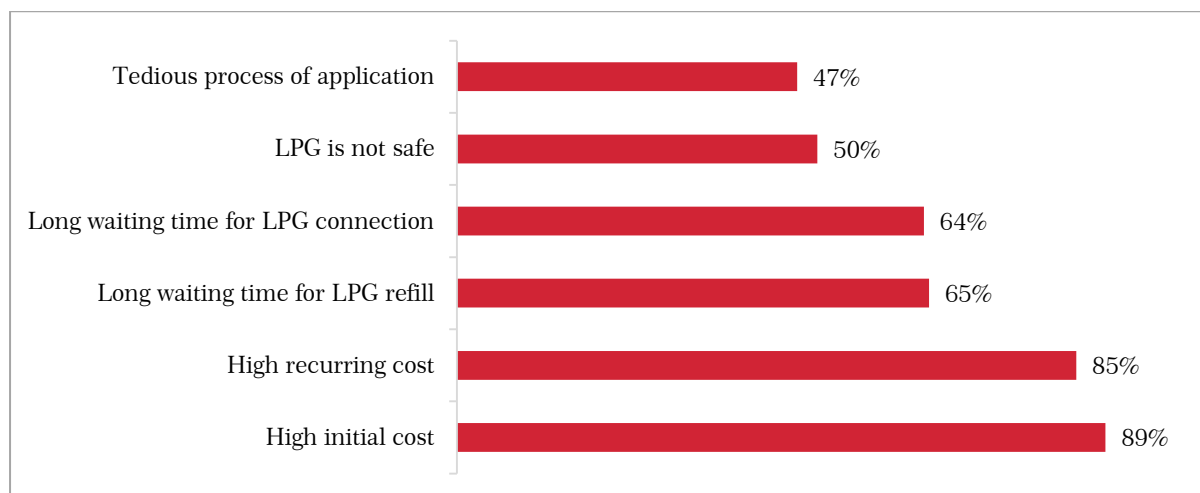
Figure 52: Top six barriers in Gujarat



5. Jharkhand

High initial cost (89%) and high recurring cost (85%) are top two barriers. Other major barriers are long waiting time to get LPG refill (65%), long waiting time to get LPG connection (64%), perception regarding safety concerns about LPG usage (50%) and tedious application process (47%).

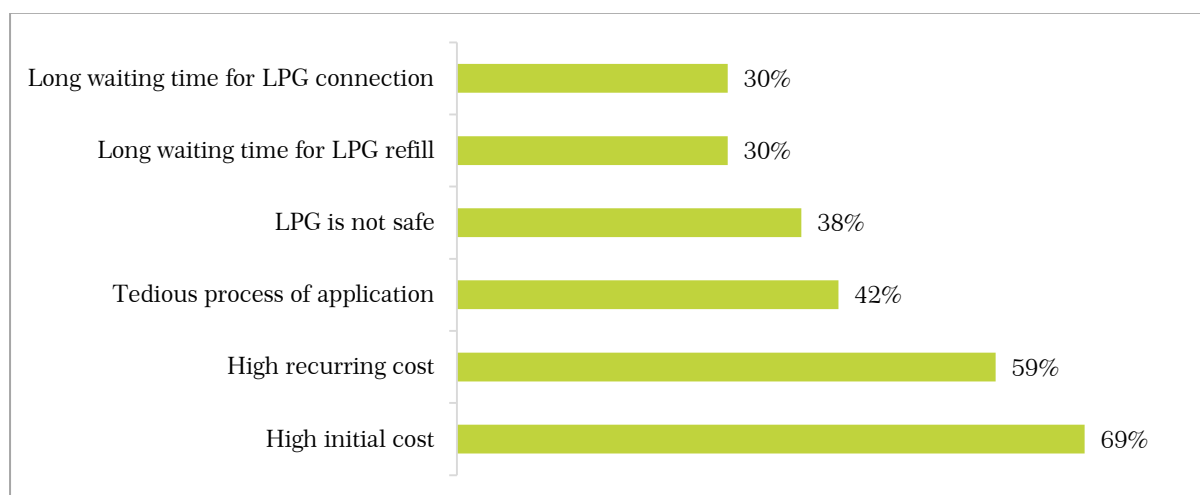
Figure 53: Top six barriers in Jharkhand



6. Madhya Pradesh

Out of the six major barriers, high initial cost (69%) and high recurring cost of LPG refill (59%) are prominent. Next come tedious process of application (42%), perception that LPG is not safe to use (38%), long waiting time for LPG refill (30%) and long waiting time for new LPG connection (30%).

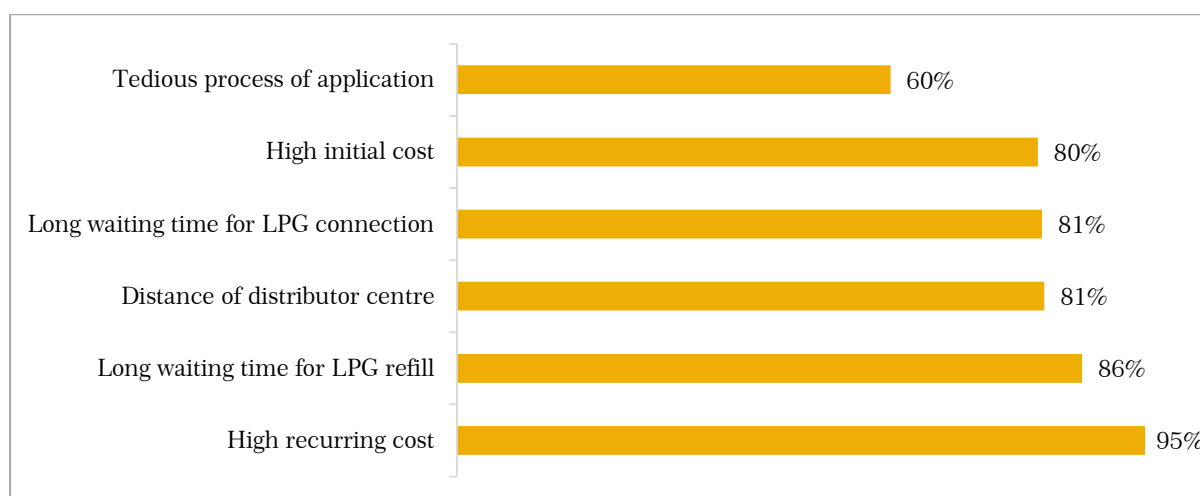
Figure 54: Top six barriers in Madhya Pradesh



7. Meghalaya

High recurring cost of LPG refill (95%) has emerged as the topmost barrier in this state. Others include long waiting time to get LPG refill (86%), distance of distributor centres (81%), long waiting time to get LPG connection (81%), high initial cost (80%) and tedious process of application (60%).

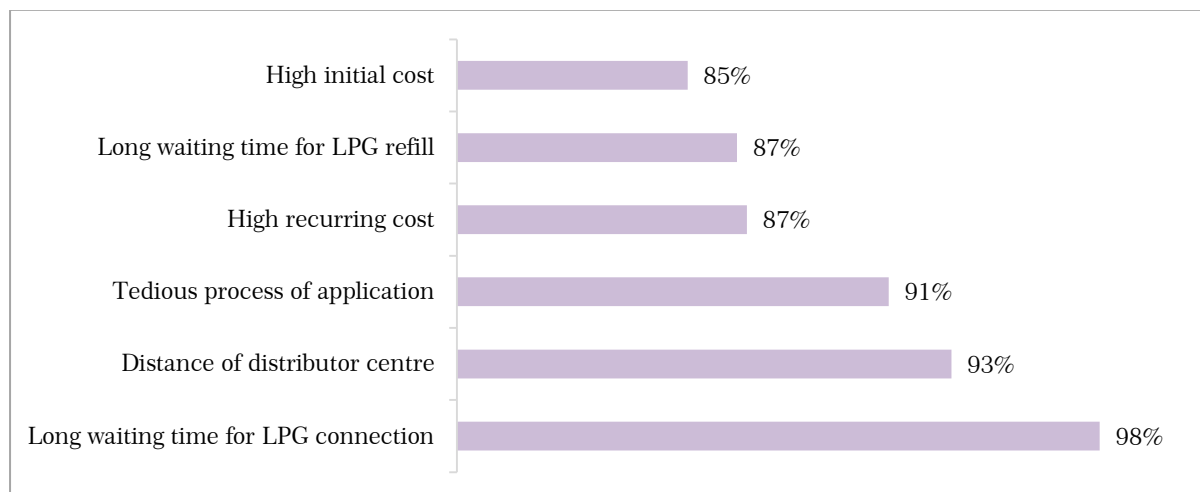
Figure 55: Top six barriers in Meghalaya



8. Nagaland

The top barriers that have emerged in the state of Nagaland include long waiting time to get LPG connection (98%), distance of distributor centre (93%), tedious application process (91%), high recurring cost (87%), long waiting time to get LPG refill (87%) and high initial cost (85%).

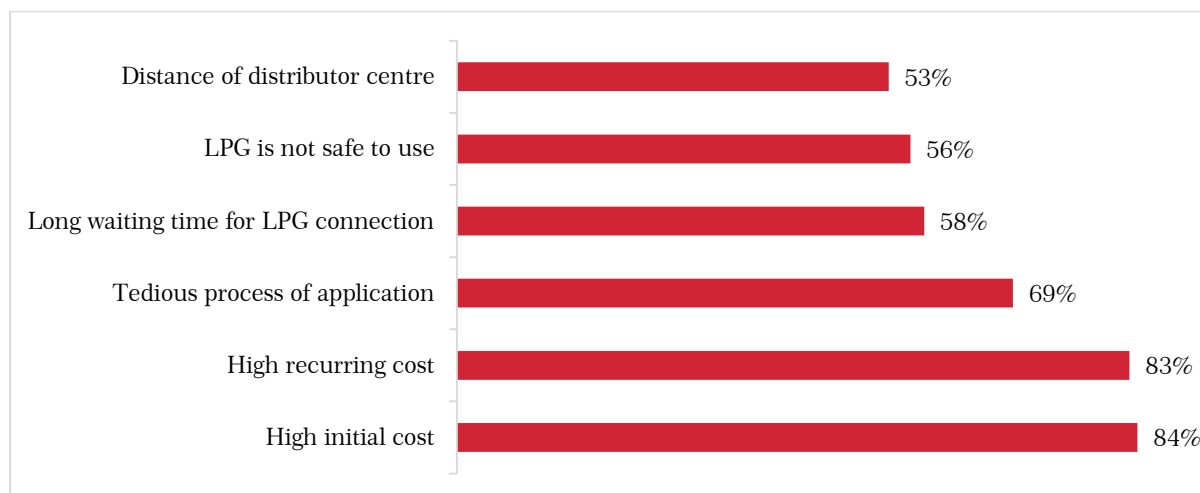
Figure 56: Top six barriers in Nagaland



9. Odisha

The top barriers include high initial cost (84%), high recurring cost (83%), tedious application process (69%), long waiting time for LPG connections (58%), perception that LPG is not safe to use (56%) and distance of distributor centres (53%).

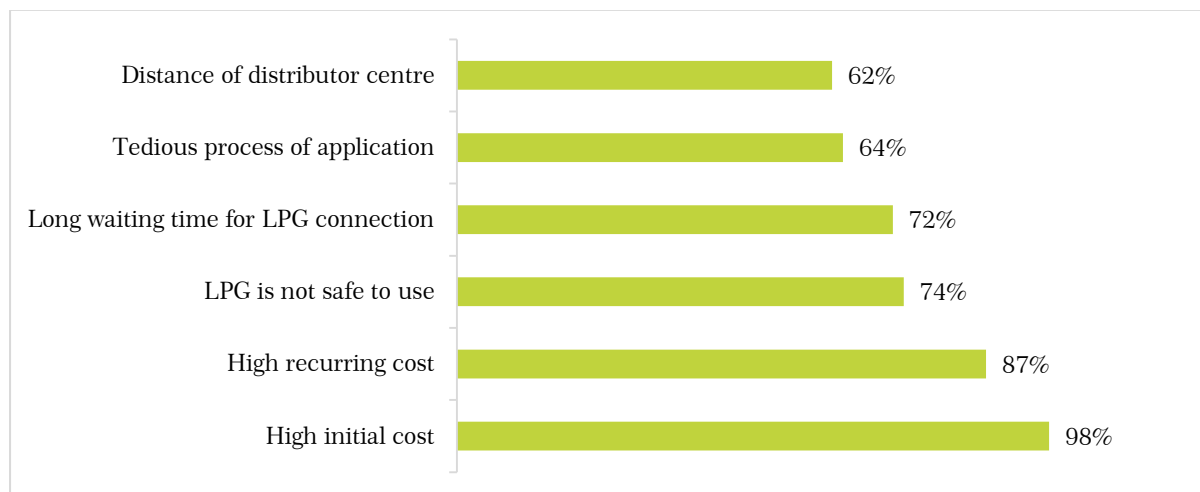
Figure 57: Top six barriers in Odisha



10. Rajasthan

The top barriers in Rajasthan include high initial cost (98%), high recurring cost (87%), perception that LPG is not safe to use (74%), long waiting time for LPG connections (72%), tedious application process (64%) and distance of distributor centre (62%).

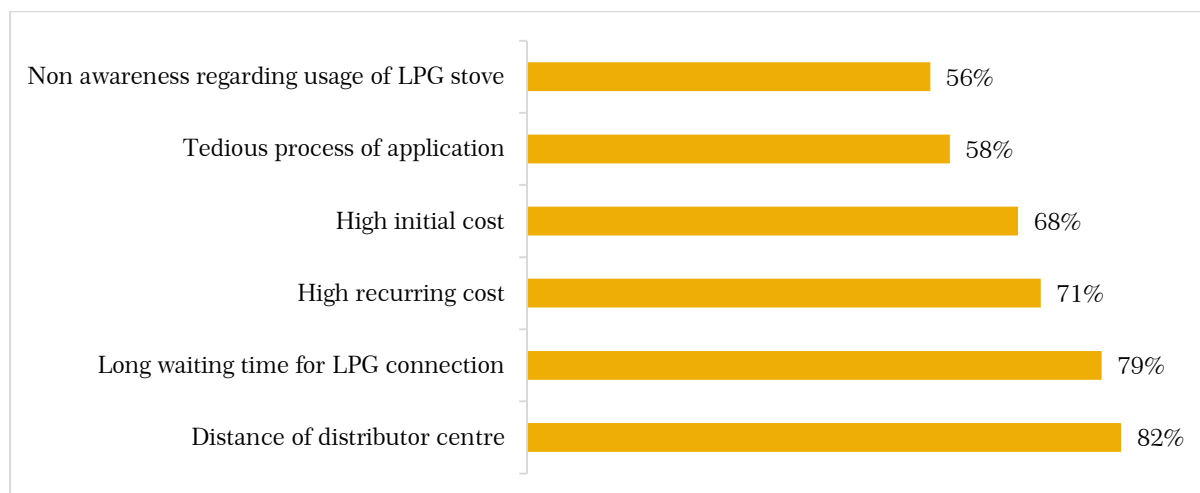
Figure 58: Top six barriers in Rajasthan



11. Tripura

The top barriers in Tripura include distance of distributor centre (82%), long waiting time for LPG connections (79%), high recurring cost (71%), high initial cost (68%), tedious application process (58%), and non-awareness regarding usage of LPG stove (56%).

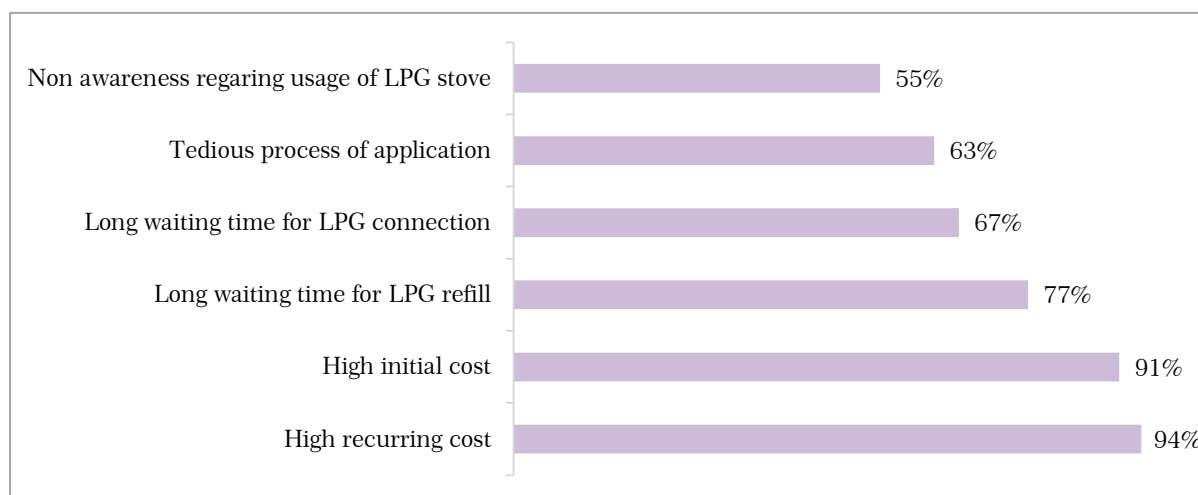
Figure 59: Top six barriers in Tripura



12. Uttar Pradesh

The top barriers include high recurring cost (94%) , high initial cost (91%), long waiting time for LPG refill (77%), long waiting time for LPG connections (67%), tedious application process (63%) and non-awareness regarding usage of LPG stove (55%).

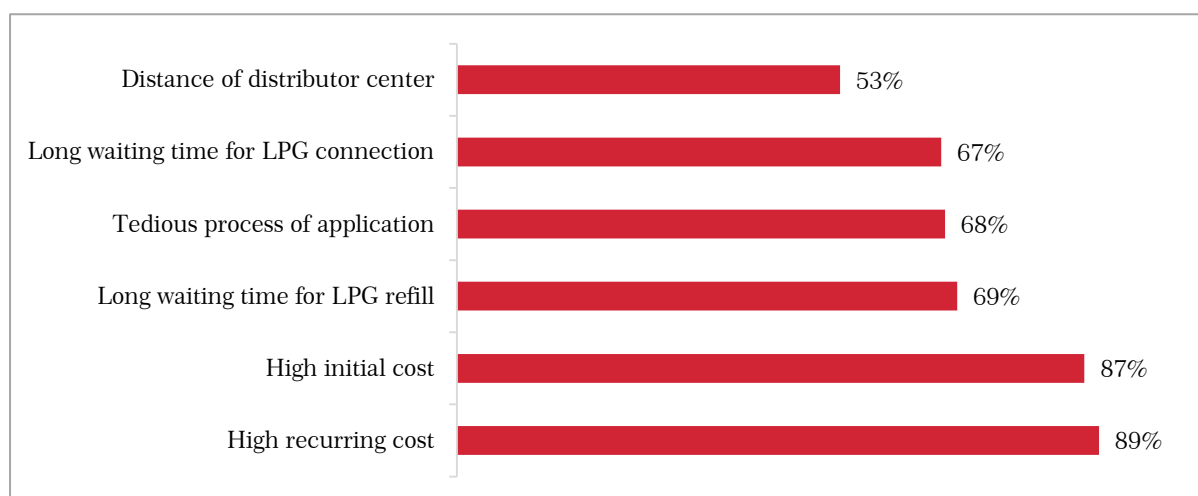
Figure 60: Top six barriers in Uttar Pradesh



13. West Bengal

The top barriers that have emerged in West Bengal include high recurring cost (89%), high initial cost (87%), long waiting time for LPG refill (69%), tedious process of application (68%), long waiting time for getting LPG connections (67%) and distance of distributor centre (53%).

Figure 61: Top six barriers in West Bengal





Addressing concerns related to LPG availability will require long-term efforts in terms of strengthening LPG infrastructure including increasing LPG distributors and making LPG cylinders more available. The concern regarding affordability can be easier addressed by undertaking suitable policy measures of reducing/subsidising initial security deposit and limiting recurring cost of LPG to a manageable level. Issues related to households' perception regarding tedious process of application, safety concern of LPG usage and taste-related barriers can be addressed by conducting necessary awareness campaigns.

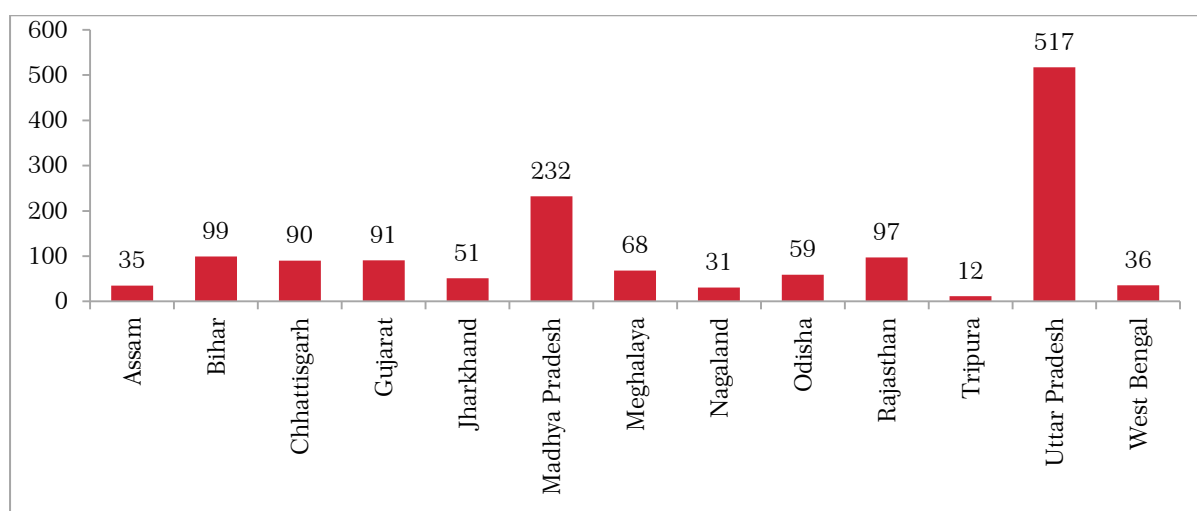
12. Gram panchayat survey

A gram panchayat is the lowest administrative unit in India. It may consist of only one village or a number of villages and hamlets. The selection of villages/gram panchayats was done carefully so that these would properly represent the blocks. In addition to a household survey, detailed gram panchayat-level interviews were carried out to validate the survey’s findings as well as to seek inputs on barriers preventing large-scale LPG penetration and options to address them. The targeted respondent under the survey was the sarpanch or in his absence, other members of the panchayat.

12.1 Gram panchayat sample summary

The survey was conducted across 1,418 gram panchayats in 120 districts of 13 states. The states, along with their distribution, are listed below.

Figure 62: State-wise distribution of gram panchayats surveyed (in numbers)



12.2 Factors driving choice of fuel

Respondents were asked about factors driving fuel choice in their respective villages. Price of the fuel emerged as the most important factor, with nearly 48% respondents citing the same. Other factors cited by the respondents are convenience of usage, ease of availability of fuel, safety and environment. State-wise ranking of factors affecting fuel choice is given in **Annexure 25**.

12.3 Fuel preference for cooking

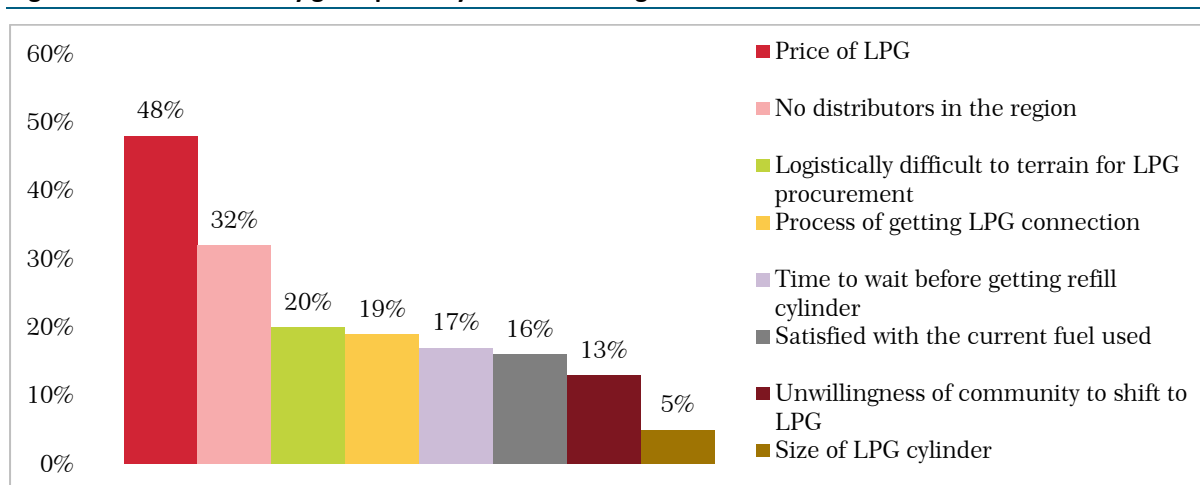
Respondents were asked about their fuel preference for cooking - firewood, dung, coal, biomass, kerosene and LPG. Ease of availability and cost of fuel emerged as the main factors dictating fuel choices, with firewood as the preferred cooking fuel. An awareness drive was suggested to acquaint villagers with LPG benefits. The state-wise ranking is enclosed in **Annexure 26**.

12.4 Barriers to LPG usage

Understanding the barriers that are preventing large-scale LPG penetration is critical for LPG policy formulation. We enquired about the perceived bottlenecks in deepening LPG penetration in different areas.

Based on the survey findings, the initial price of LPG cylinders ranked as the biggest barrier with 48% respondents citing it. Non-availability of LPG distributor centres and difficult terrain were identified as other significant obstacles. Absence of distributors in the region emerged as a bigger barrier than price of the cylinder in Nagaland, Tripura, Assam and Meghalaya.

Figure 63: Barriers cited by gram panchayats for not using LPG



The tedious process of applying for an LPG connection is considered an impediment, particularly in states with low literacy levels. These include Nagaland, Tripura, Assam, Meghalaya, Rajasthan and Odisha.

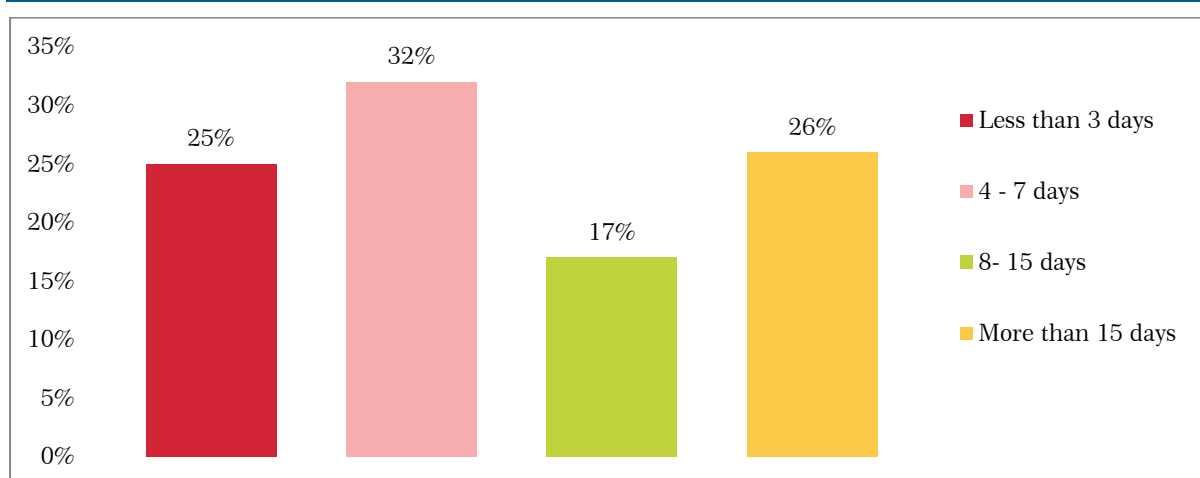
Satisfaction with the current fuel being used by respondents is also cited as a barrier in shifting to LPG in Meghalaya and West Bengal. Detailed state-wise ranking is given in **Annexure 27**.

12.5 Average waiting time to get an LPG refill

Gram panchayats were asked about waiting time for availing of LPG refills, to identify supply/distribution bottlenecks in different states.

The average waiting time to get a LPG refill varies across the targeted states and lies between less than 3 days to more than 15 days. Around 57% respondents want waiting time to be less than 7 days.

