

# Beyond the barriers of affordability: An analysis of India's cooking fuel support program under the COVID-19 assistance package

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# Introduction and background



The Government of India's flagship program "Pradhan Mantri Ujjwala Yojana" (PMUY) has been instrumental in increasing the use of clean cooking fuel in rural India. However, the high cost of cooking fuel reduces its uptake among poor households. How can the government address concerns around the affordability of clean cooking fuel for the poor? Do other barriers obstruct the use of clean cooking fuel? In what ways did the government's measures to support PMUY households during the lockdown help the poor?

Following the lockdown imposed on 24<sup>th</sup> March, 2020 to curb the spread of the COVID-19 pandemic, the Government of India (GoI) announced the Pradhan Mantri Garib Kalyan Yojana (PMGKY).<sup>1</sup> With a budget of USD 23.5 billion (INR 1.7 lakh crore), the objective of PMGKY was to empower the poor<sup>2</sup> to buy essential supplies through cash transfers and subsidies on items, such as food and cooking gas. As part of PMGKY, 80 million poor women enrolled under the Pradhan Mantri Ujjwala Yojana (PMUY), an initiative of the government to provide clean cooking fuel to poor households, received cash transfers in their bank accounts to purchase canisters<sup>3</sup> of liquefied petroleum gas (LPG).

This paper analyzes the program's performance and experience of beneficiaries in receiving money into their bank