Figure 64: Average waiting time for LPG refill (gram panchayat survey)



The majority of panchayats in Nagaland, Tripura, Meghalaya and Assam cited average waiting time for a LPG refill to be more than 15 days. In all states except Rajasthan, the majority of panchayats reported waiting time for LPG refill to be between 4-15 days. The least waiting time was reported in Rajasthan - less than 3 days. State-wise response with respect to average waiting time is given in **Annexure 28**.

12.6 Likely conversion to LPG if supply/availability are addressed

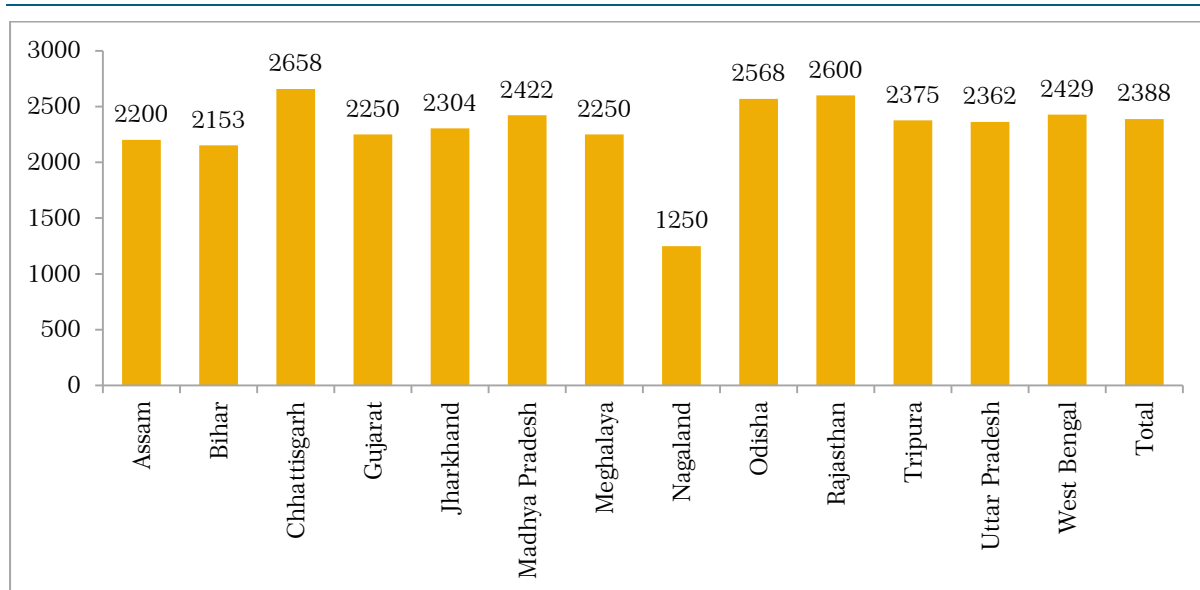
Respondents were questioned about their willingness to convert to LPG if the constraints related to supply/availability of LPG were addressed. The highest likelihood emerged in Bihar, Nagaland, Jharkhand, Rajasthan and Odisha – more than 50% households likely to adopt LPG. Between 25-50% of respondents in Meghalaya, Assam, Chhattisgarh, Madhya Pradesh and Gujarat cited likely conversion. The lowest likelihood (5-25%) was recorded in West Bengal and Tripura. The state-wise summary is shown in **Annexure 29**.

12.7 Acceptable initial cost of connection (including gas stove)

Respondents were asked to quote an initial cost for a LPG connection, at which they would be willing to shift to LPG. The average initial cost (including gas stove)⁴ emerged as Rs 2,388. The highest willingness to pay this initial cost was shown by gram panchayats in Chhattisgarh (Rs 2,658) and the lowest in Nagaland (Rs 1,250). State-wise willingness regarding payment of initial cost is shown in the figure below.

⁴ Except GPs who have not replied to the question

Figure 65: State-wise willingness regarding payment of initial cost (in Rs)

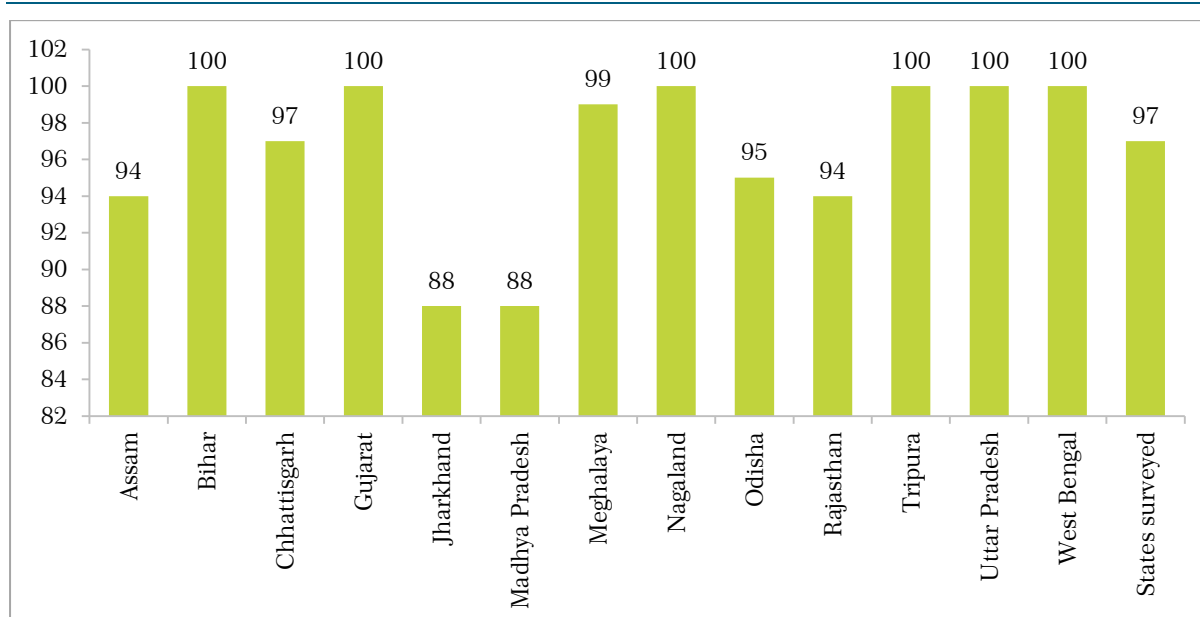


(Total refers to average of all the surveyed states)

12.8 Willingness to promote LPG awareness and usage

Gram panchayats were questioned to assess their willingness to promote LPG usage in their respective areas. The result is illustrated below.

Figure 66: Willingness to promote LPG awareness among gram panchayats across select states in India (in percentage)



Based on the findings, an overwhelming 97% of gram panchayats were willing and forthcoming to lend their support to increasing LPG usage in their areas. State-wise summary is given in **Annexure 30**.

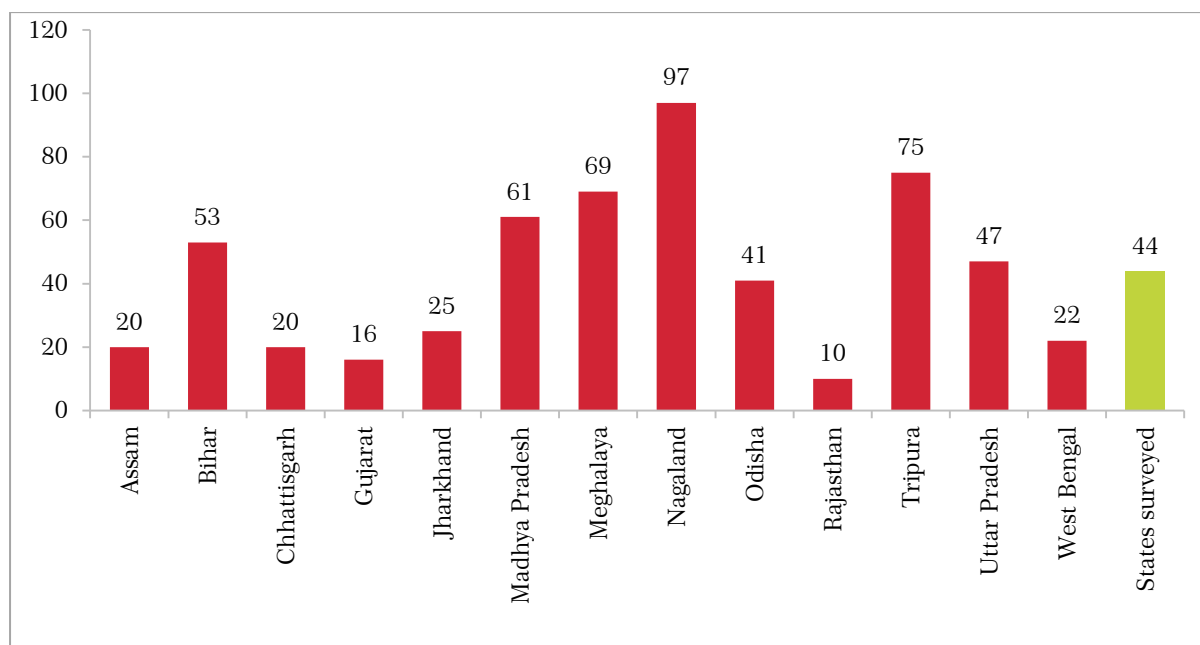
12.9 Willingness to tie up for a distribution model for LPG

The members of gram panchayats were asked about their willingness to tie up with oil marketing companies (OMC) to implement the distribution model for LPG in their respective regions. Almost 78% of panchayat members were willing to set up a distribution model for LPG along with OMCs. GPs in Bihar, Meghalaya, West Bengal and Gujarat reported eagerness to tie up, while those in Tripura, Odisha and Assam were not keen. State-wise summary is given in **Annexure 31**.

12.10 Willingness to promote community kitchens

Respondents were asked about their willingness to promote the concept of community kitchen in their respective regions.

Figure 67: Willingness to promote community kitchens among gram panchayats across select states in India (in percentage)



Around 44% of respondents showed willingness to promote community kitchens. Positive responses were received from panchayats in Nagaland, Tripura and Meghalaya where villages are homogenous and population is small. Rajasthan, Gujarat, Assam and Chhattisgarh were not in favour of the concept. State-wise summary is given in **Annexure 32**.



13. Key observations – In summary

Having identified the various benefits of liquefied petroleum gas (LPG) as a cooking fuel, the Government of India (GoI) has committed to promote LPG's usage as cooking fuel, in the country. The Ministry of Petroleum and Natural Gas (MoPNG) is taking steps to make LPG easily accessible to all sections of the populace; currently, a sizeable population does not have access to it. Consequently, a comprehensive primary survey covering more than 1 lakh unconnected LPG households and around 1,418 gram panchayats across 120 districts in 13 states of India was carried out. This is one of the largest primary surveys of its kind to be completed till date in the energy sector. The survey yielded deep insights on several issues that will require to be tackled with coordinated efforts from stakeholders.

The survey revealed that households are more than willing to accept LPG as their primary source of cooking, if the concerns highlighted by them are addressed. Even the gram panchayat members were forthcoming and willing to extend their cooperation to promote LPG usage in their areas; an astounding 97% agreed to promote LPG once their concerns were addressed.

The concerns derived from the survey can be broadly classified into three areas:

1. **Affordability** of LPG - Including payment of security deposit and recurring refilling charges
2. **Availability** of LPG - Including improving last-mile connectivity (increase distributors)
3. **Awareness** of LPG—Raising awareness about usage of LPG stoves and safety, as well as advantages for health and environment

The master plan for enhancing LPG penetration will need to address the following critical issues:

1. Reduction in upfront cost of LPG connections, particularly for low-income households.
2. Because of stated preference by dominant population surveyed that recurring monthly LPG cost should be either equal to or below their current expenses on cooking fuel or the perception that LPG is an expensive fuel, there is a need for optimisation of costs /creating awareness of LPG usage costs.
3. With a large section having access to valid ID cards and at the same time a significant cross section having concerns regarding the process of applying for LPG connection being tedious, the need for simplifying the process of getting a connection is evident.
4. Given the understanding that the current waiting time for accessing a cylinder is high in various states, debottlenecking the last-mile value chain (by strengthening the distribution system) is crucial.
5. With a dominant section of the population including those residing in rural and hilly terrains enjoying access to mobile phones, using mobile reach in marketing plan of LPG can be considered.
6. Given that a sizeable population have access to bank accounts, it seems possible to extend direct benefit transfer of LPG (DBTL) for most of the targeted set.
7. Taste, cooking patterns and safety-related aspects would need targeted campaigns to resolve misconceptions. Particularly with local food preferences, this may be a necessary intervention for continued LPG usage.

Consequently, to increase LPG penetration, multi-pronged initiatives will be required from all stakeholders involved in different stages of the LPG value chain, to address these key issues of affordability, accessibility and awareness.



While addressing concerns related to accessibility will require longer-term and continued efforts, in terms of strengthening LPG infrastructure by increasing strength of LPG distributors and availability of LPG cylinders, concerns regarding affordability can be addressed by undertaking suitable policy measures, viz., reducing/subsidising initial security deposit and limiting recurring cost of LPG to a manageable level. To promote awareness, a state-wise communication and marketing framework would require to be set up, to address people's stated and unstated perceptions. Finally, the plan must factor in common value chain issues and state/region specifics to be effective.

14. Annexures

Annexure 1: State-wise LPG penetration as on June 1, 2015 (figures in Lakhs)

State/UT	Active customers as in June 2015	Households as per Census 2011	Estimated households as in June 2015	LPG penetration
Chandigarh	2.56	2.35	2.52	101%
Delhi	46.70	33.41	36.42	128%
Haryana	45.25	47.18	51.17	88%
Himachal Pradesh	12.23	14.77	15.58	79%
Jammu & Kashmir	15.77	20.15	22.17	71%
Punjab	58.03	54.10	57.29	101%
Rajasthan	79.86	125.81	137.20	58%
Uttar Pradesh	178.32	329.24	357.51	50%
Uttaranchal	17.88	19.97	21.57	83%
Sub Total North	456.60	646.98	701.42	65%
Andaman & Nicobar	0.66	0.93	0.96	68%
Arunachal Pradesh	1.86	2.62	2.91	64%
Assam	27.80	63.67	68.30	41%
Bihar	59.35	189.41	209.85	28%
Jharkhand	16.98	61.82	67.70	25%
Manipur	2.99	5.07	5.47	55%
Meghalaya	1.32	5.38	6.02	22%
Mizoram	2.53	2.21	2.43	104%
Nagaland	1.78	4.00	3.99	45%
Odisha	26.79	96.61	102.36	26%
Sikkim	1.06	1.28	1.35	78%
Tripura	3.64	8.43	8.96	41%
West Bengal	98.54	200.67	212.44	46%
Sub Total East	245.29	642.10	692.75	35%
Chhattisgarh	17.03	56.23	61.63	28%
Dadra & Nagar Haveli	0.66	0.73	0.90	73%
Daman & Diu	0.57	0.60	0.74	77%
Goa	4.12	3.23	3.34	123%
Gujarat	63.62	121.82	131.81	48%
Madhya Pradesh	63.60	149.68	162.59	39%
Maharashtra	186.30	238.31	254.51	73%
Sub Total West	335.91	570.59	615.52	55%
Andhra Pradesh	91.84	126.04	131.93	70%

State/UT	Active customers as in June 2015	Households as per Census 2011	Estimated households as in June 2015	LPG penetration
Karnataka	96.48	131.80	140.54	69%
Kerala	75.43	77.16	78.77	96%
Lakshadweep	0.04	0.11	0.11	34%
Puducherry	3.15	3.01	3.37	93%
Tamil Nadu	154.71	184.93	197.19	78%
Telangana	73.66	84.21	88.14	84%
Sub Total South	495.31	607.26	640.06	77%
All India	1533.11	2466.93	2649.75	58%

Annexure 2: List of total districts in selected surveyed states

Sr.No.	State Name	District	Division	LPG penetration estimated as on 1 June 2015	Remarks
1	Assam	Karbi Anglong	Hills and Barak Valley	16%	Selected for survey
2	Assam	Udalguri	North Assam	17%	
3	Assam	Hailakandi	Hills and Barak Valley	19%	Selected for survey
4	Assam	North Cachar Hills (Dima Hasao)	Hills and Barak Valley	24%	
5	Assam	Dhubri	Lower Assam	24%	Selected for survey
6	Assam	Baksa	Lower Assam	25%	Selected for survey
7	Assam	Kokrajhar	Lower Assam	25%	
8	Assam	Karimganj	Hills and Barak Valley	29%	
9	Assam	Goalpara	Lower Assam	30%	
10	Assam	Dhemaji	Upper Assam	31%	Selected for survey
11	Assam	Lakhimpur	Upper Assam	31%	
12	Assam	Chirang	Lower Assam	33%	Selected for survey
13	Assam	Golaghat	Upper Assam	33%	Selected for survey
14	Assam	Darrang	North Assam	35%	
15	Assam	Nagaon	North Assam	35%	Selected for



Sr.No.	State Name	District	Division	LPG penetration estimated as on 1 June 2015	Remarks
					survey
16	Assam	Sonitpur	North Assam	36%	Selected for survey
17	Assam	Marigaon	North Assam	37%	
18	Assam	Sivasagar	Upper Assam	37%	
19	Assam	Dibrugarh	Upper Assam	38%	
20	Assam	Tinsukia	Upper Assam	39%	
21	Assam	Bongaigaon	Lower Assam	41%	
22	Assam	Cachar	Hills and Barak Valley	41%	
23	Assam	Barpeta	Lower Assam	48%	
24	Assam	Jorhat	Upper Assam	50%	
25	Assam	Nalbari	Lower Assam	56%	
26	Assam	Kamrup	Lower Assam	73%	
27	Assam	Kamrup Metropolitan	Lower Assam	135%	
TOTAL				40.7%	

Sr.No.	State Name	District	Division	LPG penetration estimated	Remarks
1	Bihar	Araria	Purnea	11%	Selected for survey
2	Bihar	Supaul	Kosi	12%	Selected for survey
3	Bihar	Kishanganj	Purnea	12%	
4	Bihar	Jamui	Munger	15%	Selected for survey
5	Bihar	Katihar	Purnea	15%	Selected for survey
6	Bihar	Banka	Bhagalpur	16%	Selected for survey
7	Bihar	Khagaria	Munger	16%	
8	Bihar	Purnea	Purnea	16%	
9	Bihar	Madhepura	Kosi	16%	
10	Bihar	Saharsa	Kosi	18%	
11	Bihar	Sitamarhi	Tirhut	19%	Selected for survey
12	Bihar	Sheohar	Tirhut	20%	



Sr.No.	State Name	District	Division	LPG penetration estimated	Remarks
13	Bihar	Samastipur	Darbhanga	20%	
14	Bihar	Sheikhpura	Munger	21%	
15	Bihar	Madhubani	Darbhanga	21%	Selected for survey
16	Bihar	Bhabua (Kaimur)	Patna	21%	Selected for survey
17	Bihar	Purba Champaran	Tirhut	24%	Selected for survey
18	Bihar	Pashchim Champaran	Tirhut	24%	
19	Bihar	Lakhisarai	Munger	25%	
20	Bihar	Aurangabad (BH)	Magadh	27%	Selected for survey
21	Bihar	Arwal	Magadh	27%	
22	Bihar	Gaya	Magadh	28%	Selected for survey
23	Bihar	Darbhanga	Darbhanga	28%	
24	Bihar	Begusarai	Munger	28%	Selected for sSurvey
25	Bihar	Nawada	Magadh	29%	
26	Bihar	Bhagalpur	Bhagalpur	31%	
27	Bihar	Muzaffarpur	Tirhut	32%	Selected for survey
28	Bihar	Saran	Saran	33%	Selected for survey
29	Bihar	Nalanda	Patna	34%	Selected for survey
30	Bihar	Vaishali	Tirhut	35%	
31	Bihar	Rohtas	Patna	35%	
32	Bihar	Siwan	Saran	37%	
33	Bihar	Jehanabad	Magadh	38%	
34	Bihar	Buxar	Patna	38%	
35	Bihar	Munger	Munger	38%	
36	Bihar	Gopalganj	Saran	42%	
37	Bihar	Bhojpur	Patna	43%	
38	Bihar	Patna	Patna	82%	
TOTAL				28.3%	



S.No.	State Name	District	Division	LPG penetration estimated	Remarks
1	Chhattisgarh	Bijapur(CGH)	Bastar	6%	
2	Chhattisgarh	Surguja & Balrampur-CH & Surajpur	Surguja	15%	Selected for survey
3	Chhattisgarh	Bastar & Kondagaon	Bastar	18%	Selected for survey
4	Chhattisgarh	Kawardha (Kabeerdham)	Durg	14%	Selected for survey
5	Chhattisgarh	Dantewada & Sukma	Bastar	17%	Selected for survey
6	Chhattisgarh	Kanker	Bastar	17%	
7	Chhattisgarh	Mahasamund	Raipur	18%	Selected for survey
8	Chhattisgarh	Jashpur	Surguja	18%	
9	Chhattisgarh	Raigarh (CH)	Bilaspur	20%	Selected for survey
10	Chhattisgarh	Narayanpur	Bastar	21%	
11	Chhattisgarh	Janjgir – Champa	Bilaspur	21%	
12	Chhattisgarh	Koriya	Surguja	23%	
13	Chhattisgarh	Bilaspur (CH) & Mungeli	Bilaspur	27%	Selected for survey
14	Chhattisgarh	Rajnandgaon	Durg	26%	
15	Chhattisgarh	Korba	Bilaspur	26%	
16	Chhattisgarh	Dhamtari	Raipur	30%	
17	Chhattisgarh	Durg & Balod & Bemetara	Durg	45%	Selected for survey
18	Chhattisgarh	Raipur & Baloda Bazar & Gariyaband	Raipur	45%	Selected for survey
TOTAL				27.6%	

S.No.	State Name	District	Region of Gujarat	LPG penetration estimated	Remarks
1	Gujarat	The Dangs	south	12%	
2	Gujarat	Dohad	Central	16%	Selected for survey
3	Gujarat	Panchmahal & Mahisagar	Central	24%	Selected for survey
4	Gujarat	Narmada	south	16%	Selected for survey

S.No.	State Name	District	Region of Gujarat	LPG penetration estimated	Remarks
5	Gujarat	Sabarkantha & Aravalli	North Gujarat	32%	Selected for survey
6	Gujarat	Kheda	Central	24%	Selected for survey
7	Gujarat	Banaskantha	North Gujarat	28%	Selected for survey
8	Gujarat	Surendranagar	Saurashtra	29%	Selected for survey
9	Gujarat	Tapi	south	30%	
10	Gujarat	Junagadh & Gir Somnath	Saurashtra	43%	
11	Gujarat	Bharuch	south	38%	
12	Gujarat	Bhavnagar & Batod	Saurashtra	47%	
13	Gujarat	Anand	Central	40%	
14	Gujarat	Patan	North Gujarat	41%	
15	Gujarat	Jamnagar & Devbhumi Dwarka	Saurashtra	53%	
16	Gujarat	Rajkot & Morbi	Saurashtra	51%	
17	Gujarat	Gandhinagar	Central	44%	
18	Gujarat	Navsari	south	47%	
19	Gujarat	Valsad	south	47%	
20	Gujarat	Amreli	Saurashtra	49%	
21	Gujarat	Kachchh	Kachchh	49%	
22	Gujarat	Mehsana	North Gujarat	52%	
23	Gujarat	Porbandar	Saurashtra	52%	
24	Gujarat	Vadodara & Chhotaudepur	Central	57%	
25	Gujarat	Surat	south	64%	
26	Gujarat	Ahmedabad	Central	79%	
TOTAL				48.3%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
1	Jharkhand	Jamtara	Santhal Pargana	8%	
2	Jharkhand	Pakur	Santhal Pargana	9%	Selected for survey
3	Jharkhand	Simdega	South Chotanagpur	9%	Selected for survey



S.No.	State Name	District	Division	LPG penetration estimated	Remarks
4	Jharkhand	Latehar	Palamu	10%	Selected for survey
5	Jharkhand	Khunti	South Chotanagpur	10%	Selected for survey
6	Jharkhand	Godda	Santhal Pargana	11%	
7	Jharkhand	Garhwa	Palamu	11%	Selected for survey
8	Jharkhand	Dumka	Santhal Pargana	12%	
9	Jharkhand	Chatra	North Chotanagpur	13%	Selected for survey
10	Jharkhand	Sahibganj	Santhal Pargana	14%	
11	Jharkhand	Pashchimi Singhbhum	Kolhan	14%	Selected for survey
12	Jharkhand	Gumla	South Chotanagpur	16%	
13	Jharkhand	Seraikela-kharsawan	Kolhan	22%	Selected for survey
14	Jharkhand	Palamu	Palamu	22%	
15	Jharkhand	Ramgarh	North Chotanagpur	22%	
16	Jharkhand	Giridih	North Chotanagpur	23%	
17	Jharkhand	Bokaro	North Chotanagpur	25%	Selected for survey
18	Jharkhand	Deoghar	Santhal Pargana	27%	Selected for survey
19	Jharkhand	Hazaribag	North Chotanagpur	27%	
20	Jharkhand	Lohardaga	South Chotanagpur	27%	
21	Jharkhand	Dhanbad	North Chotanagpur	29%	
22	Jharkhand	Koderma	North Chotanagpur	41%	
23	Jharkhand	Purbi Singhbhum	Kolhan	51%	
24	Jharkhand	Ranchi	South Chotanagpur	57%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
TOTAL				25.1%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
1	Meghalaya	West Khasi Hills	Khasi Hills	5%	Selected for survey
2	Meghalaya	East Garo Hills & North Garo Hills	Garo Hills	9%	
3	Meghalaya	South Garo Hills	Garo Hills	6%	
4	Meghalaya	West Garo Hills & South West Garo Hills	Garo Hills	16%	Selected for survey
5	Meghalaya	Ri Bhoi	Khasi Hills	15%	
6	Meghalaya	Jaintia Hills & East Jaintia Hills	Jaintia Hills	23%	Selected for survey
7	Meghalaya	East Khasi Hills	Khasi Hills	41%	
TOTAL				21.9%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
1	Madhya Pradesh	Dindori	Jabalpur	8%	Selected for survey
2	Madhya Pradesh	Alirajpur	Indore	12%	
3	Madhya Pradesh	Sidhi	Rewa	14%	
4	Madhya Pradesh	Jhabua	Indore	15%	Selected for survey
5	Madhya Pradesh	Panna	Sagar	15%	Selected for survey
6	Madhya Pradesh	Singrauli	Rewa	16%	Selected for survey
7	Madhya Pradesh	Umaria	Shahdol	16%	Selected for survey
8	Madhya Pradesh	Tikamgarh	Sagar	18%	
9	Madhya Pradesh	Mandla	Jabalpur	18%	



S.No.	State Name	District	Division	LPG penetration estimated	Remarks
10	Madhya Pradesh	Damoh	Sagar	18%	Selected for survey
11	Madhya Pradesh	Anuppur	Shahdol	19%	
12	Madhya Pradesh	Balaghat	Jabalpur	21%	
13	Madhya Pradesh	Shahdol	Shahdol	22%	
14	Madhya Pradesh	Seoni	Jabalpur	22%	Selected for survey
15	Madhya Pradesh	Shivpuri	Gwalior	22%	
16	Madhya Pradesh	Sheopur	Chambal	22%	Selected for survey
17	Madhya Pradesh	Ashoknagar	Gwalior	22%	Selected for survey
18	Madhya Pradesh	Datia	Gwalior	23%	
19	Madhya Pradesh	Rewa	Rewa	24%	Selected for survey
20	Madhya Pradesh	Chhatarpur	Sagar	25%	
21	Madhya Pradesh	Bhind	Chambal	27%	
22	Madhya Pradesh	Morena	Chambal	27%	
23	Madhya Pradesh	Barwani	Indore	28%	
24	Madhya Pradesh	Satna	Rewa	28%	
25	Madhya Pradesh	East Nimar (Khandwa)	Indore	29%	Selected for survey
26	Madhya Pradesh	Katni	Jabalpur	29%	
27	Madhya Pradesh	Betul	Narmadapur	29%	Selected for survey
28	Madhya Pradesh	Guna	Gwalior	29%	
29	Madhya Pradesh	Rajgarh	Bhopal	30%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
30	Madhya Pradesh	Shajapur & Agar	Ujjain	39%	Selected for survey
31	Madhya Pradesh	Sagar	Sagar	32%	
32	Madhya Pradesh	Raisen	Bhopal	32%	Selected for survey
33	Madhya Pradesh	Narsinghpur	Jabalpur	32%	
34	Madhya Pradesh	Chhindwara	Jabalpur	33%	
35	Madhya Pradesh	Vidisha	Bhopal	35%	
36	Madhya Pradesh	Dhar	Indore	38%	
37	Madhya Pradesh	West Nimar (Khargone)	Indore	38%	
38	Madhya Pradesh	Sehore	Bhopal	42%	
39	Madhya Pradesh	Harda	Narmadapur	43%	
40	Madhya Pradesh	Burhanpur	Indore	49%	
41	Madhya Pradesh	Ratlam	Ujjain	50%	
42	Madhya Pradesh	Mandsaur	Ujjain	50%	
43	Madhya Pradesh	Hoshangabad	Narmadapur	51%	
44	Madhya Pradesh	Dewas	Ujjain	53%	
45	Madhya Pradesh	Neemuch	Ujjain	54%	
46	Madhya Pradesh	Ujjain	Ujjain	72%	
47	Madhya Pradesh	Jabalpur	Jabalpur	72%	
48	Madhya Pradesh	Gwalior	Gwalior	84%	
49	Madhya Pradesh	Bhopal	Bhopal	98%	



S.No.	State Name	District	Division	LPG penetration estimated	Remarks
50	Madhya Pradesh	Indore	Indore	118%	
TOTAL				39%	

S.No.	State Name	District	Region	LPG penetration estimated	Remarks
1	Nagaland	Kiphire	South East	6%	Selected for survey
2	Nagaland	Phek	South East	7%	Selected for survey. Due to landslide, this district was later on changed to Kiphire
3	Nagaland	Mon	North	9%	Selected for survey
4	Nagaland	Peren	South West	10%	Selected for survey
5	Nagaland	Longleng	North	10%	
6	Nagaland	Tuensang	East	17%	
7	Nagaland	Wokha	West	18%	Selected for survey
8	Nagaland	Zunheboto	Centre	23%	
9	Nagaland	Mokokchung	West	49%	
10	Nagaland	Kohima	South West	95%	
11	Nagaland	Dimapur	South West	102%	
TOTAL				44.7%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
1	Odisha	Nabarangpur	South Division	7%	
2	Odisha	Malkangiri	South Division	7%	Selected for survey
3	Odisha	Kalahandi	South Division	9%	Selected for survey
4	Odisha	Boudh	South Division	10%	
5	Odisha	Kandhamal	South Division	10%	
6	Odisha	Nuapada	South Division	10%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
7	Odisha	Mayurbhanj	Central Division	12%	Selected for survey
8	Odisha	Balangir	North Division	13%	
9	Odisha	Deogarh	North Division	13%	
10	Odisha	Bargarh	North Division	15%	Selected for survey
11	Odisha	Subarnapur	North Division	17%	Selected for survey
12	Odisha	Koraput	South Division	19%	
13	Odisha	Rayagada	South Division	21%	
14	Odisha	Keonjhar	North Division	22%	
15	Odisha	Kendrapara	Central Division	24%	
16	Odisha	Nayagarh	Central Division	25%	
17	Odisha	Gajapati	South Division	25%	Selected for survey
18	Odisha	Sambalpur	North Division	26%	
19	Odisha	Bhadrak	Central Division	26%	
20	Odisha	Balasore	Central Division	27%	Selected for survey
21	Odisha	Jagatsinghpur	Central Division	27%	
22	Odisha	Dhenkanal	North Division	27%	
23	Odisha	Jajpur	Central Division	27%	
24	Odisha	Sundargarh	North Division	27%	Selected for survey
25	Odisha	Puri	Central Division	28%	Selected for survey
26	Odisha	Jharsuguda	North Division	30%	
27	Odisha	Angul	North Division	33%	
28	Odisha	Ganjam	South Division	39%	
29	Odisha	Cuttack	Central Division	46%	
30	Odisha	Khurda	Central Division	75%	
TOTAL				26.2%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
1	Rajasthan	Banswara	Udaipur	19%	Selected for survey
2	Rajasthan	Dungarpur	Udaipur	21%	Selected for



S.No.	State Name	District	Division	LPG penetration estimated	Remarks
					survey
3	Rajasthan	Pratapgarh (RJ)	Udaipur	29%	
4	Rajasthan	Dhaulpur	Bharatpur	34%	Selected for survey
5	Rajasthan	Barmer	Jodhpur	34%	Selected for survey
6	Rajasthan	Rajsamand	Udaipur	38%	Selected for survey
7	Rajasthan	Jalor	Jodhpur	41%	
8	Rajasthan	Jhalawar	Kota	41%	
9	Rajasthan	Jaisalmer	Jodhpur	42%	
10	Rajasthan	Tonk	Ajmer	42%	Selected for survey
11	Rajasthan	Udaipur	Udaipur	43%	
12	Rajasthan	Baran	Kota	44%	Selected for survey
13	Rajasthan	Dausa	Jaipur	44%	Selected for survey
14	Rajasthan	Bharatpur	Bharatpur	44%	
15	Rajasthan	Chittorgarh	Udaipur	45%	
16	Rajasthan	Karauli	Bharatpur	46%	Selected for survey
17	Rajasthan	Sawai Madhopur	Bharatpur	47%	
18	Rajasthan	Nagaur	Ajmer	48%	
19	Rajasthan	Sirohi	Jodhpur	51%	
20	Rajasthan	Alwar	Jaipur	52%	
21	Rajasthan	Bundi	Kota	53%	
22	Rajasthan	Pali	Jodhpur	55%	
23	Rajasthan	Bhilwara	Ajmer	55%	
24	Rajasthan	Churu	Bikaner	59%	
25	Rajasthan	Hanumangarh	Bikaner	63%	
26	Rajasthan	Bikaner	Bikaner	64%	
27	Rajasthan	Ajmer	Ajmer	74%	
28	Rajasthan	Ganganagar	Bikaner	74%	
29	Rajasthan	Jodhpur	Jodhpur	79%	
30	Rajasthan	Sikar	Jaipur	79%	
31	Rajasthan	Kota	Kota	83%	
32	Rajasthan	Jhunjhunu	Jaipur	83%	
33	Rajasthan	Jaipur	Jaipur	109%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
TOTAL				58.2%	

S.No.	State Name	District	Region	LPG penetration estimated	Remarks
1	Tripura	South Tripura & Gomati	South	38%	Selected for survey
2	Tripura	North Tripura & Unakoti	North	31%	
3	Tripura	Dhalai	Central	26%	
4	Tripura	West Tripura & Khowai & Sepahijala	West	48%	Selected for survey
TOTAL				40.7%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
1	Uttar Pradesh	Shravasti	Devipatan	16%	
2	Uttar Pradesh	Balrampur	Devipatan	19%	Selected for survey
3	Uttar Pradesh	Sonbhadra	Mirzapur	21%	Selected for survey
4	Uttar Pradesh	Chitrakoot	Chitrakoot	22%	Selected for survey
5	Uttar Pradesh	Budaun	Bareilly	22%	Selected for survey
6	Uttar Pradesh	Banda	Chitrakoot	24%	Selected for survey
7	Uttar Pradesh	Mahoba	Chitrakoot	25%	
8	Uttar Pradesh	Lalitpur	Jhansi	26%	Selected for survey
9	Uttar Pradesh	Hardoi	Lucknow	27%	Selected for survey
10	Uttar Pradesh	Hamirpur (UP)	Chitrakoot	29%	
11	Uttar Pradesh	Bahraich	Devipatan	29%	Selected for survey
12	Uttar Pradesh	Sultanpur & Amethi	Faizabad	30%	Selected for survey
13	Uttar Pradesh	Pilibhit	Bareilly	30%	
14	Uttar Pradesh	Kanshiram Nagar	Aligarh	31%	Selected for



S.No.	State Name	District	Division	LPG penetration estimated	Remarks
					survey
15	Uttar Pradesh	Rae Bareli	Lucknow	31%	
16	Uttar Pradesh	Sant Kabir Nagar	Basti	32%	Selected for survey
17	Uttar Pradesh	Fatehpur	Allahabad	32%	Selected for survey
18	Uttar Pradesh	Sitapur	Lucknow	32%	
19	Uttar Pradesh	Gonda	Devipatan	33%	
20	Uttar Pradesh	Ambedkar Nagar	Faizabad	33%	Selected for survey
21	Uttar Pradesh	Jaunpur	Varanasi	33%	Selected for survey
22	Uttar Pradesh	Lakhimpur-Kheri	Lucknow	33%	Selected for survey
23	Uttar Pradesh	Maharajganj	Gorakhpur	34%	Selected for survey
24	Uttar Pradesh	Chandauli	Varanasi	34%	
25	Uttar Pradesh	Muzaffarnagar & Shamli	Saharanpur	35%	Selected for survey
26	Uttar Pradesh	Mirzapur	Mirzapur	35%	Selected for survey
27	Uttar Pradesh	Kaushambi	Allahabad	35%	
28	Uttar Pradesh	Ghazipur	Varanasi	36%	Selected for survey
29	Uttar Pradesh	Pratapgarh (UP)	Allahabad	37%	
30	Uttar Pradesh	Moradabad & Sambhal	Moradabad	37%	
31	Uttar Pradesh	Kannauj	Kanpur	37%	Selected for survey
32	Uttar Pradesh	Azamgarh	Azamgarh	37%	Selected for survey
33	Uttar Pradesh	Etah	Aligarh	38%	
34	Uttar Pradesh	Rampur	Moradabad	38%	Selected for survey
35	Uttar Pradesh	Siddharthnagar	Basti	38%	
36	Uttar Pradesh	Basti	Basti	39%	
37	Uttar Pradesh	Unnao	Lucknow	40%	
38	Uttar Pradesh	Farrukhabad	Kanpur	41%	
39	Uttar Pradesh	Kanpur Dehat	Kanpur	42%	
40	Uttar Pradesh	Jalaun	Jhansi	42%	



S.No.	State Name	District	Division	LPG penetration estimated	Remarks
41	Uttar Pradesh	Mau	Azamgarh	43%	
42	Uttar Pradesh	Shahjahanpur	Bareilly	44%	
43	Uttar Pradesh	Ballia	Azamgarh	45%	
44	Uttar Pradesh	Mainpuri	Agra	46%	
45	Uttar Pradesh	Hathras (Mahamaya)	Aligarh	47%	
46	Uttar Pradesh	Barabanki	Faizabad	48%	
47	Uttar Pradesh	Etawah	Kanpur	48%	
48	Uttar Pradesh	Sant Ravidas Nagar Bhadohi	Mirzapur	50%	
49	Uttar Pradesh	Bijnor	Moradabad	50%	
50	Uttar Pradesh	Kushinagar	Gorakhpur	51%	
51	Uttar Pradesh	Auraiya	Kanpur	52%	
52	Uttar Pradesh	Jyotiba Phule Nagar	Moradabad	52%	
53	Uttar Pradesh	Faizabad	Faizabad	55%	
54	Uttar Pradesh	Allahabad	Allahabad	59%	
55	Uttar Pradesh	Jhansi	Jhansi	60%	
56	Uttar Pradesh	Aligarh	Aligarh	60%	
57	Uttar Pradesh	Saharanpur	Saharanpur	61%	
58	Uttar Pradesh	Firozabad	Agra	61%	
59	Uttar Pradesh	Bareilly	Bareilly	61%	
60	Uttar Pradesh	Bulandshahr	Meerut	62%	
61	Uttar Pradesh	Deoria	Gorakhpur	63%	
62	Uttar Pradesh	Baghpat	Meerut	67%	
63	Uttar Pradesh	Mathura	Agra	70%	
64	Uttar Pradesh	Gorakhpur	Gorakhpur	71%	
65	Uttar Pradesh	Agra	Agra	77%	
66	Uttar Pradesh	Kanpur Nagar	Kanpur	82%	
67	Uttar Pradesh	Varanasi	Varanasi	83%	
68	Uttar Pradesh	Ghaziabad & Hapur	Meerut	83%	
69	Uttar Pradesh	Meerut	Meerut	86%	
70	Uttar Pradesh	Lucknow	Lucknow	101%	
71	Uttar Pradesh	Gautam Buddha Nagar	Meerut	140%	
		TOTAL		49.9%	

S.No.	State Name	District	Division	LPG penetration estimated	Remarks
1	West Bengal	Jalpaiguri &	Jalpaiguri	30%	Selected for



S.No.	State Name	District	Division	LPG penetration estimated	Remarks
		Alipurduar			survey
2	West Bengal	Purulia	Burdwan	18%	Selected for survey
3	West Bengal	Uttar Dinajpur	Jalpaiguri	19%	
4	West Bengal	Dakshin Dinajpur	Jalpaiguri	23%	
5	West Bengal	Bankura	Burdwan	24%	
6	West Bengal	Cooch Behar	Jalpaiguri	24%	Selected for survey
7	West Bengal	Malda	Jalpaiguri	24%	
8	West Bengal	Murshidabad	Presidency division	25%	Selected for sSurvey
9	West Bengal	Purbo Medinipur	Burdwan	25%	Selected for survey
10	West Bengal	Birbhum	Burdwan	30%	
11	West Bengal	Paschim Medinipur	Burdwan	34%	Selected for survey
12	West Bengal	South 24 Parganas	Presidency	35%	Selected for survey
13	West Bengal	Burdwan	Burdwan	49%	
14	West Bengal	Nadia	Presidency	50%	
15	West Bengal	Hooghly	Burdwan	66%	
16	West Bengal	Howrah	Presidency	71%	
17	West Bengal	North 24 Parganas	Presidency	72%	
18	West Bengal	Darjeeling	Jalpaiguri	103%	
19	West Bengal	Kolkata	Presidency	118%	
		TOTAL		46.4%	

Annexure 3: Selected districts in the survey and their topography

State	District	No of gram panchayats covered	Sample plan	Sub-district/Block	Sample achieved
Assam	Dhemaji	4	800	Sissibargaon	800
	Hailakandi	4	800	Lala	800
	Karbi Anglong	4	800	Rangkhang	800
	Chirang	4	800	Bijni (Pt)	800
	Baksa	4	800	Goreswar (Pt)	800
	Dhubri	3	800	Dhubri (Pt)	404
				Mankachar	396
	Golaghat	4	800	Sarupathar	800

State	District	No of gram panchayats covered	Sample plan	Sub-district/Block	Sample achieved
Bihar	Nagaon	4	800	Rupahi	393
				Lanka	407
	Sonitpur	4	800	Dhekiajuli (Pt)	800
	Araria	5	1000	Araria	1000
	Aurangabad	8	800	Aurangabad	396
				Rafiganj	404
	Banka	4	800	Banka	372
				Dhuraiya	428
	Begusarai	8	1000	Begusarai	323
				Chhorahi	677
	Gaya	9	1000	Bodh Gaya	521
				Mohanpur	479
	Jamui	7	800	Chakai	406
				Jamui	394
	Kaimur (Bhabua)	7	800	Bhabua	389
				Chainpur	411
	Katihar	7	1000	Kadwa	838
				Katihar	162
				Ladania	484
	Madhubani	6	1000	Madhubani	516
Muzaffarpur				499	
Muzaffarpur	6	1000	Kanti	499	
			Minapur	501	
Nalanda	9	800	Bihar	411	
			Hilsa	389	
Purbi Champaran	4	1000	Chiraiya	527	
			Motihari	473	
Saran	7	1000	Dariapur	493	
			Sonepur	507	
Sitamarhi	6	1000	Bathnaha	489	
			Dumra	511	
Supaul	6	1000	Kishanpur	365	
			Supaul	635	
Chhattisgarh	Bastar	11	800	Bastar	800
	Bilaspur	10	1000	Takhatpur	1000
	Dantewada	12	800	Gidam	226
				Dantewada	574
	Durg	14	1000	Dhamdha	1000
	Kabirdham	11	800	Kawardha	800
	Raigarh	7	800	Kharsia	409
				Pusour	391



State	District	No of gram panchayats covered	Sample plan	Sub-district/Block	Sample achieved
	Raipur	10	1000	Abhanpur	1000
	Surguja	9	1000	Lakhanpur	500
				Sitapur	500
	Mahasamund	6	800	Pithora	800
Gujarat	Banaskantha	21	1000	Deesa	481
				Tharad	519
	Dohad	15	800	Dohad	383
				Limkheda	417
	Kheda	10	800	Kathlal	800
	Narmada	3	800	Dediapada	800
	Panchmahal	5	1000	Kalol	524
				Shehera	476
	Sabarkantha	20	1000	Khedbrahma	495
				Vijaynagar	505
	Surendranagar	17	800	Chotila	800
Jharkhand	Bokaro	10	800	Chandankiyari	393
				Chas	407
	Chatra	5	800	Chatra	479
				Shaligram Ram Narayanpur(Hunterganj)	321
	Deoghar	5	800	Madhupur	800
	Garhwa	3	800	Garhwa	475
				Meral (Pipra Kalan)	325
	Latehar	4	800	Latehar	800
	Pakur	9	800	Pakaur	800
	Saraikelel Kharsawan	5	800	Saraikelel	800
	Simdega	2	800	Thethaitangar	43
				Simdega	757
	West Singhbhum	4	800	Chakradharpur	492
				Sonua	308
	Khunti	4	800	Khunti	800
Madhya Pradesh	Ashoknagar	17	800	Ashoknagar	402
				Chanderi	398
	Betul	17	800	Betul	408
				Bhainsdehi	392
	Damoh	15	800	Damoh	394
				Jabera	406
	East Nimar	15	800	Harsud	413
				Khandwa	387
	Jhabua	17	800	Jhabua	354
				Thandla	446

State	District	No of gram panchayats covered	Sample plan	Sub-district/Block	Sample achieved
	Panna	19	800	Ajaigarh	360
				Panna	440
	Rewa	18	1000	Hanumana	502
				Sirmour	498
	Seoni	18	800	Ghansaur	417
				Seoni	383
	Shajapur	17	800	Momon Badodia	382
				Shajapur	418
	Sheopur	17	800	Sheopur	390
				Vijaypur	410
	Umaria	17	800	Bandhogarh	382
				Pali	418
	Singrauli	16	800	Chitrangi	321
				Singrauli	479
	Dindori	15	800	Shahpura	479
				Dindhori	321
	Raisen	14	800	Raisen	426
				Udaipura	374
Meghalaya	Jaintia Hills	22	800	Thadlaskein	800
	West Garo Hills	23	800	Rongram	800
	West Khasi Hills	23	800	Mairang	800
Nagaland	Mon	9	800	Mon Sadar	312
				Tizit	250
				Wakching	238
	Kiphire	6	800	Lomgmatra	400
				Pungro	400
	Wokha	9	800	Aitepyong	200
				Bhandari	348
				Wokha Sadar	252
	Peren	7	800	Jalukie	382
				Tening	418
Odisha	Baleshwar	3	1000	Singla	325
				Soro	675
	Bargarh	7	800	Bargarh	399
				Bijepur	401
	Gajapati	8	800	Rayagada	800
	Kalahandi	7	800	Junagarh	800
	Malkangiri	7	800	Malkangiri	476
				Mathili	324
	Mayurbhanj	9	1000	Karanja	508
				Udala	492



State	District	No of gram panchayats covered	Sample plan	Sub-district/Block	Sample achieved
	Puri	7	800	Konark	356
				Nimapada	444
	Sonepur	4	800	Tarbha	800
	Sundargarh	7	800	Biramitrapur	480
				Bisra	320
Rajasthan	Banswara	11	800	Banswara	330
				Kushalgarh	470
	Baran	11	800	Chhabra	800
	Barmer	12	800	Barmer	25
				Gudha Malani	775
	Dausa	10	800	Dausa	145
				Lalsot	655
	Dholpur	10	800	Bari	660
				Dhaulpur	140
	Dungarpur	11	800	Dungarpur	160
				Simalwara	640
	Karauli	11	800	Karauli	124
				Sapotra	676
	Rajsamand	11	800	Bhim	731
				Rajsamand	69
	Tonk	10	800	Deoli	162
				Tonk	638
Tripura	South Tripura	6	800	Rajnagar	399
				Satchand	401
	West Tripura	6	800	Hezamara	408
				Mohanpur	392
Uttar Pradesh	Ambedkar Nagar	24	800	Akbarpur	410
				Jalalpur	390
	Azamgarh	24	1000	Azamgarh	505
				Phulpur	495
	Bahraich	24	1000	Bahraich	460
				Nanpara	540
	Balrampur	24	800	Balrampur	352
				Tulsipur	448
	Banda	25	800	Baberu	355
				Banda	445
	Budaun	22	1000	Budaun	149
				Sahaswan	851
	Chitrakoot	23	800	Karwi	389
				Mau	411

State	District	No of gram panchayats covered	Sample plan	Sub-district/Block	Sample achieved
	Fatehpur	24	800	Fatehpur	507
				Khaga	293
	Hardoi	24	1000	Hardoi	499
				Sandila	501
	Jaunpur	24	1000	Jaunpur	477
				Machhlishahr	523
	Kannauj	25	800	Chhibramau	775
				Kannauj	25
	Kheri	16	1000	Lakhimpur	1000
	Lalitpur	24	800	Lalitpur	359
				Mahroni	441
	Maharajganj	25	800	Maharajganj	358
				Nichlaul	442
	Mirzapur	24	800	Chunar	395
				Mirzapur	405
	Rampur	27	800	Rampur	411
				Shahabad	389
	Sant Kabeer Nagar	24	800	Khalilabad	404
				Mehdawal	396
	Sonbhadra	24	800	Dudhi	397
				Robertsganj	403
	Sultanpur	24	1000	Kadipur	516
				Sultanpur	484
	Kasganj	24	800	Kasganj	469
				Sahawar	331
	Ghazipur	24	800	Ghazipur	398
				Zamania	402
	Muzaffarnagar	18	1000	Purkazi	420
				Muzaffarnagar	580
West Bengal	24 Parganas South	5	1000	Baruipur	495
				Jaynagar - II	505
	Jalpaiguri	5	1000	Dhupguri	1000
	Medinipur East	5	1000	Kolaghat	493
				Nandigram - I	507
	Medinipur West	5	1000	Keshpur	424
				Kharagpur - I	576
	Murshidabad	5	1000	Berhampore	505
				Nabagram	495
	Purulia	5	1000	Arsha	504
				Kashipur	496



State	District	No of gram panchayats covered	Sample plan	Sub-district/Block	Sample achieved
	Cooch Behar	6	1000	Mekliganj	500
				Cooch Behar -1	500

Annexure 4: Household primary survey questionnaires



NAME OF INTERVIEWER _____	DATE OF INTERVIEW	DD	MM	YY	1	5
CHECKED BY SUPERVISOR _____	SERIAL NO.					

HOUSEHOLD QUESTIONNAIRE

Good day! We are from Prastut Consulting Pvt. Ltd, a reputed market research company in Delhi. We are visiting you on behalf of PPAC. PPAC would like to understand various issues in the consumption of LPG especially in the areas of low LPG penetration in India, primary research in the state is being conducted in the regions where LPG penetration is below par. We request you to co-operate in this survey to enable supply of clean fuels to homes.

SECTION ONE- GEOGRAPHIC AREA DETAILS (Investigator to fill complete details)

LOCATION (Tick)	<input type="checkbox"/> (1) RURAL	<input type="checkbox"/> (2) URBAN	STATE (Mention)	
DISTRICT (Mention)			SUB DISTRICT (Mention)	
BLOCK (Mention)			VILLAGE/ TOWN (Mention)	
GP (Mention)				

SECTION TWO – RESPONDENT SELECTION CRITERIA

Name of Respondent	First Name	Middle Name	Surname/Family Name
Gender	<input type="checkbox"/> (1) Male		<input type="checkbox"/> (2) Female
CWE	Do you contribute the most to the household expenses or are you a decision maker towards the major expenses for the household?		<input type="checkbox"/> (1) Yes CONTINUE <input type="checkbox"/> (2) NO TERMINATE
LPG Connection	Do you have an LPG connection (Have your consumer number so that you can book the LPG cylinder)?		<input type="checkbox"/> (1) Yes TERMINATE <input type="checkbox"/> (2) NO CONTINUE

SECTION THREE – CURRENT FUEL CONSUMPTION

Q1. You must be using different types of fuels at home for cooking, heating water and lighting etc. May I know which are the fuels used at present in your home? (Tick one or multiple as applicable)

<input type="checkbox"/> (1) Firewood	<input type="checkbox"/> (2) Biomass (Crop residue)	<input type="checkbox"/> (3) Cow dung cake / Upla	<input type="checkbox"/> (4) Kerosene	<input type="checkbox"/> (5) Coal / Charcoal
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Q2. What is the major use of fuel in the household? (Please tick usage of upto two major fuels for each activity)

Activity	Firewood	Biomass (Crop residue, biogas)	Cow dung cake/ Upla	Kerosene	Coal/ Charcoal
a) Cooking and water heating					
b) Lighting					
c) Others, Pls. specify _____					

Q3. What is the quantity of fuel used in the household for cooking? (Please mention quantity consumed per month and expenses per month)

Fuel source	Units	Quantity used / month	Expenses (Rs. / month)
a) Firewood	Kgs		
b) Biomass (Crop residue, biogas)	Kgs		
c) Cow dung cake / Upla	Kgs		
d) Kerosene	Lts		
e) Coal / Charcoal	Kgs		
Total Expenses on Fuel (Rs. / month)			

SECTION FOUR – LPG AWARENESS, APPLICATION, BARRIERS, INTENT

Q4. Are you aware about LPG cylinder used for cooking purpose in households?	<input type="checkbox"/> (1) YES	<input type="checkbox"/> (2) NO			
Q5. Have you applied for an LPG connection anytime?	<input type="checkbox"/> (1) YES Go To Q6	<input type="checkbox"/> (2) NO Go to Q8			
Q6. If yes, how long back have you applied?	<input type="checkbox"/> (1) Less than 3 months	<input type="checkbox"/> (2) 4-6 months	<input type="checkbox"/> (3) 6 months - 1 year	<input type="checkbox"/> (4) More than 1 year	
Q7. Why have you not got the LPG connection till now?	<input type="checkbox"/> (1) Complete Documents required for application not available with me			<input type="checkbox"/> (2) Delay from the LPG Distributor Side	<input type="checkbox"/> (3) Any other, Pls specify _____
Go to Q9					
Q8. If No, why did you not apply for LPG connection till now?	<input type="checkbox"/> (1) Yes		<input type="checkbox"/> (2) No		
a) Not Aware About LPG cylinder as a cooking fuel					
b) Not Aware about the Process of Application					

c) Process for Application is tedious	① Yes	② No
d) Do not have Documents of Proof/Identity needed for application	① Yes	② No
e) Distributor centre to collect cylinder/submit application is very far	① Yes	② No
f) Long waiting time to get the LPG connection	① Yes	② No
g) Size of cylinder available currently (14kg) is very large	① Yes	② No
h) Don't like the taste of food cooked in the LPG fuel	① Yes	② No
i) LPG is not safe to use	① Yes	② No
j) High Initial cost (Security Deposit)	① Yes	② No
k) High recurring cost (Cost of Cylinder)	① Yes	② No
l) Long waiting time to get refill cylinder	① Yes	② No
m) Don't know how to use LPG stove	① Yes	② No
n) Others - Please specify _____	① Yes	② No
Q9. You said you are spending Rs. _____ amount/month on cooking fuel (TOTAL OF Q3), considering this amount at what price would you be willing to buy LPG? (Tick one) and mention the amount in Rs. _____		
① At same price or lower price than existing fuel	③ 10-20% higher than existing fuel	
② 0-10% higher than existing fuel	④ More than 20% higher than existing fuel	
Q10. Have you heard of PAHAL Direct Benefit Transfer scheme to bank for liquefied petroleum gas (LPG) subsidy in India scheme launched by government?	① Yes	② No
Q11. What financial incentive will make you shift to LPG? (Tick one only)		
① Security deposit should be waived	② Monthly instalment of security deposit	③ Reduction in LPG price
Q12. What is your most preferred cylinder size? (Tick one)		
① 2kg	② 6kg	③ 10 kg
④ 14kg		
Q13. How far is the LPG distribution centre from your locality? (Tick one)		
① 0-5 kms	② 6-10 kms	③ 10-15 kms
④ No Centre Exists	⑤ Don't Know	
Q14. Have you ever heard any of the below LPG distributor companies? (Tick one or multiple as applicable)		
① Indane	② Bharat Gas	③ HP Gas
Q15. What should be the distribution medium of LPG in your area?		
① Gram Panchayat	② Local Agencies	③ Oil distribution companies
④ Other _____		

SECTION FIVE – DEMOGRAPHIC PROFILE OF HOUSEHOLD

A. Do you have a bank account?	① Yes		② No	
B. Do you have any Govt. identity? (Tick all that is available)	① Aadhar Card	② Ration Card	③ Driving Licence	④ Voter ID card
C. What is your age in completed years?	① 18-21 years	② 22-35 years	③ 36-50 years	④ More than 50 years
D. What is your occupation/s? (Please let us know your two main occupations)	① Farmer	② Farm Labourer	③ Other Labourer	④ Shopkeeper
	⑤ Service	⑥ Business	⑦ Unemployed	
E. What is the highest level education upto which you have studied till now?	① 5 th Class or below	② 6 th - 10 th Class	③ 11 th - 12 th Class	
	④ Graduate	⑤ Post Graduate		
F. What is the average income of your household per month (Rs.)? (Tick One)	① Below Rs 2250	② Rs 2250-5000	③ Rs 5000-10000	
	④ Rs 10000-25000	⑤ Above Rs 25000		
G. How many persons are staying in your household?	Number of Adults (Above 18 years of age)	a) Male	b) Female	
	Number of children (Below 18 years of age)	c) Male	d) Female	
H. What type of house do you stay in? (Describe each type of house from SHOW CARD)				
① Pucca		② Semi Pucca		③ Kuccha
I. What are the facilities available in your household? (Tick all that is available)				
① Water Supply	② Electricity	③ Internet	④ Television	⑤ 2 Wheeler
				⑥ 4 wheeler
				⑦ Mobile Phone connection
J. Please provide your complete address				
K. Please provide your contact number	a) Mobile			
	b) Landline			
L. Email address				

Thanks for your co-operation and participation

NAME OF INTERVIEWER	_____	DATE OF INTERVIEW	D	D	M	M	1	5
CHECKED BY SUPERVISOR	_____	SERIAL NO.						

HOUSEHOLD QUESTIONNAIRE

नमस्ते! हम प्रस्तुत कन्सल्टिंग प्राइवेट लिमिटेड से हैं, जो दिल्ली में एक प्रतिष्ठित मार्केट रिसर्च कंपनी है। हम पीपीएसी के बिहाफ पर आपसे मिल रहे हैं। पीपीएसी एलपीजी की खपत खासतौर पर भारत में कम एलपीजी इस्तेमाल वाले एरियाज में विभिन्न मसलों को समझना चाहेगी, राज्य में प्राथमिक रिसर्च उन क्षेत्रों में की जा रही है जहां एलपीजी का इस्तेमाल कम है। आपसे निवेदन करते हैं कि घरों में साफ ईंधन की आपूर्ति के लिए इस सर्वे में सहयोग दे।

सेक्शन एक: भौगोलिक क्षेत्र जानकारी (जांचकर्ता को संपूर्ण जानकारी भरनी है)

क्षेत्र (टिक)	① ग्रामीण	② नगरीय	राज्य (बताएं)
जिला (बताएं)			उप जिला (बताएं)
ब्लॉक/खण्ड (बताएं)			गांव / नगर (बताएं)
ग्रा.पं. (जीपी) (बताएं)			

सेक्शन दो – उत्तरदाता चुनाव मापदंड

उत्तरदाता का नाम	पहला नाम	मध्यम नाम	कुल नाम/परिवार नाम
लिंग	① पुरुष		② महिला
मुख्य कमाने वाला व्यक्ति	क्या आप घर के खर्चों में सबसे ज्यादा योगदान करते हैं या क्या आप घर के लिए बड़े खर्चों के संबंध में निर्णयकर्ता हैं?		① हां जारी रखें
एलपीजी कनेक्शन	क्या आपके पास एलपीजी कनेक्शन है (क्या आपकी उपभोक्ता संख्या है ताकि आप एलपीजी सिलिंडर बुक कर सकते हैं)		② नहीं बंद करें
			① हां बंद करें
			② नहीं जारी रखें

सेक्शन तीन – वर्तमान ईंधन खपत

Q1. आप घर पर खाना पकाने के लिए अवश्य ही विभिन्न प्रकार के ईंधन इस्तेमाल कर रहे होंगे। क्या मैं जान सकता हूँ आपके घर में कौन-कौन से ईंधन मौजूद हैं? (एक या अनेक पर टिक करें जैसे लागू होते हैं)

① जलावन लकड़ी ② जैव ईंधन (फसल अवशेष) ③ गाय के गोबर के उपले ④ केरोसीन ⑤ कोयला/लकड़ी का कोयला

Q2. घर में ईंधन का मुख्य इस्तेमाल क्या है? (कृपया प्रत्येक काम के लिए दो बड़े ईंधन तक का उपयोग चुनें)

काम	जलावन लकड़ी	जैव ईंधन (फसल अवशेष)	गाय के गोबर के उपले	केरोसीन	कोयला/लकड़ी का कोयला
a) खाना पकाना और पानी गर्म करना					
b) प्रकाश					
c) अन्य, कृपया बताएं					

Q3. घर में खाना पकाने के लिए ईंधन कितनी मात्रा में इस्तेमाल होता है? (कृपया प्रति महीना खपत और प्रति महीना खर्च मात्रा बताएं)

ईंधन स्रोत	यूनिट/ईकाई	इस्तेमाल मात्रा/महीना	खर्च (रुपया/महीना)
a) जलावन लकड़ी	किग्रा		
b) जैव ईंधन (फसल अवशेष)	किग्रा		
c) गाय के गोबर के उपले	किग्रा		
d) केरोसीन	लीटर		
e) कोयला/लकड़ी का कोयला	किग्रा		
ईंधन पर कुल खर्च (रुपया/महीना)			

सेक्शन चार – एलपीजी जानकारी, आवेदन, रूकावटें, इच्छा

Q4. क्या आप घरों में खाना पकाने के लिए इस्तेमाल होने वाले एलपीजी सिलिंडर के बारे में जानते हैं?	① हां	② नहीं
Q5. क्या आपने कभी एलपीजी कनेक्शन के लिए आवेदन किया है?	① हां	② नहीं
Q6. यदि हां, आपने कितने समय पहले आवेदन किया था? (केवल एक टिक करें)	① 3 महीने पहले से कम	② 4-6 महीने
Q7. आपको अभी तक एलपीजी कनेक्शन क्यों नहीं मिला?	③ 6 महीने-1 साल	④ 1 साल से ज्यादा
① मेरे पास आवेदन के लिए पूरे कागजात नहीं थे	② एलपीजी वितरक की ओर से देरी	③ कोई अन्य, कृपया बताएं
यदि Q5 हां, Q9 पर जाए		
Q8. यदि Q5 नहीं, आपने अभी तक एलपीजी कनेक्शन के लिए आवेदन क्यों नहीं किया?		
a) खाने पकाने के ईंधन के तौर पर एलपीजी सिलिंडर के बारे में नहीं जानते	① हां	② नहीं
b) आवेदन की प्रक्रिया के बारे में नहीं जानते	① हां	② नहीं

c) आवेदन के लिए प्रक्रिया उबाक/थकाऊ है	① हां	② नहीं
d) आवेदन के लिए जरूरी सबूत/पहचान के कागजात नहीं हैं	① हां	② नहीं
e) सिलिंडर लेने के लिए/आवेदन जमा करने के लिए वितरक केन्द्र बहुत दूर है	① हां	② नहीं
f) एलपीजी कनेक्शन पाने में इंतजार करने का लंबा समय	① हां	② नहीं
g) वर्तमान में उपलब्ध सिलिंडर का साइज (14 किग्रा) बहुत बड़ा है	① हां	② नहीं
h) एलपीजी ईंधन में पकाये भोजन का स्वाद पसंद नहीं है	① हां	② नहीं
i) एलपीजी इस्तेमाल के लिए सुरक्षित नहीं है	① हां	② नहीं
j) शुरूआती खर्च ज्यादा (सिक्वोरिटी डिपोजिट)	① हां	② नहीं
k) इस्तेमाल करने का खर्च ज्यादा (सिलिंडर की कीमत)	① हां	② नहीं
l) रिफिल सिलिंडर पाने में इंतजार करने का लंबा समय	① हां	② नहीं
m) पता नहीं है कि एलपीजी स्टोव कैसे इस्तेमाल करते हैं	① हां	② नहीं
n) अन्य-कृपया बताएँ	① हां	② नहीं

Q9. आपने बताया आप खाना पकाने के ईंधन पर हर महीने रुपये खर्च कर रहे हैं (Q3 का योग), इस राशि पर विचार करते हुए आप एलपीजी खरीदने के लिए कितनी कीमत देने के इच्छुक होंगे? (केवल एक टिक करें) कृपया रुपये में बताएं _____

① मौजूदा ईंधन के समान कीमत या कम कीमत	③ मौजूदा ईंधन से 10-20% ज्यादा
② मौजूदा ईंधन से 0-10% ज्यादा	④ मौजूदा ईंधन से 20% से ज्यादा

Q10. क्या आपने सरकार द्वारा लांच की गई लिविफाइड पैट्रोलियम गैस (एलपीजी) के लिए सब्सिडी/अनुदान को बैंक में सीधे जमा करने की स्कीम (PAHAL) के बारे में सुना है?

Q11. कौन से आर्थिक इन्सेंटिव/मदद आपको एलपीजी इस्तेमाल करने के लिए प्रेरित करेगी? (केवल एक टिक करें)

① सिक्वोरिटी डिपोजिट नहीं होना चाहिए	② सिक्वोरिटी डिपोजिट की मासिक किश्त	③ एलपीजी कीमत में कमी
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Q12. आपका सबसे पसंदीदा सिलिंडर साइज क्या है? (केवल एक टिक करें) ① 2 किग्रा ② 6 किग्रा ③ 10 किग्रा ④ 14 किग्रा

Q13. आपके यहां से एलपीजी वितरण केन्द्र कितनी दूरी पर है? (केवल एक टिक करें)

① 0-5 किमी	② 6-10 किमी	③ 10-15 किमी	④ कोई केन्द्र मौजूद नहीं	⑤ पता नहीं
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Q14. क्या आपने कभी इनमें से किसी एलपीजी वितरण कंपनियों के बारे में सुना है? (एक या ज्यादा पर टिक करें जैसे लागू होते हैं)

① इण्डेन	② भारत गैस	③ एचपी गैस
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Q15. आपका गांव में एलपीजी वितरण किसके माध्यम से होना चाहिए?

① ग्राम पंचायत	② स्थानिय सस्था	③ तेल वितरक कंपनी	④ कोई अन्य _____
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सेक्शन पांच – घर की जनसांख्यिकीय रूपरेखा

A. क्या आपका कोई बैंक खाता है? ① हां ② नहीं

B. क्या आपके पास कोई सरकारी पहचान पत्र है? (सभी पर टिक करें जो उपलब्ध हैं) ① आधार कार्ड ② राशन कार्ड ③ ड्राइविंग लायसेंस ④ मतदाता पहचान पत्र कार्ड

C. आपकी पूरे वर्षों में उम्र क्या है? ① 18-21 साल ② 22-35 साल ③ 36-50 साल ④ 50 साल से ज्यादा

D. आप क्या काम करते हैं? (कृपया हमें अपने दो मुख्य काम/व्यवसाय बताएं) ① किसान ② खेतीहर मजदूर ③ अन्य मजदूर ④ दुकानदार ⑤ नौकरी ⑥ बिजनेस/व्यापार ⑦ बेरोजगार

E. आप अभी तक अधिकतम कहां तक पढ़े हुए हैं? (केवल एक टिक करें) ① कक्षा 5 या कम ② कक्षा 6-10 ③ कक्षा 11-12 ④ स्नातक ⑤ परास्नातक

F. आपके घर की प्रति महीना औसत आमदनी क्या है (रुपये)? (केवल एक टिक करें) ① रु 2250 से कम ② रु 2250-5000 ③ रु 5000-10000 ④ रु 10000-25000 ⑤ रु 25000 से अधिक

G. आपके घर में कितने व्यक्ति रह रहे हैं? ① वयस्कों की संख्या (18 साल उम्र से अधिक) a) पुरुष b) महिला ② बच्चों की संख्या (18 साल उम्र से कम) c) पुरुष d) महिला

H. आप किस प्रकार के घर में रहते हैं? (शोकार्ड से प्रत्येक प्रकार के घर का वर्णन करें) (केवल एक टिक करें) ① पक्का ② कुछ पक्का ③ कच्चा

I. आपके घर में कौन सी सुविधाएँ उपलब्ध हैं? (सभी पर टिक करें जो उपलब्ध हैं) ① पानी की आपूर्ति ② बिजली ③ इंटरनेट ④ टेलीविजन ⑤ 2 व्हीलर ⑥ 4 व्हीलर ⑦ मोबाइल फोन कनेक्शन

J. कृपया अपना पूरा पता बताएं _____

K. कृपया अपना फोन नंबर बताएं a) मोबाइल _____ b) लैंडलाइन _____

L. ईमेल एड्रेस _____

NAME OF INTERVIEWER _____
CHECKED BY SUPERVISOR _____

DATE OF INTERVIEW | | | 1 | 5

পৰিয়াল প্ৰশ্নকাকত

শুভ দিন! আমি প্ৰস্তুত কনচাল্টিং গ্ৰাইভেট লিমিটেড, নামৰ দ্বিতীয় এটা মৰ্যাদাপূৰ্ণ মার্কেট বিচাৰ্ট কোম্পানীৰ গৰা আহিবোঁ। আমি পিপিএটি-ৰ ভৱনৰ গৰা আপোনাৰ ওচৰলৈ আহিছোঁ। পিপিএটি-এ এলগিজি বায়(ব্যৱহাৰ)ৰ সন্দৰ্ভত, বিশেষভাৱে ভাৰতবৰ্ষৰ লিম্বপৰিমাণে এলগিজি-ৰ প্ৰৱেশ ঘটা অঞ্চলসমূহৰ ভিত্তিত এলগিজি ব্যৱহাৰ কৰাৰ ক্ষেত্ৰত বিদ্যমান বিভিন্ন বিষয়সমূহৰ বিষয়ে বুজিব বিচাৰিছোঁ। ৰাজ্যৰ গড় পৰিমাণতকৈ কম পৰিমাণৰ এলগিজি প্ৰৱেশ ঘটা অঞ্চলত প্ৰাথমিক গৱেষণা কৰি থকা হৈছে। যিবসমূহত পৰিষ্কাৰ ইন্ধন যোগান ধৰাৰ ক্ষেত্ৰত সন্ধান কৰি তুলিবলৈ আপোনাক এই সমীক্ষাত অংশগ্ৰহণ কৰিবলৈ আমি অনুৰোধ জনালোঁ।

শাখা এক-ভৌগলিক এলেকাৰ বিৱৰণ (ইন্টাৰভিউৰ সন্স্পৰ্ণ বিৱৰণ পূৰ্ণ কৰিব)

Area Tick	① গ্ৰাম্য (টিক কৰক) ② নগৰীয়া	ৰাজ্য (উল্লেখ কৰক)	
জিলা (উল্লেখ কৰক)		উপ জিলা (উল্লেখ কৰক)	
থও (উল্লেখ কৰক)		গাওঁ / নগৰ (উল্লেখ কৰক)	
জি পি (উল্লেখ কৰক)			

শাখা দুই-উত্তৰদাতা পিৰ্বাচন ক্ৰাইটেৰীয়া

উত্তৰদাতাৰ নাম	প্ৰথম নাম	মধ্য নাম	উপাধি/পৰিয়াল নাম	
লিংগ	① পুৰুষ		② মহিলা	
মূখ্য আয়কৰ্তা	আপুনি পৰিয়ালৰ ব্যৱলৈ সৰ্বাধিক অৰিমাণা যোগায় লোকি অথবা আপুনি পৰিয়ালৰ বাবে প্ৰধান ব্যয়সমূহৰ সন্দৰ্ভত সিদ্ধান্ত গ্ৰহণকাৰী হয় লোকি?		① হয় আপবাটি যাওঁক	② নহয় সমাপ্ত কৰক
এলগিজি সংযোগ	আপোনাৰ এটা এলগিজি সংযোগ আছে লে (আপোনাৰ গ্ৰাহক লম্বৰ আছে লে যাতে আপুনি এলগিজি চিলিণ্ডাৰ বুক কৰিব পাৰে?)		① হয় আপবাটি যাওঁক	② নহয় সমাপ্ত কৰক

শাখা তিনি-বৰ্তমান ইন্ধন বায় (ব্যৱহাৰ)

Q1. আপুনি নিশ্চয়কৈ ঘৰত বন্ধা-বঢ়া কৰা, গাৰী গৰম কৰা আৰু গোস্বৰিত কৰা ইত্যাদিৰ বাবে বিভিন্ন প্ৰকাৰৰ ইন্ধন ব্যৱহাৰ কৰে। অনুগ্ৰহ কৰি কওঁকচোন বৰ্তমানে আপোনাৰলৈকে পৰিয়ালত কোনবোৰ ইন্ধন ব্যৱহাৰ কৰে? (প্ৰয়োজ্ঞ অনুযায়ী এক বা একাধিক টিক কৰিব)

① খৰি	② বায়' মাচ(সম্যৰ অৱশিষ্ট)	③ গৰুৰ গোস্বৰৰ পিঠা/উপলা	④ কেৰাচিন	⑤ কয়লা/কাঠকয়লা
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Q2. আপোনাৰলৈকে পৰিয়ালত ইন্ধনৰ মূখ্য ব্যৱহাৰ কি হয়? (অনুগ্ৰহ কৰি প্ৰতিটো কাৰ্য্য-কলাপৰ বাবে দুটা মূখ্য ইন্ধনৰ ব্যৱহাৰ টিক কৰিব)

কাৰ্য্য-কলাপ	খৰি	বায়' মাচ(সম্যৰ অৱশিষ্ট, বায়'গেছ)	গৰুৰ গোস্বৰৰ পিঠা/উপলা	কেৰাচিন	কয়লা/কাঠকয়লা
a) বন্ধা-বঢ়া কৰা আৰু গাৰী গৰম কৰা					
b) গোস্বৰৰ বাবে					
c) অলাপা,অনুগ্ৰহ কৰি উল্লেখ কৰক _____					

Q3. আপোনাৰলৈকে পৰিয়ালত বন্ধনৰ বাবে কিমান পৰিমাণৰ ইন্ধন ব্যৱহাৰ কৰে? (অনুগ্ৰহ কৰি প্ৰতি মাহত কিমান পৰিমাণে ব্যৱহৃত হয় আৰু প্ৰতিমাহৰ বায় উল্লেখ কৰিব)

ইন্ধনৰ উৎস	ইউনিট/একক	ব্যৱহাৰ কৰাৰ পৰিমাণ/মাহত	খৰছ(টকা/মাহত)
a) খৰি	কেজি		
b) বায়' মাচ(সম্যৰ অৱশিষ্ট, বায়'গেছ)	কেজি		
c) গৰুৰ গোস্বৰৰ পিঠা/উপলা	কেজি		
d) কেৰাচিন	লিটাৰ		
e) কয়লা/কাঠকয়লা	কেজি		
ইন্ধনৰ ক্ষেত্ৰত সৰ্বমুঠ বায় (টকা/মাহত)			

শাখা চাৰি-এলগিজি সজাগতা, আবেদন, প্ৰতিবাধা, ইচ্ছা

Q4. আপুনি পৰিয়ালবোৰত বন্ধা-বঢ়া উদ্দেশ্যৰ বাবে ব্যৱহাৰ কৰা এলগিজি চিলিণ্ডাৰৰ বিষয়ে জানে লে?	① হয়	② নহয়			
Q5. আপুনি যিকোনো সময়ত এটা এলগিজি সংযোগৰ বাবে আবেদন কৰিছিল লোকি?	① হয় Q6 লৈ যাওঁক	② নহয় Q8 লৈ যাওঁক			
Q6. যদিহে হয়, আপুনি কিমান দিন আগতে আবেদন কৰিছিল?	① 3 মাহতকৈ কম	② 4-6 মাহ	③ 6 মাহ-1 বছৰ	④ 1 বছৰতকৈ অধিক	
Q7. আপুনি এতিয়ালৈকে কিয় এলগিজি সংযোগ লাভ কৰা নাই?	① মোৰ লগত আবেদনৰ বাবে প্ৰয়োজন হোৱা সন্স্পৰ্ণ নথি-পত্ৰ উপলব্ধ নাই			② এলগিজি নিতৰকৰ ফালৰ গৰা পলম কৰা	③ অন্য কোনো, অনুগ্ৰহ কৰি উল্লেখ কৰক
Q9 লৈ যাওঁক					
Q8. যদিহে নহয়, আপুনি কিয় এতিয়ালৈকে এলগিজি সংযোগৰ বাবে আবেদন কৰা নাই?					
a) বন্ধন ইন্ধন হিচাপে এলগিজি চিলিণ্ডাৰৰ বিষয়ে সজাগ নহয়	① হয়	② নহয়			

b) আবেদন কৰা প্ৰক্ৰিয়াৰ বিষয়ে অবগত নহয়	① হয়	② নহয়		
c) আবেদন কৰা প্ৰক্ৰিয়া আৰম্ভনাময়ক হয়	① হয়	② নহয়		
d) আবেদন কৰাৰ বাবে উপযুক্ত প্ৰমাণপত্ৰ/পৰিচয়পত্ৰ লাই	① হয়	② নহয়		
e) চিহ্নিতৰ সংগ্ৰহ কৰা/আবেদন পত্ৰ জমা দিয়া বিতৰক কেন্দ্ৰ বহু দূৰত অৱস্থিত হয়	① হয়	② নহয়		
f) এলগিজি সংযোগ পোৱাৰ বাবে দীঘলীয়া সময় অপেক্ষা কৰিব লাগে	① হয়	② নহয়		
g) বৰ্তমানে উপলব্ধ চিহ্নিতৰ আকাৰ (14 কিয়া) খুবেই ডাঙৰ হয়	① হয়	② নহয়		
h) এলগিজি ইন্ধনত বন্ধা খাদ্যৰ যোগান ভাল নাগাওঁ	① হয়	② নহয়		
i) এলগিজি ব্যৱহাৰ কৰাটো সুবন্ধিত নহয়	① হয়	② নহয়		
j) উচ্চ প্ৰাবন্ধিক ব্যয় (চিকিউৰিটি ডিগেজিট)	① হয়	② নহয়		
k) উচ্চ পৌনঃপুনিক ব্যয় (চিহ্নিতৰ দাম)	① হয়	② নহয়		
l) বিকিন চিহ্নিতৰ পোৱাৰ বাবে দীঘলীয়া সময় অপেক্ষা কৰিব লাগে	① হয়	② নহয়		
m) এলগিজি ষ্টেভ কেন্দ্ৰৰে ব্যৱহাৰ কৰিব লাগে লাজলোঁ	① হয়	② নহয়		
n) অনলায়- অনুগ্ৰহ কৰি উল্লেখ কৰক	① হয়	② নহয়		
Q9. আপুনি কলে যে আপুনি বন্ধন ইন্ধন (গ্ৰুপ-৩-ৰ মুঠ)ৰ ক্ষেত্ৰত টকা ধন/মাহত ব্যয় কৰি আছে, এই ধনৰ বিষয়ে বিবেচনা কৰি আপুনি কিমান দামত এলগিজি কিম্বলৈ ইচ্ছুক হব কওঁকচোন? (এটা টিক কৰিব)Rs				
① বিদ্যমান ইন্ধনৰ সমান দামত বা তাতকৈ কম দামত	③ বিদ্যমান ইন্ধনতকৈ 10-20% উচ্চ দামত			
② বিদ্যমান ইন্ধনতকৈ 0-10% উচ্চ দামত	④ বিদ্যমান ইন্ধনতকৈ 20% তকৈ অধিক উচ্চ দামত			
Q10. আপুনি ভাৰতবৰ্ষত নিকুইফাইড পেট্ৰ'লিয়াম গেচ (এলগিজি) ব্যৱহাৰৰ বাবে চৰকাৰে লক্ষ কৰা বেংকলৈ গহল ডাইৰেক্ট বেণিফিট ট্ৰান্সফাৰ স্কীমৰ বিষয়ে সুবিধে লোকি?				
① হয়	② নহয়			
Q11. আপোনাৰ কোলাবোৰ আৰ্থিক ইন্সটিউটে এলগিজি -লৈ সলনি কৰা কৰি জুলিব? (মাত্ৰ এটা টিক কৰিব)				
① চিকিউৰিটি ডিগেজিট আঁতৰাই দিব লাগে	② চিকিউৰিটি ডিগেজিটৰ মাহেকীয়া কিস্তি	③ এলগিজি-ৰ দাম হ্রাস কৰা		
Q12. আপোনাৰ সবাতোকৈ গছন্দৰ চিহ্নিতৰ আকাৰ কি হয়? (এটা টিক কৰিব)				
① 2 কেজি	② 6 কেজি	③ 10 কেজি	④ 14 কেজি	
Q13. আপোনাৰলোকৰ এলেকাৰ গৰা এলগিজি বিতৰণ ষ্টেটাৰটাৰ দূৰত্ব কিমান হয়? (এটা টিক কৰিব)				
① 0-5 কি.মি.	② 6-10 কি.মি.	③ 10-15 কি.মি.	④ কোনো ষ্টেটাৰ নাই	⑤ লাজলোঁ
Q14. আপুনি আজিলৈকে কেতিয়াবা তলত দিয়া কোনো এলগিজি বিতৰক কোম্পানীৰ নাম সুবিধে লে? (প্ৰযোজ্য হোৱা অনুসাবে এক বা একাধিক টিক কৰিব)				
① ইণ্ডেল	② ভাৰত গেছ	③ এইচপি গেছ		
Q15. আপোনাৰলোকৰ গাওঁত এলগিজি-ৰ বিতৰণ কৰ অৰিয়েতে হব লাগে?				
① গাওঁ গক্ষায়ত	② স্থানীয় সংস্থা	③ তেল বিতৰক কোম্পানী	④ অন্য কোনো	

সাধা গঢ়- পৰিচালনৰ ভৌগোলিক প্ৰফাইল

A. আপোনাৰ বেংক একাউন্ট আছে লে? (উপলব্ধ সকলোবোৰ টিক কৰিব)	① হয়		② নহয়			
B. আপোনাৰ কোনো চৰকাৰী পৰিচয়পত্ৰ আছে লোকি? (উপলব্ধ সকলোবোৰ টিক কৰিব)	① আধাৰ কাৰ্ড	② বেচন কাৰ্ড	③ ড্ৰাইভিং লাইচেন্স	④ ভোটাৰ আইডি কাৰ্ড		
C. সম্পূৰ্ণ বছৰত আপোনাৰ বয়স কিমান হয়?	① 18-21 বছৰ	② 22-35 বছৰ	③ 36-50 বছৰ	④ 50 বছৰতকৈ অধিক		
D. আপোনাৰ জীৱিকা/সমূহ কি হয়? (অনুগ্ৰহ কৰি আপোনাৰ দুটা মুখ্য জীৱিকাৰ কথা জনাব)	① শ্ৰেণিক	② ফাৰ্ম/গামৰ প্ৰসিক	③ অনলায় প্ৰসিক	④ মোকাৰী		
E. আপুনি এতিয়ালৈকে সম্পূৰ্ণ কৰা সৰ্বোচ্চ শিক্ষাগত স্তৰ কিমান হয়?	⑤ চাকৰি		⑥ ব্যৱসায়	⑦ নিৰবুৱা		
F. গ্ৰতি মাহে আপোনাৰলোকৰ পৰিচালনৰ গড় আয় কিমান হয় (ভাৰতীয় টকা)? (এটা টিক কৰক)	① 5ম শ্ৰেণী বা কম	② 6ম-10ম শ্ৰেণী	③ 11ম-12ম শ্ৰেণী			
	④ 10000-25000 টকা	⑤ 25000 টকাতকৈ অধিক				
G. আপোনাৰলোকৰ পৰিচালনত কিমানজন সদস্যই বাস কৰে?	গ্ৰাম্যবাসীৰ সংখ্যা (18 বছৰতকৈ অধিক বয়সৰ)		a) পুৰুষ	b) মহিলা		
	শিৰ্ষকৰ সংখ্যা (18 বছৰতকৈ কম বয়সৰ)		c) পুৰুষ	d) মহিলা		
H. আপুনি কেলেছৰণৰ ঘৰত বাস কৰে? (স্বকাৰ্ডৰ গৰা গ্ৰতিটো প্ৰকাৰৰ ঘৰৰ কথা বৰ্ণনা কৰি দিব)	① গৰা		② আধা গৰা	③ কেঁচা		
I. আপোনাৰলোকৰ ঘৰত কি কি সুবিধাসমূহ উপলব্ধ আছে? (উপলব্ধ হোৱা সকলোবোৰ টিক কৰিব)						
① পানী যোগান	② বিজুলী	③ ইটাৰলেট	④ টেলিভিচন	⑤ দুচকীয়া বাহন	⑥ 4 চকীয়া বাহন	⑦ মোবাইল ফোন সংযোগ
J. অনুগ্ৰহ কৰি আপোনাৰ						
K. সম্পূৰ্ণ ঠিকনাটো কওঁকচোন						
L. অনুগ্ৰহ কৰি আপোনাৰ যোগাযোগৰ নম্বৰটো দিয়কচোন	মোবাইল					
	লেণ্ডলাইন					
	ইমেইল ঠিকনা					

b) আবেদনের প্রক্রিয়ার ব্যাপারে অবগত নই	① হ্যাঁ	② না		
c) আবেদনের প্রক্রিয়া ক্লাস্টিকার	① হ্যাঁ	② না		
d) আবেদন জন্য প্রয়োজনীয় পরিচয় প্রমাণপত্র/নথিপত্রগুলি নেই	① হ্যাঁ	② না		
e) সিলিন্ডার গ্রহণ করার/আবেদন জমা করার ডিস্ট্রিবিউটার সেন্টারটি অনেক দূরে অবস্থিত	① হ্যাঁ	② না		
f) এলপিগিজি কানেকশনের পাওয়ার জন্য দীর্ঘ সময়ের অপেক্ষা	① হ্যাঁ	② না		
g) বর্তমানে উপলব্ধ সিলিন্ডারের আকার (১৪কেজি) ভীষণ বড়	① হ্যাঁ	② না		
h) এলপিগিজি স্থালিনী ব্যবহার তৈরি করার রান্নার স্বাদ পছন্দ হয় না	① হ্যাঁ	② না		
i) এলপিগিজি ব্যবহার করা নিরাপদ নয়	① হ্যাঁ	② না		
j) উচ্চ প্রারম্ভিক খরচ (সিকিউরিটি ডিপোজিট)	① হ্যাঁ	② না		
k) ধারাবাহিকভাবে উচ্চ খরচ (সিলিন্ডারের দাম)	① হ্যাঁ	② না		
l) রিফিল সিলিন্ডার পাওয়ার জন্য দীর্ঘ সময় অপেক্ষা করতে হয়	① হ্যাঁ	② না		
m) এলপিগিজি স্টোভ কিভাবে ব্যবহার করতে হয় জানি না	① হ্যাঁ	② না		
n) অন্যান্য - উল্লেখ করুন	① হ্যাঁ	② না		
Q9. পনি বলেছেন যে আপনি প্রতিমাসে রান্না করার স্থালানির জন্য _____ পরিমাণ রাশি খরচ করছেন, এই রাশিটির কথা বিবেচনা করে বনুন আপনি কত দামে এলপিগিজি কিনতে ইচ্ছুক হবেন? (একটি টিক করুন) এবং আরএস পরিমাণ উল্লেখ.				
① বর্তমান স্থালানীর মতো একই দামে বা কম দামে	③ বর্তমান স্থালানীর তুলনা ০-২০% বেশি দামে			
② বর্তমান স্থালানীর তুলনা ০-১০% বেশি দামে	④ বর্তমান স্থালানীর তুলনা ২০%-এরও বেশি দামে			
Q10. আপনি কি সরকার দ্বারা আরম্ভ করা লিকুইফায়েড পেট্রোলিয়াম গ্যাসের ভর্তুকির জন্য পহল ডাইরেক্ট বেনিফিট ট্রান্সফার টু ব্যাঙ্কের ব্যাপারে শুনছেন?				
	① হ্যাঁ	② না		
Q11. কি কি অর্থনৈতিক সুবিধাগুলি আপনাকে এলপিগিজি ব্যবহার করতে ইচ্ছুক করবে? (একটি টিক নুন)				
① সিকিউরিটি ডিপোজিট থেকে রেহাই	② সিকিউরিটি ডিপোজিটের মাসিক কিস্তি	③ এলপিগিজির দামে ছাড়		
Q12. আপনার পছন্দের সিলিন্ডার সাইজটি কি? (একটি টিক করুন)				
① ২ কেজি	② ৬ কেজি	③ ১০ কেজি	④ ১৪ কেজি	
Q13. আপনার এলাকা থেকে এলপিগিজি ডিস্ট্রিবিউশন সেন্টারটি কত দূরে অবস্থিত? (একটি টিক করুন)				
① ০-৫ কিমি	② ৬-১০ কিমি	③ ১০-১৫ কিমি	④ কোনও সেন্টার নেই	⑤ জানি না
Q14. আপনি কি কখনও নিম্নলিখিত এলপিগিজি ডিস্ট্রিবিউটার কোম্পানির ব্যাপারে শুনছেন? (প্রযোজ্য অনুযায়ী একটি বা একাধিক টিক করুন)				
① ইন্ডেন	② ভারত গ্যাস	③ এইচএলপি গ্যাস		
Q15. আপনার এলাকায় এলপিগিজি বিতরণের মাধ্যম কি হওয়া উচিত?				
① গ্রাম পঞ্চায়েতের	② স্থানীয় সংস্থা	③ ভেল বিতরণ কোম্পানি	④ অন্যান্য	

SECTION FIVE – DEMOGRAPHIC PROFILE OF HOUSEHOLD

আপনার কি ব্যাঙ্ক অ্যাকাউন্ট আছে?	① হ্যাঁ		② না	
আপনার কি কোনও সরকারি পরিচয় পত্র আছে? (যে সমস্ত আছে, টিক করুন)	① আধার কার্ড	② রেশন কার্ড	③ ড্রাইভিং লাইসেন্স	④ ভোটার আইডি কার্ড
সম্পূর্ণ বছরে আপনার বয়স কত?	① ১৮-২১ বছর	② ২২-৩৫ বছর	③ ৩৬-৫০ বছর	④ ৫০ বছরের বেশি
আপনার পেশা কি (অনুগ্রহ করে আমাদের আপনার প্রধান দুটি পেশা জানান)	① কৃষক	② কৃষি মজুর	③ অন্যান্য মজুর	④ দোকানদার
	⑤ চাকরি	⑥ ব্যবসা	⑦ বেরোজগার	
আপনি এখনও পর্যন্ত কত দূর পর্যন্ত পড়াশোনা করেছেন?	① মে গ্রেণী বা তার কম	② ৬ষ্ঠ-১০ম গ্রেণী	③ ১১-১২ গ্রেণী	
	④ গ্র্যাজুয়েট	⑤ পোস্ট গ্র্যাজুয়েট		
আপনার পরিবারের প্রতি মাসে গড়পত্রতা আয় কত?	① ২২৫০ টাকার কম	② ২২৫০-৫০০০ টাকা	③ ৫০০০-১০০০০ টাকা	
	④ ১০০০০-২৫০০০ টাকা	⑤ ২৫০০০ টাকার বেশি		
আপনার পরিবারে কত জন লোক বসবাস করে?	গ্রামবয়স্কদের সংখ্যা (১৮ বছরের বেশী বয়সী)	a) পুরুষ	b) মহিলা	
	বাচ্চাদের সংখ্যা (১৮ বছরের কম)	c) পুরুষ	d) মহিলা	
আপনি কি ধরনের বাড়িতে বসবাস করেন? (শো কার্ড থেকে প্রতিটি প্রকারের বর্ণনা দিন)	① পাকা			
	② আধা পাকা		③ কাচা	
আপনার বাড়িতে কি কি সুবিধা আছে? (যে সমস্ত আছে টিক করুন)	① জল সরবরাহ			
	② বিদ্যুত	③ ইন্টারনেট	④ টেলিভিশন	⑤ ২ চাকা
	⑥ ৪চাকা	⑦ মোবাইল ফোন কানেকশন		
অনুগ্রহ করে আপনার সম্পূর্ণ ঠিকানা বলুন				
অনুগ্রহ করে আপনার যোগাযোগ নম্বর বলুন	মোবাইল			
	ল্যান্ডলাইন			
	ইমেল অ্যাড্রেস			

NAME OF INTERVIEWER _____
 CHECKED BY SUPERVISOR _____

DATE OF INTERVIEW | | | | 1 | 5

HOUSEHOLD QUESTIONNAIRE

તમને કું પ્રસ્તુત કન્સલ્ટીંગ પ્રા.લી.માંથી આવુ છું જે દિલ્હીની પ્રતિષ્ઠિત માર્કેટ રીસર્ચ કંપની છે. અમે PPAC ના ભાગરૂપે તમને મળી રહ્યા છીએ. PPAC ભારતમાં એલપીજીની ઓછી ઉપલબ્ધતાવાળા વિસ્તારમાં ઓછા વપરાશનાં વિવિધ મુદ્દાઓને સમજવા ઇચ્છે છે. રાજ્યમાં મુખ્ય રીસર્ચ તે વિસ્તારોમાં કરવામાં આવી રહ્યુ છે જ્યાં એલપીજીનો વપરાશ ઓછો છે. ઘરમાં સાદા ઇંધણનો પુરવઠો મળી રહે તે માટેનાં આ સર્વેમાં સહકાર આપવા તમને વિનંતી કરીએ છીએ.

વિભાગ એક : ભૌગોલિક ક્ષેત્રની જાણકારી [બધી વિગતો ઇન્વેસ્ટીગેટરે ભરવાની છે.]

Area (Tick)	① ગ્રામીણ	② સરકાર	રાજ્ય (જણાવો)
છાલો (જણાવો)			પેટા છાલો (જણાવો)
જામી (જણાવો)			લ્લોઠ / સરકાર (જણાવો)
ગામડું (જણાવો)			

વિભાગ - બી - રીસ્યોન્ડન્ટની પસંદગીનાં માપદંડો

રીસ્યોન્ડન્ટનું નામ	પહેલું નામ	વચ્ચેનું નામ	અટક/ પરિવારનું નામ
લિંગ	① પુરુષ		② મહિલા
મુખ્ય કમાનાર વ્યક્તિ	શું તમે તમારા ઘરખર્ચમાં સૌથી વધુ ફાળો આપો છો કે તમે ઘર માટેનાં મોટા ખર્ચાઓ માટેનાં મુખ્ય નિર્ણયકર્તા છો ?		① હા ચાલુ રાખો
એલપીજી કનેકશન	શું તમારી પાસે એલપીજી કનેકશન છે ? (શું તમારી કન્સ્યુમર નંબર છે જો તમે એલપીજી સિલિન્ડર ભૂક કરાવી રહી છો)		② ના બંધ કરી
			① હા ચાલુ રાખો
			② ના ચાલુ રાખો

વિભાગ ત્રણ - ઇંધણની ક્ષણની વપરાશ

Q1. તમે સંઘવા, પાણી ગરમ કરવા અને પ્રકાશ કરવા વગેરે માટે જુદા જુદા પ્રકારનાં ઇંધણનો ઉપયોગ કરતા છો. શું કું જાણી શકુ છું કે તમે તમારા ઘરમાં કયા ઇંધણનો ઉપયોગ કરો છો ? લાગુ પડે તે એક અથવા એકથી વધુ પર ટીક કરો

① લાકડા	② જાઓમાસ (પાકના અવશેષ)	③ છાણ	④ કેરીસીત	⑤ કીલસો/ લાકડાનો કીલસો
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Q2. ઘરમાં ઇંધણનો મુખ્ય ઉપયોગ શેના માટે થાય છે ? કૃપા કરી દરેક પ્રવૃત્તિ માટે મુખ્ય બે ઇંધણ પર ટીક કરો.

પ્રવૃત્તિ	લાકડા	જાઓમાસ (પાકના અવશેષ)	છાણ	કેરીસીત	કીલસો/ લાકડાનો કીલસો
a) રસોઇ માટે અને પાણી ગરમ કરવા					
b) પ્રકાશ માટે					
c) અન્ય. કૃપા જણાવો _____					

Q3. ઘરમાં સંઘવા માટે કેટલા ઇંધણની જરૂર પડે છે ? કૃપા કરી એક મહિનામાં વપરાતો જથ્થો જણાવો અને એક મહિનાનો ખર્ચ કરો.

ઇંધણનું માધ્યમ	એકમ	વપરાતો જથ્થો / મહિનાનો	ખર્ચ (રૂપિયા / મહિના)
a) લાકડા	કિ.ગ્રા.		
b) જાઓમાસ (પાકના અવશેષ)	કિ.ગ્રા.		
c) છાણ	કિ.ગ્રા.		
d) કેરીસીત	લિ.		
e) કીલસો/ લાકડાનો કીલસો	કિ.ગ્રા.		
ઇંધણ પર કુલ ખર્ચ (રૂપિયા પ્રતિ મહિના)			

વિભાગ ચાર - એલપીજી ની જાણકારી, અરજી, અડચણો, ઇંચાઈ

Q4. શું તમે ઘરમાં સંઘવાનાં કૈનુ માટે એલપીજી સિલિન્ડર વપરાય છે તેમ જાણો છો ?	① હા	② ના
Q5. શું તમે ક્યારેય એલપીજી નાં કનેકશન માટે અરજી કરી હતી ?	① હા	② ના
Q6. જો હા. તમે કેટલા સમય પહેલા અરજી કરી હતી ?	① 3 મહિનાથી ઓછા	② 4-6 મહિના
Q7. તમે જણ સુધી એલપીજી કનેકશન કેમ મેળવ્યુ નથી ?	③ 6 મહિના - 1 વર્ષ	④ 1 વર્ષથી વધારે
① મારી પાસે અરજી કરવા માટે આવશ્યક ડોકુમેન્ટ ન હતાં	② એલપીજીનાં ડિસ્ટ્રીબ્યુટર તરફથી મોડું થયુ છે	③ અન્ય. કૃપા કરી જણાવો
Q9 પર જાવ		
Q8. જો ના. તમે જણ સુધી એલપીજી કનેકશન માટે કેમ અરજી કરી નથી ?		
a) સંઘવાનાં ઇંધણ તરીકેનાં એલપીજી સિલિન્ડર વિશે ભડુ જાણતા નથી	① હા	② ના
b) અરજીની પ્રક્રિયા વિશે જાણતા નથી	① હા	② ના
c) અરજીની પ્રક્રિયા ખૂબ પેરેશાનીયુક્ત છે	① હા	② ના
d) અરજી કરવા માટે જરૂરી પુરાવા/ ઓળખનાં ડોકુમેન્ટ નથી	① હા	② ના
e) સિલિન્ડર લેવા માટેનું / અરજી જમા કરાવવાનું ડિસ્ટ્રીબ્યુટર સેન્ટર ખૂબ દુર છે	① હા	② ના
f) એલપીજી કનેકશન મેળવવા વધારે સમય રાક જોવી પડે છે	① હા	② ના
g) ક્ષણમાં ઉપલબ્ધ સિલિન્ડરની સાઇઝ (14kg) ખૂબ મોટી છે	① હા	② ના
h) એલપીજી ઇંધણમાં સંઘવા ખોરાકની સ્વાદ પસંદ નથી	① હા	② ના
i) એલપીજી વાપરવામાં સુરક્ષિત નથી	① હા	② ના

j) પ્રારંભિક ખર્ચ વધારે - સીક્યુરીટી ડિપોઝીટ	① શ	② ના		
k) વાપરવાનો ખર્ચ વધારે - સિલિન્ડરનો કિંમત	① શ	② ના		
l) ફરી ભરેલી સિલિન્ડર મેળવવા વધારે સમય રાક જોવી પડે છે	① શ	② ના		
m) ઓલપીજી સ્ટવ કેવી રીતે વાપરવી તે જાણના તથી	① શ	② ના		
n) અન્વ. કૃપા કરી જણાવી				
Q9. તમે કશું કે તમે દર મહિને રાંધવાનાં ઇંધણ પર RS., ખર્ચો છો, આ રકમને ધ્યાનમાં રાખતાં, તમે શું કિંમતે ઓલપીજી ખરીદવા તૈયાર થશો ? એક ટીક કરો: (એલ રૂપિયા મા કાશી _____.				
① શલના ઇંધણ જેટલી જ અથવા ઓછી કિંમત	② શલનાં ઇંધણ કરતા 10-20 % વધારે કિંમત			
③ શલનાં ઇંધણ કરતા 0-10 % વધારે કિંમત	④ શલનાં ઇંધણ કરતા 20 % થી વધારે કિંમત			
Q10. શું તમે સરકાર ધ્વારા રજૂ કરાયેલ ભારતમાં લોકવીશાઈ પેટ્રોલિયમ ગેસ (LPG) સ્કીમ પસંદ ડિરેક્ટ ભેતીટીટ ટ્રાન્સફર સ્કીમ ટૂ ભેક વિશે સાંભળ્યું છે ?	① શ	② ના		
Q11. તમને શું આર્થિક મદદ ઓલપીજી વાપરવા તરફ વાળશે ? એક ટીક				
① સીક્યુરીટી ડિપોઝીટ ન બેવી જોઈએ	② સીક્યુરીટી ડિપોઝીટનાં માસિક બના	③ ઓલપીજીની કિંમતમાં ઘટાડો		
Q12. તમને સિલિન્ડરની સીધી વધુ કાંઈ સાઈઝ પસંદ છે ? એક ટીક	① 2 કિ.ગ્રા	② 6 કિ.ગ્રા	③ 10 કિ.ગ્રા	④ 14 કિ.ગ્રા
Q13. તમારા વિસ્તારથી ઓલપીજીનું વિતરણ કેન્દ્ર કેટલું દુર છે ? એક ટીક				
① 0-5 કિ.મી.	② 6-10 કિ.મી.	③ 10-15 કિ.મી.	④ કાંઈ કેન્દ્ર તથી	⑤ તથી જાણતાં
Q14. શું તમે ઓલપીજી ડિસ્ટ્રીબ્યુટરની નીચે આપેલી કંપનીઓ વિશે ક્યારેય સાંભળ્યું હતું ? લાગુ પડે તે એક અથવા એકથી વધુ પર ટીક કરો				
① ઇન્ડેન	② ભારત ગેસ	③ ઓલપીજી ગેસ		
Q15. તમારા ગામ માં LPG નું વિતરણ કિના દવારા <input type="checkbox"/> <input type="checkbox"/> જોઈએ				
① ગ્રામ પંચાયત	② સ્થાનિક એજન્સીઓ	③ ઓઇલ વિતરણ કંપનીઓ	④ અન્ય _____	

વિભાગ પાંચ - ઘરની જનસંખ્યાની રૂપરેખા

શું તમારું ભેકમાં ખાતું છે ?	① શ		② ના					
શું તમારી પાસે કોઈપણ સરકારી ઓળખની પરાવી છે ? લાગુ પડે તેના પર ટીક કરો	① આધાર કાર્ડ	② રાશન કાર્ડ	③ ઢાઈવીંગ લાયસન્સ	④ વીટર આઈડી કાર્ડ				
તમારી ઉંમર પુરા થયેલા વર્ષોમાં કશી ?	① 18-21 વર્ષ	② 22-35 વર્ષ	③ 36-50 વર્ષ	④ 50 વર્ષથી વધારે				
તમારી વ્યવસાય શું છે ? કૃપા કરી તમારા મુખ્ય બે વ્યવસાય કશી ?	① ખેડૂત	② ખેતમજૂર	③ અન્ય મજૂર	④ દુકાનદાર				
	⑤ નોકરી		⑥ ધંધો					
	⑦ ભેતીજવાર							
કૃપા કરી મને તમે આજ સુધી મેળવેલ ઉચ્ચ શિક્ષણ કશી ?	① 5 th ધોરણ કે તેથી ઓછું	② 6 th - 10 th ધોરણ		③ 11 th - 12 th ધોરણ				
	④ સ્નાતક	⑤ અનુ સ્નાતક						
તમારા ઘરની એક મહિનાની સરેરાશ આવક શું છે - ભારતીય રૂપિયામાં ? એક ટીક કરો	① રૂપિયા 2250 થી ઓછા	② રૂપિયા 2250-5000	③ રૂપિયા 5000-10000					
	④ રૂપિયા 10000-25000	⑤ રૂપિયા 25000 થી વધારે						
તમારા ઘરમાં કેટલા લોકો રહે છે ?	પુત્ર સંખ્યાની સંખ્યા (18 વર્ષથી વધારે)	a) પુરૂષ	b) મહિલા					
	બાળકોની સંખ્યા (18 વર્ષથી ઓછી ઉંમર)	c) પુરૂષ	d) મહિલા					
તમે કેવા પ્રકારનાં ઘરમાં રહો છો ? કાઉન્ટર ટોપ ઘરનો પ્રકાર વર્ણવી								
① પાકા	② અડધા પાકા		③ કાચા					
તમારા ઘરમાં આમાંથી શું સુવિધાઓ છે ? લાગુ પડે ત્યાં ટીક કરો.								
① પાણીનો પુરવઠો	② વીજળી	③ ઇન્ટરનેટ	④ ટેલીવીઝન	⑤ 2 બેડરૂમ	⑥ 4 બેડરૂમ	⑦ મોબાઇલ કોન્ટેન્ટ		
તમારું સંપૂર્ણ સરનામું આપો								
કૃપા કરી તમારી સંપર્ક નંબર આપો	a) મોબાઇલ							
	b) લિન્ડલાઇન							
	ઇમેઇલ એડ્રેસ							



NAME OF INTERVIEWER _____
 CHECKED BY SUPERVISOR _____

DATE OF INTERVIEW | | | | 1 | 5

HOUSEHOLD QUESTIONNAIRE

Good day! We are from Prastut Consulting Pvt. Ltd, a reputed market research company in Delhi. We are visiting you on behalf of PPAC. PPAC would like to understand various issues in the consumption of LPG especially in the areas of low LPG penetration in India, primary research in the state is being conducted in the regions where LPG penetration is below par. We request you to cooperate in this survey to enable supply of clean fuels to homes.

ଭାଗ୍ୟ ଏକ ଧର୍ମପାଳିକା ଶ୍ରେଣୀ ବିଭାଗ (ଅନୁପ୍ରାପ୍ୟକରଣ ସମ୍ପୂର୍ଣ୍ଣ ବିଭାଗକୁ ପୂରା କରିବେ)

Area (ଠିକ)	① ଗ୍ରାମୀଣ	② ସହର	ରାଜ୍ୟ (ଉଲ୍ଲେଖ କରନ୍ତୁ)
ଜିଲ୍ଲା (ଉଲ୍ଲେଖ କରନ୍ତୁ)			ଉପ ଜିଲ୍ଲା (ଉଲ୍ଲେଖ କରନ୍ତୁ)
ବ୍ଲକ (ଉଲ୍ଲେଖ କରନ୍ତୁ)			ଗ୍ରାମ / ସହର (ଉଲ୍ଲେଖ କରନ୍ତୁ)
ଗ୍ରାମ ପଞ୍ଚାୟତ (ଉଲ୍ଲେଖ କରନ୍ତୁ)			

ଭାଗ ସ୍ୱରୂପ ଶୁଦ୍ଧଭରପାଠା ତରଳ ମାପକଣ୍ଠ

ଉଚ୍ଚରପାଠାକ ନାମ	ପ୍ରଥମ ନାମ	ମଧ୍ୟ ନାମ	ସାକ୍ଷିଆ /ପାରିବାରିକ
ଲିଙ୍ଗ	① ପୁରୁଷ		② ମହିଳା
ସିଟିକ୍ୟୁର	ଘରେ ହେଉଥିବା ଖର୍ଚ୍ଚର ଅଧିକାଂଶ ଭାଗ ଆପଣ ବହନ କରନ୍ତି ବା ପରିବାରରେ ଅଧିକାଂଶ ଖର୍ଚ୍ଚ ପାଇଁ ଆପଣ ନିଷ୍ପତ୍ତି ଗ୍ରହଣ କରନ୍ତି ।		① ହଁ ଅସ୍ପଷ୍ଟ ବୁଝାନ୍ତୁ ② ନାହିଁତେବେ କରନ୍ତୁ ।
ଏକପିଟି କନେକ୍ସନ	ଏକପିଟି କନେକ୍ସନ ଆପଣଙ୍କର ଅଛି କି (ଆପଣଙ୍କର ଉପଭୋକ୍ତା ନମର ଦିଅନ୍ତୁ ଯାହା ଫଳରେ ଆପଣ ଏକପିଟି ସିଲିଣ୍ଡର ବୁକ କରି ପାରିବେ)		① ହଁତେବେ କରନ୍ତୁ ② ନାଅସ୍ପଷ୍ଟ ବୁଝାନ୍ତୁ

ଭାଗ ୩ - ବର୍ତ୍ତମାନ ଭଣ୍ଡନ ଖର୍ଚ୍ଚ

ପ୍ରଶ୍ନ ୧. ଆପଣ ଉନ୍ନତ, ପାଣି ଉତ୍ପାଦନ କରିବା ଓ ଆଲୁଅ ଜଳାଭବା ପାଇଁ ବିଭିନ୍ନ ପ୍ରକାରର ଭଣ୍ଡନ ବ୍ୟବହାର କରୁଥିବେ ଆପଣ ବର୍ତ୍ତମାନ ନିଜ ଘରେ କେଉଁ ଭଣ୍ଡନ ବ୍ୟବହାର କରୁଛନ୍ତି ସେ ବିଷୟରେ ନିଜ ପାରିବାରିକ ବି (ଯେଉଁଠି ଆବଶ୍ୟକ ଯୋଗ୍ୟ କିମ୍ବା ଦୁଇଟି ସ୍ଥାନରେ ଠିକ୍ ଠିକ୍ ମାରନ୍ତୁ ।

① କାଠ	② ବାୟୋମାସ (ଶସ୍ୟ ଅବଶିଷ୍ଟ)	③ ଗୋବର ଜାଳେଣୀ /ଉପାଳା	④ କିରୋସିନ	⑤ କୋଇଲା
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ପ୍ରଶ୍ନ ୨.ଆପଣଙ୍କର ପରିବାରରେ ଭଣ୍ଡନ ବ୍ୟବହାର ଅଧିକ କେଉଁ କାର୍ଯ୍ୟ ପାଇଁ ହୁଏ । (ଦୟାକରି ପ୍ରତ୍ୟେକ ଉପରୋକ୍ତ ପାଇଁ ଦୁଇ ପ୍ରମାଣ ଭଣ୍ଡନ ପର୍ଯ୍ୟନ୍ତ ଠିକ୍ ଠିକ୍ ମାରନ୍ତୁ)

ଉପରୋକ୍ତ	କାଠ	ବାୟୋମାସ (ଶସ୍ୟ ଅବଶିଷ୍ଟ, ବାୟୋଗ୍ୟାସ)	ଗୋବର ଜାଳେଣୀ /ଉପାଳା	କିରୋସିନ	କୋଇଲା
କ) ଉନ୍ନତ, ପାଣି ଉତ୍ପାଦନ କରିବା					
ଖ)ଆଲୁଅ ଜଳାଭବା					
ଂ)ଉପରୋକ୍ତ ଅନ୍ୟ କିଛି କିଛି ଯୋଗ୍ୟ କିମ୍ବା					

ପ୍ରଶ୍ନ ୩. ଉନ୍ନତ କାର୍ଯ୍ୟରେ ବ୍ୟବହାର ହେଉଥିବା ଭଣ୍ଡନ ମାତ୍ରା କେତେ ? (ପ୍ରତି ମାସ କେତେ ଖର୍ଚ୍ଚ କରୁଛନ୍ତି ଓ ମାସରେ କେତେ ଟଙ୍କା ଖର୍ଚ୍ଚ ହେଉଛି ସେ ବିଷୟରେ ଉଲ୍ଲେଖ କରନ୍ତୁ) ଭଣ୍ଡନ ଶ୍ରେଣୀ

ଭଣ୍ଡନ ଶ୍ରେଣୀ	ଏକକ	କେତେ ମାତ୍ରାରେ ବ୍ୟବହାର /ପ୍ରତି ମାସରେ	ଖର୍ଚ୍ଚ ପ୍ରତି /ମାସରେ
କ)କାଠ	କିଗ୍ରା		
ଖ)ବାୟୋମାସ (ଶସ୍ୟ ଅବଶିଷ୍ଟ, ବାୟୋଗ୍ୟାସ)	କିଗ୍ରା		
ଂ)ଗୋବର ଜାଳେଣୀ /ଉପାଳା	କିଗ୍ରା		
ଛ)କିରୋସିନ	ଲିଟର		
ଞ)କୋଇଲା	କିଗ୍ରା		
ଭଣ୍ଡନରେ କେତେ ଖର୍ଚ୍ଚ ଟଙ୍କା ପ୍ରତି ମାସରେ			

ଭାଗ ୪ - ଏକପିଟି ସମ୍ବେଦନତା, ଆବେଦନ ପ୍ରତିବନ୍ଧକ, ଉଦ୍ଦେଶ୍ୟ

ପ୍ରଶ୍ନ-୪ - ଘରେ ଏକପିଟି ସିଲିଣ୍ଡର ଗୋଷ୍ଠର କିମ୍ବା କିମ୍ବା ବ୍ୟବହାର କରାଯାଏ, ଏ ସମ୍ପର୍କରେ ଆପଣ ଅବଗତ ଅଛନ୍ତି କି ?	① ହଁ	② ନା		
ପ୍ରଶ୍ନ-୫ ଆପଣ କେବେହେଲେ ଏକପିଟି କନେକ୍ସନ ପାଇଁ ଆବେଦନ କରିଛନ୍ତି କି ?	① ହଁ ୬ ନମର ପ୍ରଶ୍ନକୁ ଯାଆନ୍ତୁ	② ନା ୮ ନମର ପ୍ରଶ୍ନକୁ ଯାଆନ୍ତୁ		
ପ୍ରଶ୍ନ-୬ ଯଦି ହଁ ତେବେ କେତେ ଦିନ ପୂର୍ବେ ଆବେଦନ କରିଥିଲେ ?	① ୧ ଦିନ ମାସକୁ କମ	② ୪-୬ ମାସ	③ ୬ ମାସରୁ ୧ ବର୍ଷ	④ ୧ ବର୍ଷରୁ ଉର୍ଦ୍ଧ
ପ୍ରଶ୍ନ-୭ ବର୍ତ୍ତମାନ ଯାଏ ଆପଣ ଏକପିଟି କନେକ୍ସନ ପାଇ ନାହାନ୍ତି କାହିଁକି ?	① ଆବେଦନ ପାଇଁ ଆବଶ୍ୟକ ସମସ୍ତ ଦସ୍ତାବେଜ ଗୋ ପାଖରେ ନାହିଁ ② ଏକପିଟି ବିତରକଙ୍କ ପକ୍ଷରୁ ବିକଳ ③ ଆଉ କିଛି ଯଦି ତେବେ କହନ୍ତୁ			
ପ୍ରଶ୍ନ ୮ ଯଦି ନାହିଁ ତେବେ ଆପଣ ଏକପିଟି କନେକ୍ସନ ପାଇଁ କାହିଁକି ବର୍ତ୍ତମାନ ଯାଏ ଆବେଦନ କରି ନାହାନ୍ତି ?				
କ)ଏକପିଟି ସିଲିଣ୍ଡର ଉନ୍ନତ ଭଣ୍ଡନ ବୋଲି ଜଣା ନାହିଁ	① ହଁ	② ନା		
ଖ)ଆବେଦନର ପ୍ରକ୍ରିୟା ସମ୍ପର୍କରେ ଜଣା ନାହିଁ	① ହଁ	② ନା		
ଂ)ଆବେଦନର ପ୍ରକ୍ରିୟା ଜଟିଳ	① ହଁ	② ନା		
ଛ)ଆବେଦନ ପାଇଁ ଆବଶ୍ୟକ ପ୍ରମାଣ ବା ପରିଚୟ ଦସ୍ତାବେଜ ନାହିଁ ।	① ହଁ	② ନା		
ଞ)ବିତରଣ କେନ୍ଦ୍ରରୁ ସିଲିଣ୍ଡର ଆଣିବା ବା ଆବେଦନ କରିବାର ଖୁବ୍ ଦୂର	① ହଁ	② ନା		

କ) ଏଲପିଡି କନେକ୍ଟର ପାଇବା ପାଇଁ ଦୀର୍ଘ ଅପେକ୍ଷା ସମୟ	① ହଁ	② ନା
ଝ) ଉପନଳ ସିନିଷ୍ଟର (୧୪ କେଡି)ର ଆକାର ଖୁବ୍ ବଡ଼ ।	① ହଁ	② ନା
ଞ) ଏଲପିଡି ଇନ୍ଦନରେ ରକ୍ଷା ଖାଦ୍ୟ ପୁସ୍ତାକ୍ ନୁହେଁ	① ହଁ	② ନା
ଟ) ଏଲପିଡି ବ୍ୟବହାର କରିବାକୁ ପୁରୁଣିତ ନୁହେଁ	① ହଁ	② ନା
ଠ) ଉଚ୍ଚ ପ୍ରାରମ୍ଭିକ ମୂଲ୍ୟ (ପୁରୁଣା ଅମାନତ)	① ହଁ	② ନା
ଡ) ଉଚ୍ଚ ଖର୍ଚ୍ଚ (ସିନିଷ୍ଟର ମୂଲ୍ୟ)	① ହଁ	② ନା
ଣ) ସିନିଷ୍ଟରକୁ ପୁଣି ପୁରଣ କରିବା ପାଇଁ ଦୀର୍ଘ ଅପେକ୍ଷା ସମୟ	① ହଁ	② ନା
ତ) ଏଲପିଡି ଷ୍ଟୋରକୁ ବିପଦି ବ୍ୟବହାର କରାଯାଏ ତାହା ଜଣା ନାହିଁ ।	① ହଁ	② ନା
ଥ) ଯଦି ଅନ୍ୟ କିଛି ଚେଷ୍ଟା କରନ୍ତୁ ----	① ହଁ	② ନା

୯. ଆପଣ କହିଲେ ଯେ ରୋଷେଇ କରିବା ପାଇଁ ଆପଣ ଇନ୍ଦନ ଉପରେ ନାହିଁକି ---- ଖର୍ଚ୍ଚ କରନ୍ତି । (କ୍ୟୁମାର ମୋଟ) ଏହି ଟଙ୍କା ଉପରେ ବିଚାର କରି ଆପଣ ଏଲପିଡି କିଣିବା ପାଇଁ କେତେ ମୂଲ୍ୟ ଦେବା ପାଇଁ ଉଚ୍ଚୁକ ଅଛନ୍ତି । (କେବଳ ଗୋଟିଏରେ ଠିକ୍ କରନ୍ତୁ) । ସମ୍ଭବତଃ ଟଙ୍କାରେ ଲୁହନ୍ତୁ ।

① ସମାନ ସମୟରେ କିମ୍ବା ବର୍ତ୍ତମାନ ଇନ୍ଦନ ଠାରୁ କମ୍ ସମୟରେ	③ ବର୍ତ୍ତମାନ ଇନ୍ଦନ ଠାରୁ ୧୦ରୁ ୨୦ ପ୍ରତିଶତ ଅଧିକ ସମୟରେ
② ବର୍ତ୍ତମାନ ଇନ୍ଦନ ଠାରୁ ୧୦ ପ୍ରତିଶତ ଅଧିକ ସମୟରେ	④ ବର୍ତ୍ତମାନ ଇନ୍ଦନ ଠାରୁ ୨୦ ପ୍ରତିଶତ ଅଧିକ ସମୟରେ

ପ୍ରଶ୍ନ ୧୦ ଆପଣ ସରକାରଙ୍କ ଦ୍ୱାରା ଆରମ୍ଭ କରାଯାଇଥିବା ଏଲପିଡି ସବସିଡି ପାଇଁ ପଞ୍ଚମ ଶତକରେ ବେନିଫିଟ ଗ୍ରାହଣଯୋଗ୍ୟ ସମ୍ପର୍କରେ ଶୁଣିଛନ୍ତି କି ?

ପ୍ରଶ୍ନ ୧୧. କଣ ବିଭାଗ ଗ୍ରୋଗ୍ରାହନ ଦେଲେ ଆପଣ ଏଲପିଡି ବ୍ୟବହାର କରିବେ । (ଗୋଟିଏରେ ଠିକ୍ ଚିହ୍ନ ମାରନ୍ତୁ)

① ପୁରୁଣା ଅମାନତକୁ ଛାଡ଼ି କରାଗଲେ	② ପୁରୁଣା ଅମାନତକୁ ନାହିଁକି ବିକିରେ ପ୍ରଦାନ	③ ଏଲପିଡି ମୂଲ୍ୟରେ ହ୍ରାସ
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ପ୍ରଶ୍ନ ୧୨. ସବୁଠାରୁ ଉଚ୍ଚ ସିନିଷ୍ଟରର ଆକାର କଣ ହେବ (ଗୋଟିଏରେ ଠିକ୍ ଚିହ୍ନ ମାରନ୍ତୁ)

① ୨ କିଗ୍ରା	② ୬ କିଗ୍ରା	③ ୧୦ କିଗ୍ରା	④ ୧୪ କିଗ୍ରା
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ପ୍ରଶ୍ନ ୧୩ ଆପଣଙ୍କ ଘର ନିକଟରୁ ଏଲପିଡି ବିତରଣ କେନ୍ଦ୍ର କେତେ ଦୂରରେ ଅବସିତ (ଗୋଟିଏରେ ଠିକ୍ ମାରନ୍ତୁ) ? (ଗୋଟିଏରେ ଠିକ୍ ମାରନ୍ତୁ)

① ୦-୫ କିମି	② ୬-୧୦ କିମି	③ ୧୦-୧୫ କିମି	④ କେନ୍ଦ୍ର ନାହିଁ	⑤ ଜଣା ନାହିଁ
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ପ୍ରଶ୍ନ ୧୪. ନିମ୍ନ ଲିଖିତ ଏଲପିଡି ବିତରଣ କମ୍ପାନୀ ମାନଙ୍କ ମଧ୍ୟରୁ କାହାର ନାମ ଆପଣ ଶୁଣିଛନ୍ତି କି ? ଯାହାର ନାମ ଶୁଣିଛନ୍ତି ସେଥିରେ ଠିକ୍ ଚିହ୍ନ ମାରନ୍ତୁ ।

① ଇଣ୍ଡିଆନ	② ଭାରତ ଗ୍ୟାସ	③ ଏଡପି ଗ୍ୟାସ
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୧୫. ଆପଣଙ୍କ ଗ୍ରାମରେ ଏଲପିଡି ବିତରଣ କାହା ମାଧ୍ୟମରେ ହେବା ଆବଶ୍ୟକ ?

① ଗ୍ରାମ ପଞ୍ଚାୟତ	② ଘନୀୟ ସଂଘ	③ ଠିକ୍ ବିତରଣ କମ୍ପାନୀ	④ ଅନ୍ୟ କେହି ----
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ଭାଗ - ୫ ପରିବାରର ଜ୍ଞାନସଂଖ୍ୟାକାୟ ତଥ୍ୟ

ଆପଣଙ୍କର ବ୍ୟାଙ୍କ ଏକାଉଣ୍ଟ ଅଛି କି	① ହଁ		② ନା				
ଆପଣଙ୍କ ନିକଟରେ ସରକାରୀ ପରିଚୟ ଅଛି କି ? (ଯାହା ଉପନଳ ସେଥିରେ ଠିକ୍ ଚିହ୍ନ ମାରନ୍ତୁ)	① ଆଧାର କାର୍ଡ	② ରାସନ କାର୍ଡ ଓ	③ ଡ୍ରାଇଭିଂ ଲାଇସେନ୍ସ	④ ଗୋଟର ପରିଚୟ ପତ୍ର			
ଆପଣଙ୍କର ପୁଣି କେଉଁକି ସେ କେତେ ?	① ୧୮-୨୧ ବର୍ଷ	② ୨୨-୩୫ ବର୍ଷ	③ ୩୬- ୫୦ ବର୍ଷ	④ ୫୦ ବର୍ଷରୁ ଉର୍ଦ୍ଧ			
ଆପଣ କଣ କରନ୍ତି ? / (ଆପଣ କଣ କରନ୍ତି ସେ ବିଷୟରେ ଜଣାନ୍ତୁ)	① କୃଷକ	② କୃଷି ଶ୍ରମିକ	③ ଅନ୍ୟ ଶ୍ରମିକ	④ ଦୋକାନୀ			
	⑤ ସେବା		⑥ ବ୍ୟବସାୟ	⑦ ବେକାର			
ଆପଣ କେତେ ଓଡ଼ିଆ ପଢ଼ିବାକୁ ବର୍ତ୍ତମାନ ସାଧ୍ୟ ପଡ଼ିଛନ୍ତି ?	① ପଞ୍ଚମ ଶ୍ରେଣୀ ବା ତା ଠାରୁ କମ		② ଷଷ୍ଠରୁ ଦଶମ	③ ଏକାଦଶରୁ ଦ୍ୱାଦଶ			
	④ ସ୍ନାତକ		⑤ ସ୍ନାତକୋତ୍ତର				
ଆପଣଙ୍କର ପରିବାରର ହାରାହାରି ନାହିଁକି ଆୟ କେତେ (ଭାରତୀୟ ମୁଦ୍ରାରେ) (ଗୋଟିଏରେ ଠିକ୍ ଚିହ୍ନ ମାରନ୍ତୁ)	① ୨୨୫୦୦୦ କମ		② ୨୨୫୦୦୦ ୫୦୦୦୦ ଟଙ୍କା	③ ୫୦୦୦୦୦ ୧୦୦୦୦୦ ଟଙ୍କା			
	④ ୧୦୦୦୦୦୦ ୨୫୦୦୦୦ ଟଙ୍କା		⑤ ୨୫୦୦୦୦ ଟଙ୍କାରୁ ଉର୍ଦ୍ଧ				
ଆପଣଙ୍କ ପରିବାରରେ କେତେ ଜଣ ରହନ୍ତି ?	ପ୍ରାପ୍ତ ବୟସ୍କଙ୍କ ସଂଖ୍ୟା (୧୮ ବର୍ଷରୁ ଉର୍ଦ୍ଧ)	ପୁରୁଷ		ମହିଳା			
	ପିଲା ମାନଙ୍କର ସଂଖ୍ୟା (୧୮ ବର୍ଷରୁ କମ)	ପୁରୁଷ		ମହିଳା			
ଆପଣ କେଉଁ ପ୍ରକାରର ଘରେ ରହନ୍ତି ? ନିଜର ଶୋ କାନ୍ଥରୁ ପ୍ରତ୍ୟେକ ଘର ସମ୍ପର୍କରେ କୁହନ୍ତୁ ।	① ପଞ୍ଚା ② ଅଧା ପଞ୍ଚା ③ କବା						
ଆପଣଙ୍କ ଘରେ କେଉଁ ମୁଖ୍ୟ ଉପନଳ ରହିଛି । (ଯାହା ଉପନଳ ସେଥିରେ ଠିକ୍ ଚିହ୍ନ ମାରନ୍ତୁ)	① କଳ ଯୋଗାଣ	② ବିଦୁଳି	③ ଇନ୍ଦନନେତ	④ ବେନିଫିଟନ	⑤ ଦୁଇ ଚକିଆ	⑥ ତାରି ଚକିଆ	⑦ ମୋବାଇଲ ଫୋନ କନେକ୍ଟର
ସମସ୍ତ ଆପଣଙ୍କର ସମ୍ପୂର୍ଣ୍ଣ ଠିକଣା ଦିଅନ୍ତୁ							
ସମସ୍ତ ଆପଣଙ୍କର ଯୋଗାଯୋଗ ନମ୍ବର ଦିଅନ୍ତୁ	ମୋବାଇଲ						
	ଲ୍ୟାଣ୍ଡ ଲାଇନ						
	ଇମେଲ ଠିକଣା						

Annexure 5: Gram panchayat survey questionnaire

District _____ Date: DD/MM/YY Questionnaire No. _____

पृष्ठभूमि: पीपीएसी जगले 3 सालों में देश में एलपीजी इस्तेमाल को बढ़ाने और कार्यक्षेत्र को विस्तार के लिए पर्याप्त ठेकारियों और योजना के साथ एलपीजी नेटवर्क की संपूर्ण आपूर्ति सुनिश्चिता संवाहन को ध्यान में रखते हुए एक मुख्य योजना और संपूर्ण समाधान ठेकार करने पर विचार कर रही है।

सर्वे का उद्देश्य: एलपीजी की खपत में खासतौर पर भारत में कम एलपीजी इस्तेमाल वाले क्षेत्रों में विभिन्न मसलों को समझने के लिए, राज्य में प्राथमिक रिसर्व उन क्षेत्रों में की जा रही है जहां एलपीजी का इस्तेमाल कम है। सर्वे से कम खपत के कारणों और एलपीजी खपत एवं वितरण के साथ अन्य उपयुक्त मसलों की पहचान की जायेगी। घरों में साफ ईंधन की आपूर्ति करने के काम में उत्तरदाता का सहयोग अपेक्षित है।

इस प्रश्नपत्र के उद्देश्य के लिए ग्रामीण/क्षेत्र मतलब ग्राम पंचायत के अधीन आने वाले क्षेत्र में सामाजिक किये जाने हैं।

Questionnaire

सेक्शन 1: साक्षात्कार किये जाने वाले व्यक्ति के बारे में जानकारी

- उत्तरदाता(सरपंच/कोई पंच) का नाम _____
पहला नाम _____ मध्यम नाम _____ कुलनाम/परिवार नाम _____
- ग्राम पंचायत में उत्तरदाता किस पद पर हैं? _____
- कृपया अपना फोन नंबर बताएँ (जो उपलब्ध हो) मोबाइल/लैंडलाइन नंबर: _____
- पता _____
गांव _____ तालुका _____ खण्ड संख्या _____ जिला _____
- क्या आपके घर में एलपीजी कनेक्शन है? हां नहीं

सेक्शन 2: गांव/क्षेत्र के बारे में जानकारी

- गांव/क्षेत्र में घर की संख्या _____
- a) कुल _____ b) पक्का _____ c) कुछ पक्का _____ d) कच्चा _____
- गांव से नजदीकी राष्ट्रीय राजमार्ग, राज्य राजमार्ग, या मुख्य जिला सड़क (एमडीआर), कौन सी है और दूरी?
हाईवे/राजमार्ग _____ गांव/क्षेत्र से दूरी (किमी) _____
- a) राष्ट्रीय राजमार्ग _____
- b) राज्य राजमार्ग _____
- c) मुख्य जिला सड़क _____
- d) नजदीकी रेलवे स्टेशन _____
- कृपया गांव/क्षेत्र में अधिकतम जनसंख्या के लिए प्रति महीना भारतीय रुपये में आमदनी वर्ग बताएँ (एक टिक करें जो लागू हो)
 2,250 से कम 2,250-5,000 5,000-10,000 10,000-25,000 25,000 से अधिक
- कृपया अपने गांव/क्षेत्र की निम्न जानकारी दें:
a. जनसंख्या _____ (लोगों की संख्या)
b. गांव/क्षेत्र में साक्षरता स्तर 10% से कम 10%-30% 30%-50% 50-70% 70% से अधिक
c. अधिकतम निवासियों का प्रमुख व्यवसाय (किन्हीं दो पर टिक जैसे लागू हो)
 किसान खेतीहर मजदूर अन्य मजदूर दुकानदार नौकरी बिजनेस बेरोजगार
d. पिछड़ी जाति की जनसंख्या का प्रतिशत (अनुसूचित जाति/अनुसूचित जनजाति/अन्य पिछड़ा वर्ग) एक टिक करें जैसे लागू हो)
 10% से कम 10%-30% 30%-50% 50-70% 70% से अधिक
- कृपया बताएँ गांव/क्षेत्र कितने वर्ग किमी में फैला हुआ है _____
- कृपया गांव/क्षेत्र के इलाके की प्रमुख विशेषताओं पर टिक करें (कृपया एक या ज्यादा टिक जैसे लागू हो)
 पहाड़ी क्षेत्र जंगली क्षेत्र समतल जमीन नदी या पानी के स्रोत उपजाऊ जमीन बंजर जमीन
- इनमें से कौन सी सुविधाएँ आपके गांव/क्षेत्र में उपलब्ध हैं? (एक या ज्यादा टिक जैसे लागू हो)
 प्राथमिक स्कूल माध्यमिक स्कूल कॉलेज प्राथमिक स्वास्थ्य केन्द्र अस्पताल डाक घर बैंक
- गांव/क्षेत्र में लगभग कितने घरों में स्थाई वैध पहचान पत्र हैं (भतवाता पहचान पत्र/आधार कार्ड/राशन कार्ड/बैंक खाता)
— (एक टिक जैसे लागू हो) 20% से कम 20% - 50% 50% - 75% 100%
- आपके गांव/क्षेत्र से स्थानीय पीडीएस केन्द्र कितनी दूर है? (किमी)

सेक्शन 3: ईंधन चुनाव और उपयोग के बारे में जानकारी

- कृपया गांव/क्षेत्र के निवासियों के लिए ईंधन इस्तेमाल के चुनाव को प्रभावित करने वाले पहलुओं को सामान्यतः रैंक करें (कृपया 1 को सबसे महत्वपूर्ण और 5 को सबसे कम महत्वपूर्ण के क्रम में रैंक करें)
a) उपलब्धता में आसानी _____
b) इस्तेमाल में सुविधाजनक _____
c) ईंधन की कीमत _____
d) ईंधन इस्तेमाल करने में सुरक्षा _____
e) पर्यावरणीय कारणों के लिए साफ ईंधन _____
- इनमें से कौन से ईंधन क्षेत्र में आसानी से और किफायत में उपलब्ध हैं? (एक या ज्यादा टिक जो लागू हो)
 जैव ईंधन कोयला उपले जलावन लकड़ी केरोसीन एलपीजी

17. कृपया गांव/क्षेत्र के निवासियों के लिए ईंधन इस्तेमाल की सामान्य पसंद को रैंक करें (कृपया 1 है सबसे पसंदीदा और 6 है कम पसंदीदा के क्रम में रैंक करें)
- a) जैव ईंधन _____
 b) कोयला _____
 c) उपले _____
 d) जलावन लकड़ी _____
 e) केरोसीन _____
 f) एलपीजी _____

सेक्शन 4: एलपीजी इस्तेमाल के परिवर्तन और वर्तमान मसलों के बारे में विवरण

18. क्या आपके क्षेत्र में एलपीजी आसानी से उपलब्ध है? हां नहीं
- a. यदि हां, गांव/क्षेत्र में ज्यादातर लोग एलपीजी क्यों इस्तेमाल नहीं कर रहे हैं? (एक या ज्यादा टिक जो लागू हो)
 एलपीजी की कीमत एलपीजी इस्तेमाल करने में समुदाय की अनिच्छा
 शुरुआती खर्च एलपीजी कनेक्शन पाने की प्रक्रिया
- b. यदि नहीं, वे कौन सी मुख्य रुकावटें हैं जिन्होंने आपके गांव/क्षेत्र में एलपीजी के इस्तेमाल को सीमित कर दिया है? (एक या ज्यादा टिक जो लागू हो)
 क्षेत्र में कोई वितरक नहीं एलपीजी की कीमत
 रिफिल सिलिंडर पाने से पहले इंतजार का समय एलपीजी सिलिंडर का साइज
 एलपीजी कनेक्शन के लिए आवश्यक कागजातों की कमी एलपीजी लाने-ले जाने के लिए क्षेत्र में परेशानियां
 एलपीजी इस्तेमाल करने में समुदाय की अनिच्छा वर्तमान में इस्तेमाल ईंधन से संतुष्ट
 एलपीजी कनेक्शन पाने की प्रक्रिया अन्य, कृपया बताएं _____
19. आपके क्षेत्र में सिलिंडर की रिफिल पाने के लिए औसत इंतजार का समय (एलपीजी कनेक्शन मौजूद होने पर)? (एक टिक करें जो लागू हो) 3 दिनों से कम 4-7 दिन 8-15 दिन 15 दिनों से ज्यादा
20. यदि एलपीजी आपूर्ति/उपलब्धता से संबंधित समस्याओं का हल कर दें, तो अगले 1-3 सालों में आपके गांव/क्षेत्र में कितने घर/परिवारों की एलपीजी इस्तेमाल शुरू करने की उम्मीद है? (एक टिक जो लागू हो)
 5% से कम 5-25% 25-50% 50% से ज्यादा

सेक्शन 5: संभावित प्रचार/व्यापार मापक

21. कृपया बताएं आप अपने गांव/क्षेत्र में एलपीजी परिवर्तन को बेहतर करने के लिए सरकार/ओएमसी से कैसे सहयोग की उम्मीद करते हैं
- _____
- _____
- _____

22. क्या ग्राम पंचायत गांव/क्षेत्र में सरकार/ओएमसी की मदद से एलपीजी का प्रचार करने में इच्छुक है? हां नहीं यदि _____ नहीं, क्यों _____

23. क्या आप एलपीजी के प्रचार/इस्तेमाल के सरकारी पहल/स्कीम्स के बारे में जानते हैं? हां नहीं

24. क्या ग्राम पंचायत ओएमसी के लिए वितरण व्यवस्था लागू करने के लिए पडौस के गांव/क्षेत्रों की अन्य ग्राम पंचायत के साथ गठजोड़ करने में इच्छुक है? हां नहीं

25. क्या ग्राम पंचायत सामुदायिक रसोई का प्रचार करने में इच्छुक है यदि अधिकारियों द्वारा ऐसी पहल लागू की जाती है? हां नहीं

26. कृपया सुझाव प्रदान करें जो गांव/क्षेत्र में एलपीजी इस्तेमाल/पहुंचाने में मदद कर सकते हैं
- _____
- _____
- _____

*****माग लेने के लिए आपका धन्यवाद*****

(for internal purposes)

सर्वेक्षणकर्ता का नाम _____ एंट्री की मारीख _____
 जांचकर्ता का नाम _____ अंतिम जांच द्वारा _____

सर्वेक्षणकर्ता के लिए पाठ्य योग्य निर्देश

- सर्वेक्षणकर्ता को सुनिश्चित करना होगा कि उनकी गतिविधि में आम लोग एथिकल सहायता पर आधारित हैं।
- सर्वेक्षणकर्ता अपने सभी पेशेवर और निजी/व्यापारिक संबंधों में स्पष्ट और ईमानदार होंगे।
- सर्वेक्षणकर्ता व्यक्ति और डाटा एकत्रीकरण के प्रति पारदर्शी/ईमानदार होंगे।
- सर्वेक्षणकर्ता अपनी पेशेवर गतिविधियों में एकज की गई जानकारी की गोपनीयता का सम्मान करेंगे।
- सर्वेक्षणकर्ता सभी व्यक्तियों के अधिकारों और मर्यादों का सम्मान करेंगे।
- सर्वेक्षणकर्ता सुनिश्चित करेंगे कि उत्तरदाता को उनकी पेशेवर गतिविधियों के कारण कुछ हानि या गंभीर दुष्प्रभाव न हों।
- सर्वेक्षणकर्ता व्यक्तियों, क्लाइंट्स की जरूरतों और उनकी पेशेवर गतिविधियों के बीच संतुलन बनायेंगे।
- सर्वेक्षणकर्ता अपनी पेशेवर गतिविधियों के डिजाइन, चले करने और रिपोर्ट के लिए स्वतंत्र पेशेवर निर्णय लेगा।
- सर्वेक्षणकर्ता सुनिश्चित करेंगे कि उनकी पेशेवर गतिविधियों को उपयुक्त प्रशिक्षण, योग्यताओं और अनुभव के साथ की जाये।
- सर्वेक्षणकर्ता पेशे/व्यवसाय की प्रतिष्ठा और भविष्यता की रक्षा करेंगे।

- a. Ease in availability _____
- b. Convenience in usage _____
- c. Price of Fuel _____
- d. Safety of using the fuel _____
- e. Clean fuel for environmental reasons _____

16. Which of the fuels are easily and economically available in the area? (Tick one or more as applicable)

- ① Bio Mass ② Coal ③ Dung ④ Firewood ⑤ Kerosene ⑥ LPG

17. Please rank preference of fuel usage for the residents of Village(s) /Area in general (Please rank in order 1 being most preferred and 6 being least preferred)

- a. Bio Mass _____
- b. Coal _____
- c. Dung _____
- d. Firewood _____
- e. Kerosene _____
- f. LPG _____

Section 4: Details about conversion and current issues in LPG usage

18. Is LPG readily available in the area? ① Yes ② No

a. **If YES, why are most people in Village(s)/Area not using LPG in the area? (Tick one or multiple as applicable)**

- ① Price of LPG ③ Unwillingness of community to shift to LPG
- ② Initial Cost ④ Process of getting LPG connection

b. **If NO, What are the main constraints that have limited the use of LPG in your Village(s)/Area? (Tick one or multiple as applicable)**

- ① No distributors in the region ⑥ Price of LPG
- ② Time to wait before getting refill cylinder ⑦ Size of LPG cylinder
- ③ Lack of documents required for LPG connection ⑧ Logistically difficult to terrain for LPG procurement
- ④ Unwillingness of community to shift to LPG ⑨ Satisfied with the current fuel used
- ⑤ Process of getting LPG connection ⑩ Others, Please Specify _____

19. What is the average waiting time for getting a refill of the cylinder (in case of an existing LPG connection) in your area? (Tick one as applicable)

- ① Less than 3 days ② 4 – 7 days ③ 8- 15 days ④ More than 15 days

20. If issues related to supply/availability of LPG are resolved, how many households in your Village(s)/Area can be expected to convert to LPG in next 1-3 years? (Tick one as applicable)

- ① Less than 5% ② 5-25% ③ 25-50% ④ More than 50%

Section 5: Expected promotion / marketing measures

21. Please explain support you expect from government/OMCs to improve conversion to LPG in your Village(s)/Area

22. Is the gram panchayat willing to promote LPG along with the help of government/ OMCs in the Village(s)s /Area? ① Yes ② No **If No, why** _____

23. Are you aware of government initiatives/ schemes to promote/ usage of LPG? ① Yes ② No

24. Is the gram panchayat willing to tie up with other gram panchayat's in neighboring Village(s)s /areas to implement a distribution model for OMCs? ① Yes ② No

25. Is the gram panchayat willing to promote community kitchens if such an initiative is launched by the authorities? ① Yes ② No

26. Please provide suggestions that can help LPG access in the Village(s) /area

*****Thank you for participation *****

(for internal purposes)

Surveyor Name _____

Date of entry _____

Checker Name _____

Final Sign off by _____

Annexure 6: Age distribution of surveyed population

State	18-21 years	22-35 years	36-50 years	More than 50 years
Assam	3%	44%	42%	12%
Bihar	5%	43%	37%	16%
Chhattisgarh	2%	38%	41%	19%
Gujarat	1%	37%	46%	15%
Jharkhand	2%	42%	40%	16%
Madhya Pradesh	3%	41%	40%	17%
Meghalaya	3%	35%	42%	21%
Nagaland	3%	27%	40%	30%
Odisha	2%	32%	45%	21%
Rajasthan	3%	46%	35%	16%
Tripura	2%	37%	53%	9%
Uttar Pradesh	3%	38%	40%	18%
West Bengal	2%	42%	42%	14%
All 13 states	3%	40%	40%	17%

Annexure 7: Occupation distribution of surveyed population

State	Farmer	Farm Labourer	Other Labourer	Shopkeeper	Service	Business	Unemployed
Assam	43%	18%	58%	8%	1%	12%	5%
Bihar	27%	40%	58%	2%	2%	2%	25%
Chhattisgarh	37%	51%	44%	2%	1%	1%	1%
Gujarat	25%	28%	46%	3%	5%	2%	2%
Jharkhand	37%	45%	59%	4%	2%	5%	33%
Madhya Pradesh	30%	55%	59%	3%	2%	2%	5%
Meghalaya	55%	22%	31%	8%	6%	8%	7%
Nagaland	81%	18%	17%	5%	10%	14%	17%
Odisha	34%	21%	30%	2%	2%	5%	10%
Rajasthan	33%	25%	49%	3%	2%	2%	28%
Tripura	17%	11%	62%	2%	1%	5%	3%
Uttar Pradesh	31%	19%	59%	3%	4%	4%	12%
West Bengal	44%	47%	46%	7%	5%	7%	2%
All 13 States	35%	33%	51%	4%	3%	4%	13%

Annexure 8: Education distribution of surveyed population

	5th Class or below	6th - 10th Class	11th - 12th Class	Graduate	Post Graduate
Assam	46.0%	43.8%	8.8%	1.2%	0.2%
Bihar	60.1%	28.9%	7.2%	3.5%	0.3%
Chhattisgarh	61.5%	33.6%	3.5%	1.0%	0.4%

	5th Class or below	6th - 10th Class	11th - 12th Class	Graduate	Post Graduate
Gujarat	46.2%	41.5%	10.0%	1.7%	0.6%
Jharkhand	53.6%	37.6%	5.7%	2.8%	0.3%
Madhya Pradesh	65.4%	27.9%	4.7%	1.6%	0.4%
Meghalaya	48.9%	37.8%	10.0%	2.7%	0.6%
Nagaland	55.2%	35.8%	5.8%	2.6%	0.6%
Odisha	62.0%	31.6%	4.9%	1.2%	0.3%
Rajasthan	54.8%	34.2%	5.7%	4.0%	1.3%
Tripura	47.9%	49.2%	2.3%	0.5%	0.1%
Uttar Pradesh	60.1%	31.5%	5.2%	2.5%	0.7%
West Bengal	51.8%	42.5%	4.2%	1.3%	0.2%
All 13 states	57.1%	34.3%	5.9%	2.2%	0.5%

Annexure 9: State-wise average size of household – distribution (average)

State	Adult Male	Adult Female	Child Male	Child Female
Assam	1.7	1.5	1.0	0.9
Bihar	1.4	1.3	1.5	1.3
Chhattisgarh	1.5	1.4	1.0	1.0
Gujarat	1.6	1.5	1.3	1.1
Jharkhand	1.5	1.4	1.2	1.1
Madhya Pradesh	1.6	1.4	1.2	1.2
Meghalaya	1.7	1.7	1.4	1.3
Nagaland	1.6	1.6	1.2	0.9
Odisha	1.5	1.4	0.8	0.8
Rajasthan	1.3	1.2	1.4	1.1
Tripura	1.4	1.4	0.7	0.7
Uttar Pradesh	1.7	1.5	1.4	1.2
West Bengal	1.6	1.5	0.9	0.9
All 13 states	1.6	1.4	1.2	1.1

Annexure 10: State-wise type of house distribution

State	Pucca	Semi Pucca	Kuccha
Assam	5%	18%	77%
Bihar	14%	30%	56%
Chhattisgarh	7%	28%	65%
Gujarat	8%	29%	62%
Jharkhand	7%	15%	78%
Madhya Pradesh	6%	24%	70%
Meghalaya	6%	67%	27%
Nagaland	4%	48%	48%
Odisha	12%	29%	59%



State	Pucca	Semi Pucca	Kuccha
Rajasthan	7%	31%	63%
Tripura	1%	53%	46%
Uttar Pradesh	20%	36%	44%
West Bengal	6%	38%	56%
All 13 States	10%	31%	59%

Annexure 11: State-wise distribution of facilities

State	Water Supply	Electricity	Internet	Mobile Phone connection
Assam	67%	77%	0%	76%
Bihar	52%	69%	0%	89%
Chhattisgarh	79%	97%	0%	72%
Gujarat	50%	96%	0%	73%
Jharkhand	46%	84%	1%	92%
Madhya Pradesh	85%	88%	0%	83%
Meghalaya	14%	96%	0%	62%
Nagaland	18%	98%	0%	61%
Odisha	8%	71%	0%	66%
Rajasthan	22%	96%	0%	99%
Tripura	44%	97%	1%	69%
Uttar Pradesh	39%	57%	0%	94%
West Bengal	7%	96%	1%	91%
All 13 States	45%	80%	0.4%	84%

Annexure 12: State-wise distribution of monthly income

State	Below Rs 2250	Rs 2250-5000	Rs 5000-10000	Rs 10000-25000	More than 25000
Assam	18.2%	62.7%	8.6%	9.8%	0.7%
Bihar	15.8%	60.0%	23.3%	0.7%	0.2%
Chhattisgarh	51.9%	42.9%	4.8%	0.3%	0.1%
Gujarat	32.0%	53.2%	13.1%	1.0%	0.7%
Jharkhand	22.7%	58.7%	17.9%	0.5%	0.2%
Madhya Pradesh	36.7%	54.3%	7.7%	1.2%	0.1%
Meghalaya	6.2%	43.2%	42.2%	8.0%	0.4%
Nagaland	38.6%	40.0%	16.0%	4.7%	0.7%
Odisha	33.8%	44.1%	20.2%	1.7%	0.2%
Rajasthan	25.4%	59.6%	13.6%	1.3%	0.1%
Tripura	3.0%	57.3%	39.1%	0.6%	0.0%

State	Below Rs 2250	Rs 2250-5000	Rs 5000-10000	Rs 10000-25000	More than 25000
Uttar Pradesh	34.1%	55.1%	10.1%	0.6%	0.1%
West Bengal	10.3%	63.2%	24.2%	2.1%	0.2%
All 13 states	28.0%	54.8%	15.2%	1.8%	0.2%

Annexure 13: State wise distribution of assets

State	Television	2 Wheeler	4 wheeler
Assam	21%	3%	0%
Bihar	10%	1%	0%
Chhattisgarh	38%	4%	0%
Gujarat	10%	5%	4%
Jharkhand	8%	2%	0%
Madhya Pradesh	19%	4%	0%
Meghalaya	34%	2%	3%
Nagaland	14%	1%	0%
Odisha	31%	9%	0%
Rajasthan	9%	6%	0%
Tripura	59%	1%	0%
Uttar Pradesh	8%	2%	0%
West Bengal	39%	6%	0%
All 13 States	18%	4%	0.40%

Annexure 14: State-wise distribution of availability of KYC (know your customer) documents

State	Bank Account	Aadhar Card	Ration Card	Driving Licence	Voter ID Card
Assam	81%	1%	67%	3%	98%
Bihar	82%	87%	82%	3%	93%
Chhattisgarh	90%	98%	96%	2%	96%
Gujarat	86%	97%	97%	4%	99%
Jharkhand	92%	97%	73%	3%	98%
Madhya Pradesh	89%	95%	91%	4%	98%
Meghalaya	88%	1%	31%	2%	99%
Nagaland	42%	78%	2%	1%	93%
Odisha	83%	89%	54%	5%	96%
Rajasthan	96%	97%	98%	6%	99%
Tripura	97%	99%	99%	2%	100%
Uttar Pradesh	89%	84%	76%	3%	96%
West Bengal	92%	91%	96%	4%	96%
All 13 States	86%	83%	79%	4%	96%

Annexure 15: State-wise distribution of fuel usage

State	Firewood	Biomass (Crop residue)	Cow dung cake / Upla	Kerosene	Coal / Charcoal
Assam	100%	8%	10%	98%	0.2%
Bihar	78%	52%	91%	94%	1%
Chhattisgarh	100%	14%	60%	94%	1%
Gujarat	99%	28%	39%	88%	0%
Jharkhand	97%	24%	46%	98%	24%
Madhya Pradesh	99%	21%	92%	92%	1%
Meghalaya	100%	1%	8%	39%	9%
Nagaland	100%	0%	3%	24%	1%
Odisha	100%	18%	22%	95%	1%
Rajasthan	98%	54%	61%	61%	0.1%
Tripura	99%	63%	0.1%	100%	0%
Uttar Pradesh	91%	69%	88%	90%	1%
West Bengal	98%	80%	70%	89%	6%
All 13 States	95%	39%	61%	87%	3%

Annexure 15A: State wise-distribution of fuel used for cooking

State	Firewood	Biomass (Crop residue)	Cow dung cake / Upla	Kerosene	Coal / Charcoal
Assam	100%	7%	9%	70%	0.1%
Bihar	77%	51%	90%	67%	1%
Chhattisgarh	100%	14%	59%	48%	0.4%
Gujarat	99%	24%	38%	81%	0%
Jharkhand	97%	15%	46%	94%	23%
Madhya Pradesh	99%	20%	90%	83%	1%
Meghalaya	100%	1%	8%	5%	9%
Nagaland	100%	0%	3%	23%	1%
Odisha	100%	15%	21%	91%	1%
Rajasthan	98%	44%	61%	59%	0.1%
Tripura	99%	63%	0.10%	95%	0%
Uttar Pradesh	91%	57%	87%	70%	0.3%
West Bengal	97%	63%	60%	52%	4%
All 13 States	94%	33%	60%	69%	3%

Annexure 16: State-wise distribution of monthly fuel usage (units/month)

State	Firewood (kgs)	Biomass (kgs)	Cow dung (kgs)	Kerosene (Its)	Coal (kgs)
Assam	136	68	66	4	23
Bihar	113	81	108	3	38
Chhattisgarh	118	76	87	3	15
Gujarat	142	76	77	5	0
Jharkhand	150	93	132	4	29
Madhya Pradesh	106	58	82	3	18
Meghalaya	132	33	76	3	6
Nagaland	170	0	89	4	17
Odisha	132	84	61	3	8
Rajasthan	112	90	119	3	0
Tripura	117	98	20	3	0
Uttar Pradesh	102	73	95	3	9
West Bengal	109	125	109	2	24
All 13 States	121	83	98	3	26

Annexure 17: State-wise monthly spending on various fuels (in Rs/month)

State	Amount spent on firewood (Rs.)	Amount spent on biomass (Rs.)	Amount spent on cow dung (Rs.)	Amount spent on kerosene (Rs.)	Amount spent on coal (Rs.)
Assam	368	127	113	105	163
Bihar	328	168	126	60	325
Chhattisgarh	344	77	101	52	123
Gujarat	382	121	100	115	0
Jharkhand	337	118	125	92	224
Madhya Pradesh	309	179	137	66	145
Meghalaya	389	0	91	73	137
Nagaland	508	0	73	99	169
Odisha	371	100	84	70	83
Rajasthan	367	113	137	59	0
Tripura	421	144	0	78	0
Uttar Pradesh	276	144	120	60	102
West Bengal	334	114	108	45	185
All 13 States	343	121	118	72	208

Annexure 17A: State-wise segregation between free and paid fuels (in %)

State	Firewood		Biomass		Cow dung		All 3 fuels	
	Free	Paid	Free	Paid	Free	Paid	Free	Paid
Assam	19.2	80.8	95.9	4.1	98.3	1.7	19.1	80.9
Bihar	18.1	81.9	90.6	9.4	70.2	29.8	28.8	71.2
Chhattisgarh	13.5	86.5	91	9	53.8	46.2	11.3	88.7
Gujarat	69.2	30.8	98.8	1.2	90.8	9.2	66.9	33.1
Jharkhand	48.7	51.3	96.7	3.3	87.8	12.2	46.7	53.3
Madhya Pradesh	50.1	49.9	94.8	5.2	77.9	22.1	43.1	56.9
Meghalaya	6.1	93.9	100	0	95.3	4.7	6.0	94
Nagaland	47.3	52.7	NA	NA	97.9	2.1	47.3	52.7
Odisha	26.3	73.7	48.7	51.3	55.8	44.2	26.1	73.9
Rajasthan	32.5	67.5	97.7	2.3	84.2	15.8	31.3	68.7
Tripura	1.6	98.4	96.0	4.0	100	0.0	1.7	98.3
Uttar Pradesh	47.8	52.2	99.1	0.9	89.9	10.1	49.9	50.1
West Bengal	22.4	77.6	45.8	54.2	44.2	55.8	12.8	87.2
All 13 States	34.9	65.1	87.5	12.5	76.3	23.7	34.5	65.5

Annexure 17B: State-wise monthly spending on cooking fuels (rural and urban) (in Rs/month)

State	Area	Amount Spent on 3 Primary fuels (Firewood, Biomass and Dung (Rs)- (N=67437)	Amount Spent on 3 Primary fuels with Kerosene (Rs) (N=93368)	Amount Spent on 3 Primary fuels with Kerosene and Coal/Charcoal (Rs) (N=93477)
Assam	Rural	373	395	395
	Urban	350	411	411
	Total	368	399	399
Bihar	Rural	357	302	303
	Urban	336	318	323
	Total	353	305	307
Chhattisgarh	Rural	364	368	368
	Urban	387	411	412
	Total	368	374	375
Gujarat	Rural	347	212	212
	Urban	406	327	327
	Total	366	236	236
Jharkhand	Rural	342	263	299

State	Area	Amount Spent on 3 Primary fuels (Firewood, Biomass and Dung (Rs)- (N=67437)	Amount Spent on 3 Primary fuels with Kerosene (Rs) (N=93368)	Amount Spent on 3 Primary fuels with Kerosene and Coal/Charcoal (Rs) (N=93477)
	Urban	304	287	394
	Total	332	268	320
Madhya Pradesh	Rural	316	237	237
	Urban	338	324	325
	Total	321	251	251
Meghalaya	Rural	371	373	381
	Urban	486	487	491
	Total	389	391	398
Nagaland	Rural	509	459	453
	Urban	505	488	490
	Total	508	462	462
Odisha	Rural	379	329	329
	Urban	435	467	467
	Total	394	360	360
Rajasthan	Rural	365	316	316
	Urban	415	401	401
	Total	376	333	333
Tripura	Rural	422	483	483
	Urban	420	497	497
	Total	422	485	485
Uttar Pradesh	Rural	276	222	222
	Urban	317	281	280
	Total	285	233	233
West Bengal	Rural	394	367	373
	Urban	418	420	441
	Total	398	374	382
All 13 states	Rural	354	301	305
	Urban	372	360	372
	Total	358	312	318

Annexure 18: District-wise spending on cooking fuel (in Rs/month)

State	District	Amount spent on firewood (Rs.)	Amount spent on biomass (Rs.)	Amount spent on dung (Rs.)	Amount spent on 3 fuels
Assam	Dhemaji	321	129	122	323

State	District	Amount spent on firewood (Rs.)	Amount spent on biomass (Rs.)	Amount spent on dung (Rs.)	Amount spent on 3 fuels
	Dhubri	498	.	110	498
	Golaghat	352	43	205	351
	Hailakandi	556	.	.	556
	Karbi Anglong	224	235	.	225
	Nagaon	380	.	.	380
	Sonitpur	335	.	.	335
	Chirang	307	.	40	307
	Baksa	260	.	40	259
Average amount spent (Rs)		368	127	113	368
Bihar	Araria	229	.	113	269
	Aurangabad	205	92	186	253
	Banka	362	122	132	260
	Begusarai	327	219	134	410
	Gaya	215	117	178	246
	Jamui	312	110	140	254
	Kaimur (Bhabua)	268	158	231	326
	Katihar	290	298	173	295
	Madhubani	371	61	59	394
	Muzaffarpur	419	105	205	421
	Nalanda	282	104	159	268
	Purbi Champaran	468	150	66	479
	Saran	270	134	145	244
	Sitamarhi	380	157	76	410
	Supaul	283	.	111	360
Average amount spent (Rs)		328	168	126	353
Chhattisgarh	Bastar	309	.	84	309
	Bilaspur	402	.	99	440
	Dantewada	420	150	.	420
	Durg	329	.	74	360
	Kabirdham	368	63	148	429
	Mahasamund	360	65	98	378
	Raigarh	329	.	132	361
	Raipur	349	90	74	383
	Surguja	252	.	61	252
Average amount spent (Rs)		344	77	101	368
Gujarat	Banaskantha	369	110	120	367
	Dohad	397	200	122	415

State	District	Amount spent on firewood (Rs.)	Amount spent on biomass (Rs.)	Amount spent on dung (Rs.)	Amount spent on 3 fuels
	Kheda	327	50	137	327
	Narmada	415	.	88	158
	Panchmahal	443	.	94	438
	Sabarkantha	378	108	126	385
	Surendranagar	337	350	100	331
Average amount spent (Rs)		382	121	100	366
Jharkhand	Bokaro	343	200	163	302
	Chatra	403	100	155	403
	Deoghar	358	116	113	356
	Garhwa	354	38	88	353
	Latehar	331	50	99	335
	Pakur	242	150	88	233
	Seraikela Kharsawan	328	276	176	334
	Simdega	474	30	60	473
	West Singhbhum	325	.	215	323
	Khunti	211	90	73	211
Average amount spent (Rs)		337	118	125	332
Madhya Pradesh	Ashoknagar	359	375	251	399
	Betul	302	50	111	288
	Damoh	338	207	201	362
	Dindori	267	20	107	275
	East Nimar	275	113	92	301
	Jhabua	323	116	115	261
	Panna	270	18	50	226
	Raisen	274	82	100	304
	Rewa	436	.	50	437
	Seoni	337	300	151	334
	Shajapur	336	.	110	362
	Sheopur	395	462	88	407
	Umaria	302	.	125	305
	Singrauli	215	20	105	285
Average amount spent (Rs)		309	179	137	321
Meghalaya	West Jaintia Hills	349	.	130	349
	West Garo Hills	401	.	.	401
	West Khasi Hills	415	.	72	415
Average amount spent (Rs)		389		91	389
Nagaland	Mon	369	.	100	368

State	District	Amount spent on firewood (Rs.)	Amount spent on biomass (Rs.)	Amount spent on dung (Rs.)	Amount spent on 3 fuels
	Wokha	381	.	45	382
	Kiphire	774	.	.	774
	Peren	386	.	.	386
	Average amount spent (Rs)	508		73	508
Odisha	Baleshwar	366	100	95	485
	Bargarh	284	.	59	291
	Gajapati	372	.	50	372
	Kalahandi	496	.	90	496
	Malkangiri	421	25	43	413
	Mayurbhanj	423	53	70	393
	Puri	460	121	64	466
	Sonepur	220	30	43	224
	Sundargarh	410	.	67	410
Average amount spent (Rs)	371	100	84	394	
Rajasthan	Banswara	444	.	154	461
	Baran	402	386	320	415
	Barmer	453	.	.	453
	Dausa	273	66	43	283
	Dholpur	328	134	118	315
	Dungarpur	465	.	133	468
	Karauli	397	139	172	407
	Rajsamand	415	.	128	421
	Tonk	243	76	43	255
Average amount spent (Rs)	367	113	137	376	
Tripura	South Tripura	494	100	.	495
	West Tripura	345	145	.	348
Average amount spent (Rs)	421	144		422	
Uttar Pradesh	Ambedkar Nagar	256	.	101	267
	Azamgarh	220	.	96	241
	Bahraich	380	.	121	305
	Balrampur	353	50	109	310
	Banda	263	153	107	259
	Badaun	305	259	122	309
	Chitrakoot	271	66	94	259
	Fatehpur	274	132	101	265
	Ghazipur	185	63	91	185
Hardoi	292	50	81	295	

State	District	Amount spent on firewood (Rs.)	Amount spent on biomass (Rs.)	Amount spent on dung (Rs.)	Amount spent on 3 fuels	
	Jaunpur	253	100	93	254	
	Kannauj	369	168	74	361	
	Kheri	301	150	150	302	
	Lalitpur	400	.	230	428	
	Maharajganj	373	230	146	361	
	Mirzapur	235	183	99	253	
	Muzaffarnagar	349	100	158	381	
	Rampur	308	127	256	329	
	Sant Kabeer Nagar	252	50	98	266	
	Sonbhadra	236	.	102	243	
	Sultanpur	237	33	97	248	
	Kasganj (Kanshi Ram Nagar)	447	.	124	463	
	Average amount spent (Rs)		276	144	120	285
	West Bengal	24 Parganas South	357	127	109	495
Cooch Behar		382	48	99	333	
Jalpaiguri		414	89	104	415	
Medinipur East		258	208	128	433	
Medinipur West		352	77	121	419	
Murshidabad		129	65	98	123	
Purulia		315	102	102	407	
Average amount spent (Rs)		334	114	108	398	
All 13 States		343	121	118	358	

Amount spent on three fuels are as follows:

Firewood = (Total amount spent on firewood/ households buying firewood as cooking fuel)

Biomass = (Total amount spent on biomass/ households buying biomass as cooking fuel)

Cow Dung = (Total amount spent on cow dung/ households buying cow dung as cooking fuel)

Amount spent on three fuels= (Total amount spent on firewood, biomass and cow dung/ households buying at least one of the three fuels)

Annexure 19: State-wise LPG awareness

State	Total	Rural	Urban	Women
Assam	99.3%	99.3%	99.2%	98.8%
Bihar	91.1%	89.9%	96.5%	87.5%
Chhattisgarh	95.6%	95.8%	94.8%	89.6%
Gujarat	85.4%	84.1%	90.0%	88.2%
Jharkhand	87.8%	87.5%	89.1%	80.0%

State	Total	Rural	Urban	Women
Madhya Pradesh	98.0%	98.2%	97.4%	98.7%
Meghalaya	99.3%	99.1%	100.0%	99.4%
Nagaland	97.8%	97.6%	98.8%	97.9%
Odisha	85.3%	83.6%	91.0%	91.0%
Rajasthan	83.3%	81.0%	92.8%	89.8%
Tripura	99.7%	99.9%	98.5%	100.0%
Uttar Pradesh	94.5%	94.9%	92.6%	90.9%
West Bengal	98.7%	98.7%	98.3%	99.5%
All 13 States	92.9%	92.6%	94.4%	93.3%

Annexure 20:-Percentage of surveyed households citing high initial cost as a barrier

State	Total	Rural	Urban	Women
Assam	84.5%	83.8%	87.1%	86.9%
Bihar	89.9%	90.2%	88.4%	92.1%
Chhattisgarh	86.6%	87.1%	83.2%	90.3%
Gujarat	87.8%	88.2%	86.0%	81.5%
Jharkhand	89.4%	89.1%	90.2%	86.8%
Madhya Pradesh	69.1%	68.6%	71.7%	69.4%
Meghalaya	80.1%	77.9%	90.3%	88.9%
Nagaland	85.0%	83.4%	91.7%	93.4%
Odisha	84.2%	82.4%	90.6%	79.1%
Rajasthan	97.7%	97.7%	97.7%	96.9%
Tripura	67.7%	68.8%	62.1%	47.9%
Uttar Pradesh	90.9%	91.0%	90.3%	90.8%
West Bengal	86.8%	86.5%	88.6%	92.2%
All 13 States	86.3%	86.0%	87.5%	87.1%

Annexure 21: Percentage of surveyed households citing high recurring cost as barrier

State	Total	Rural	Urban	Women
Assam	86.0%	84.5%	91.2%	87.3%
Bihar	83.4%	83.9%	81.3%	83.6%
Chhattisgarh	83.2%	83.0%	84.8%	90.0%
Gujarat	73.9%	76.3%	64.9%	72.9%
Jharkhand	85.4%	84.9%	87.4%	86.1%
Madhya Pradesh	59.3%	59.2%	59.5%	51.6%
Meghalaya	94.9%	94.7%	96.1%	93.5%
Nagaland	86.8%	85.4%	92.9%	95.3%
Odisha	83.2%	85.4%	75.7%	78.8%
Rajasthan	87.3%	87.0%	88.5%	87.6%

State	Total	Rural	Urban	Women
Tripura	70.8%	72.6%	62.1%	58.6%
Uttar Pradesh	94.2%	94.6%	92.5%	91.8%
West Bengal	88.8%	89.6%	84.3%	87.7%
All 13 States	83.4%	83.7%	82.4%	84.2%

Annexure 22: State-wise percentage of surveyed households citing long waiting time for new LPG connection as barrier

State	Total	Rural	Urban	Women
Assam	70.8%	70.1%	73.1%	76.8%
Bihar	77.7%	79.1%	71.9%	85.5%
Chhattisgarh	29.7%	30.3%	25.4%	21.1%
Gujarat	73.3%	74.4%	69.4%	56.1%
Jharkhand	64.4%	63.3%	67.9%	68.5%
Madhya Pradesh	29.8%	30.4%	26.6%	19.6%
Meghalaya	80.7%	81.0%	78.9%	76.3%
Nagaland	97.5%	97.7%	96.6%	97.5%
Odisha	57.8%	57.6%	58.3%	59.7%
Rajasthan	71.9%	70.9%	76.2%	59.5%
Tripura	79.2%	79.6%	77.0%	81.4%
Uttar Pradesh	66.8%	68.6%	58.2%	64.6%
West Bengal	67.0%	70.3%	48.8%	62.0%
All 13 States	63.3%	63.7%	61.3%	61.5%

Annexure 23: State-wise segregation of distribution centre distance

State	0-5 km	6-10 km	10-15 km	No centre exists	Don't know
Assam	48.3%	27.2%	16.8%	3.6%	4.1%
Bihar	56.2%	32.2%	8.7%	2.0%	0.9%
Chhattisgarh	42.8%	26.2%	29.7%	1.0%	0.3%
Gujarat	22.8%	26.1%	19.2%	19.9%	12.0%
Jharkhand	64.0%	25.8%	9.2%	0.4%	0.6%
Madhya Pradesh	35.3%	34.2%	28.1%	1.7%	0.7%
Meghalaya	31.8%	25.9%	7.8%	0.6%	33.9%
Nagaland	21.2%	11.5%	12.3%	46.6%	8.4%
Odisha	29.4%	17.9%	18.9%	15.4%	18.4%
Rajasthan	42.6%	31.1%	24.9%	1.4%	0.0%
Tripura	10.7%	19.4%	24.7%	43.1%	2.1%
Uttar Pradesh	56.4%	29.3%	8.4%	0.7%	5.2%
West Bengal	49.3%	25.5%	7.6%	11.9%	5.7%
All 13 States	45.2%	27.6%	15.8%	6.3%	5.1%

Annexure 24: State-wise percentage of surveyed households citing long waiting time for LPG refill as barrier

State	Total	Rural	Urban	Women
Assam	69.5%	69.5%	69.1%	75.5%
Bihar	78.4%	78.1%	79.9%	83.8%
Chhattisgarh	46.1%	46.8%	41.5%	35.4%
Gujarat	42.1%	40.9%	46.7%	42.9%
Jharkhand	65.1%	68.0%	55.3%	63.4%
Madhya Pradesh	29.8%	30.2%	27.6%	16.2%
Meghalaya	86.2%	87.5%	79.9%	82.9%
Nagaland	86.5%	85.2%	92.3%	95.2%
Odisha	48.9%	50.7%	42.7%	47.4%
Rajasthan	39.5%	39.3%	40.0%	41.4%
Tripura	54.1%	53.3%	58.2%	47.9%
Uttar Pradesh	77.2%	79.9%	64.3%	70.9%
West Bengal	69.2%	72.0%	54.2%	66.3%
All 13 States	61.2%	62.2%	57.2%	61.6%

Annexure 25: Ranking of factors driving choice of fuel (gram panchayat) (1st being highest)

Factors	AS (N=35)	BHR (N=99)	CHG (N=90)	GUJ (N=91)	JHK (N=51)	MP (N=232)	MG (N=68)	NAG (N=31)	ODI (N=59)	RAJ (N=97)	TRIP (N=12)	UP (N=517)	WB (N=36)
Price of Fuel	1	3	1	1	1	1	1	1	1	1	2	1	1
Convenience in usage	3	2	2	3	2	2	3	4	3	2	4	2	3
Ease in availability	2	1	3	2	3	3	2	3	2	3	3	4	2
Safety of using the fuel	4	4	4	4	4	4	4	2	4	5	1	3	4
Clean fuel for environmental reasons	5	5	5	5	5	5	5	5	5	4	5	5	5

The Sarpanch was asked to provide his preference ranking from 1 to 5 on the drivers for fuel choice – 1) Ease of Availability, 2) Ease of Usage, 3) Price of Fuel, 4) Safety in Using the fuel and 5) Clean fuel for environmental reasons

In order to capture the relative importance of the factors, a predisposed list of factors was given to the Sarpanch (the aided response) and was then asked to rate the preferences on a ranking of 1 to 5, based on how much consideration each factor was given for the choice of fuel.

1= most important factor and 5= Least Important.

Mean scores for each attribute was calculated for each factor to arrive at the overall ranking

Annexure 26: Preference of cooking fuel (Gram panchayat) (1st being highest)

Fuel	AS (N=35)	BHR (N=99)	CHG (N=90)	GUJ (N=91)	JHK (N=51)	MP (N=232)	MG (N=68)	NAG (N=31)	ODI (N=59)	RAJ (N=97)	TRIP (N=12)	UP (N=517)	WB (N=36)
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Fuel	AS (N=35)	BHR (N=99)	CHG (N=90)	GUJ (N=91)	JHK (N=51)	MP (N=232)	MG (N=68)	NAG (N=31)	ODI (N=59)	RAJ (N=97)	TRIP (N=12)	UP (N=517)	WB (N=36)
Firewood	1	2	1	1	1	1	1	1	1	1	1	1	1
Dung	4	1	2	4	2	2	5	5	3	3	5	2	3
Kerosene	2	5	3	2	4	3	2	2	2	4	2	3	4
Biomass	5	3	4	3	5	4	6	4	5	2	3	5	2
LPG	3	4	6	5	6	6	3	6	4	5	4	4	5
Coal	6	6	5	6	3	5	3	3	6	6	6	6	6

The Sarpanch was asked to provide his opinion about the cooking fuels preferred to be used by the households in his GP area.

A ranking of the six fuels – firewood, dung, coal, biomass, kerosene and LPG was obtained from 1 to 6 where 1=Most preferred and 6 = Least preferred.

The Sarpanch was asked to provide his opinion about the preference of the cooking fuels used by the households in his GP area. Sarpanch was given a list of Fuels (the aided response); and then asked to rate the preferences on a ranking of 1 to 6, based on how much each fuel was preferred.

1= most preferred and 6= Least preferred.

Mean scores for each attribute was calculated for each factor to arrive at the overall ranking

Annexure 27: Constraints limiting the usage of LPG in % (gram panchayat) (Total=1418)

Factor	ALL surveyed	AS N=35	BHR N=99	CHG N=90	GUJ N=91	JHK N=51	MP N=232	MG N=68	NAG N=31	ODI N=59	RAJ N=97	TRIP N=12	UP N=517	WB N=36
Price of LPG	48	54	71	40	69	61	52	47	74	59	63	67	31	58
No distributors in the region	32	57	37	16	45	31	22	62	94	61	27	83	21	39
Logistically difficult to terrain for LPG procurement	20	-	37	9	51	16	22	7	-	8	54	-	11	28
Process of getting LPG connection	19	37	31	20	23	22	9	31	52	39	35	42	8	31
Time to wait before getting refill cylinder	17	46	38	18	2	27	12	4	35	22	33	-	11	28
Satisfied with the current fuel used	16	6	13	9	20	20	22	44	3	3	12	8	11	39
Unwillingness of community to shift to LPG	13	11	2	6	4	14	13	40	3	10	7	-	17	11



Factor	ALL surveyed	AS N=35	BHR N=99	CHG N=90	GUJ N=91	JHK N=51	MP N=232	MG N=68	NAG N=31	ODI N=59	RAJ N=97	TRIP N=12	UP N=517	WB N=36
Size of LPG cylinder	5	3	19	8	3	10	3	1	3	10	9	-	1	8

Annexure 28: Average waiting time to get LPG refill (figures is percentage) - gram panchayat

Average waiting time	ALL surveyed	AS (N=35)	BHR (N=99)	CHG (N=90)	GUJ (N=91)	JHK (N=51)	MP (N=232)	MG (N=68)	NAG (N=31)	ODI (N=59)	RAJ (N=97)	TRIP (N=12)	UP (N=517)	WB (N=36)
Less than 3 days	25	-	4	27	27	16	36	4	-	25	52	-	26	19
4 - 7 days	32	17	34	32	51	37	30	7	-	24	16	17	40	22
8- 15 days	17	31	24	30	12	18	23	12	3	39	11	8	12	11
More than 15 days	26	51	37	11	10	29	11	76	97	12	21	75	22	47

Annexure 29: Likely conversion if supply/availability are addressed (figures in percentage) - gram panchayat

	ALL surveyed	AS (N=35)	BHR (N=99)	CHG (N=90)	GUJ (N=91)	JHK (N=51)	MP (N=232)	MG (N=68)	NAG (N=31)	ODI (N=59)	RAJ (N=97)	TRIP (N=12)	UP (N=517)	WB (N=36)
Less than 5%	3	3	-	3	2	-	2	1	-	2	-	-	6	8
5-25%	26	26	5	30	15	20	26	16	13	20	20	58	35	44
25-50%	38	40	21	47	47	29	55	51	26	22	39	25	34	19
More than 50%	32	31	74	20	35	51	17	31	61	56	41	17	25	28

Annexure 30: Willingness to promote LPG usage (figures in percentage) - gram panchayat

	ALL surveyed	AS (N=35)	BHR (N=99)	CHG (N=90)	GUJ (N=91)	JHK (N=51)	MP (N=232)	MG (N=68)	NAG (N=31)	ODI (N=59)	RAJ (N=97)	TRIP (N=12)	UP (N=517)	WB (N=36)
Willingness	97	94	100	97	100	88	88	99	100	95	94	100	100	100

Annexure 31: Willingness to tie up with OMC for LPG distributorship (figures in percentage) - gram panchayat

Willingness to tie up	ALL surveyed	AS (N=35)	BHR (N=99)	CHG (N=90)	GUJ (N=91)	JHK (N=51)	MP (N=232)	MG (N=68)	NAG (N=31)	ODI (N=59)	RAJ (N=97)	TRIP (N=12)	UP (N=517)	WB (N=36)
Yes	78	63	96	76	95	71	71	90	87	68	87	67	74	97

Annexure 32: Willingness to promote community kitchen (figures in percentage) - gram panchayat

Willing to promote community kitchens	ALL surveyed (N=1418)	AS (N=35)	BHR (N=99)	CHG (N=90)	GUJ (N=91)	JHK (N=51)	MP (N=232)	MG (N=68)	NAG (N=31)	ODI (N=59)	RAJ (N=97)	TRIP (N=12)	UP (N=517)	WB (N=36)
Yes	44	20	53	20	16	25	61	69	97	41	10	75	47	22

Annexure 33: List of gram panchayats surveyed

District	Number of gram panchayats surveyed
Ambedkar Nagar	24
Ashok Nagar	17
Aurangabad	8
Azamgarh	24
Barmer	12
Bahraich	24
Betul	17
Baksha	4
Balasore	3
Balrampur	24
Banaskantha	21
Banda	25
Banka	4
Banswara	11
Baran	11
Bargarh	11
Bastar	11
Begusarai	8
Bhabua Kaimur	7
Bilaspur	11
Bokaro	10
Badaun	22
Chatra	5
Chirang	4
Chitrakoot	23
Cooch Behar	5
Dahod	16
Damoh	15
Dausa	10
Deoghar	5
Dantewada	12
Dhaulpur	10

District	Number of gram panchayats surveyed
Dhemaji	4
Dhubri	3
Dindori	15
Dungarpur	11
Durg	14
East Champaran	4
East Medinipur	5
Fatehpur	24
Gajapati	8
Garhwa	3
Gaya	9
Ghazipur	24
Golaghat	4
Hailakandi	4
Hardoi	24
Jalpaiguri	5
Jamui	7
Jaunpur	24
Jhabua	18
Kabirdham	11
Kalahandi	7
Kannauj	25
Karauli	11
Karbi Anglong	4
Kasganj	24
Katihar	7
Khandwa	15
Kheda	10
Khunti	8
Lakhimpur	16
Lalitpur	24
Latehar	4
Madhubani	6
Maharajganj	25
Mahasamund	6
Malkangiri	7
Mayurbhanj	9
Mirzapur	24
Mon	9

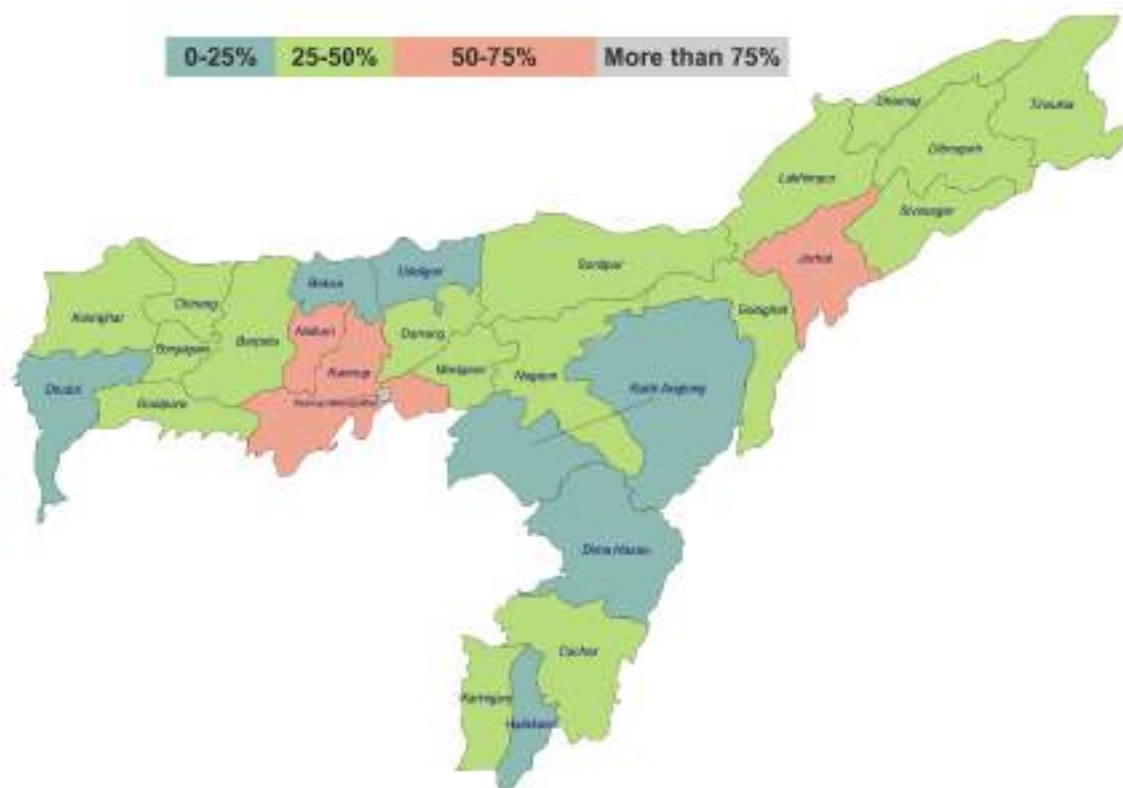
District	Number of gram panchayats surveyed
Murshidabad	5
Muzaffarnagar	20
Muzaffarpur	4
Nagaon	4
Nalanda	9
Narmada	3
Pakur	12
Panchmahal	5
Panna	19
Peren	7
Purulia	5
Raigarh	7
Raipur	11
Raisen	14
Rajsamand	11
Rampur	27
Rewa	18
Sabarkantha	20
Sant Kabir Nagar	24
Seraikela	5
Saran	7
Surguja	9
Seoni	18
Shajapur	17
Sheopur	17
Simdega	2
Singrauli	17
Sitamarhi	6
Sonbhadra	25
Sonitpur	4
South 24 Parganas	5
South Tripura	6
Sultanpur	24
Sundargarh	8
Supaul	4
Surendranagar	17
Tonk	10
Umaria	17
West Garo Hills	23



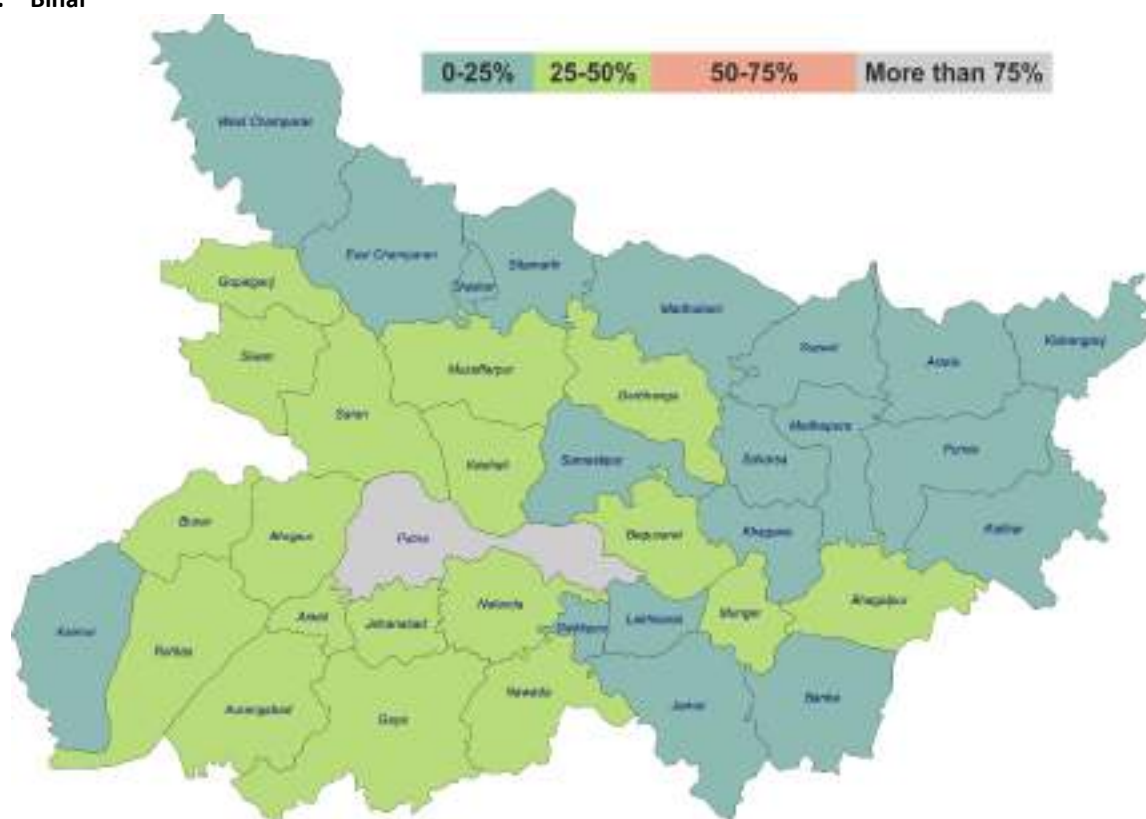
District	Number of gram panchayats surveyed
West Jaintia Hills	22
West Singhbhum	7
West Khasi Hills	23
West Medinipur	5
West Tripura	6
Wokha	9

Annexure 34: District-wise LPG penetration as on 1 June 2015

A. Assam



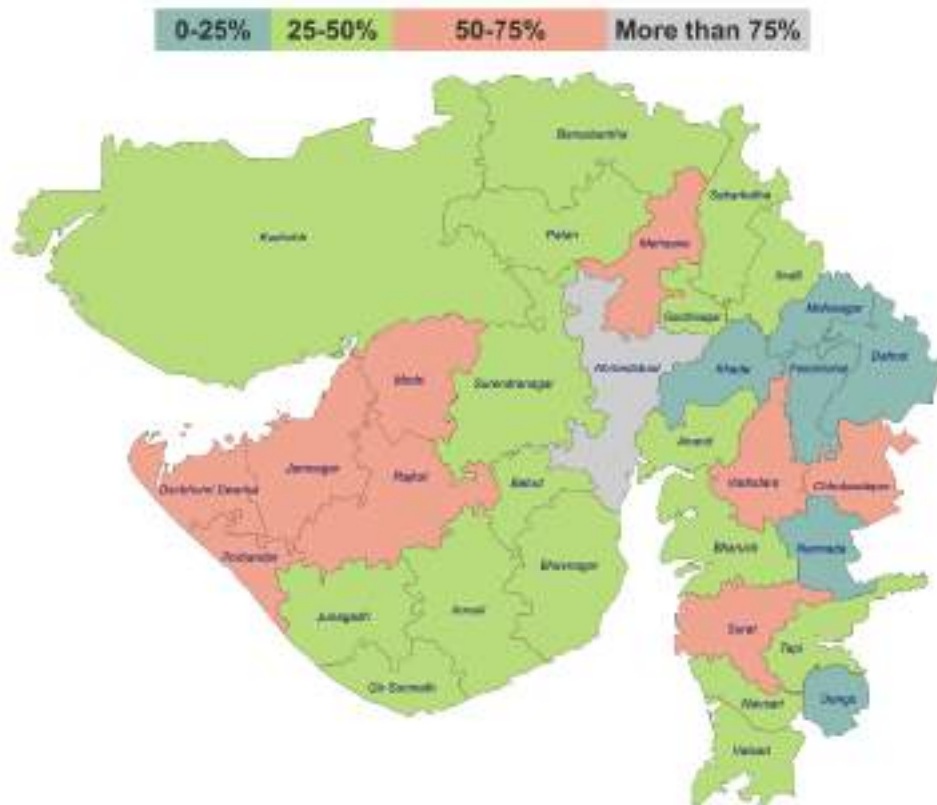
B. Bihar



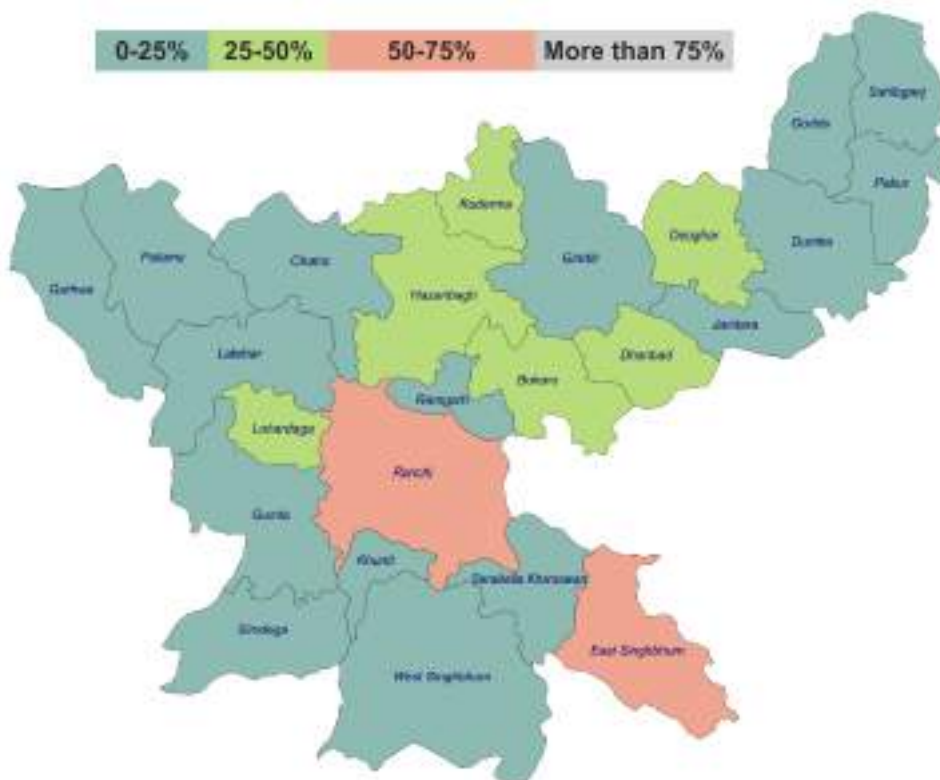
C. Chhattisgarh



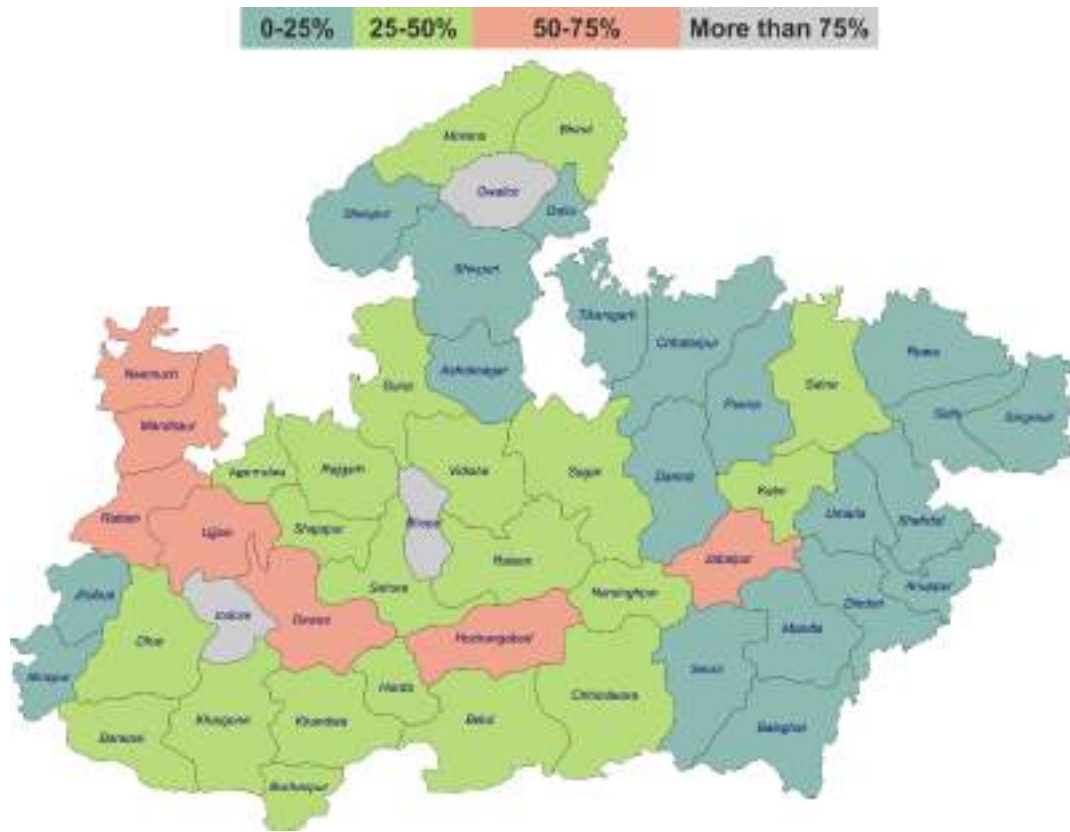
D. Gujarat



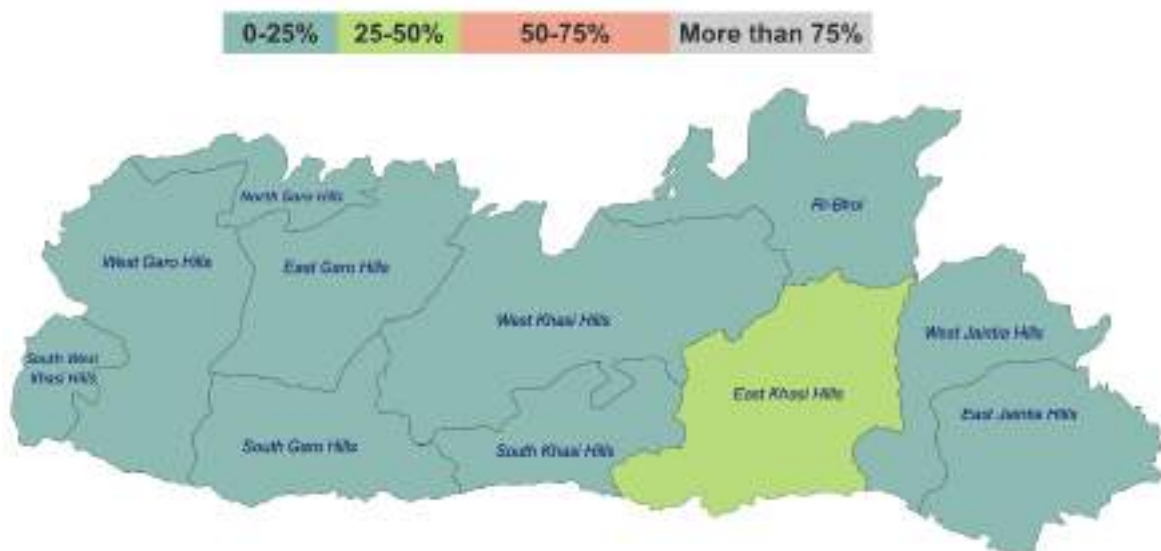
E. Jharkhand



F. Madhya Pradesh



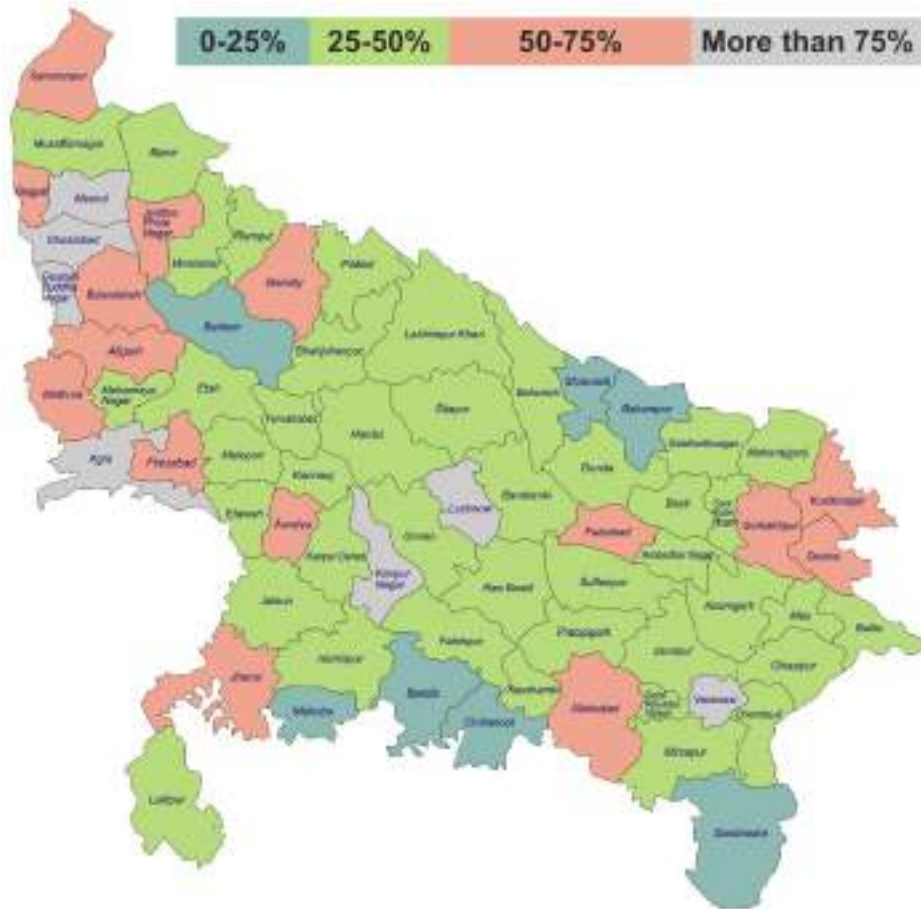
G. Meghalaya



K. Tripura



L. Uttar Pradesh



M. West Bengal





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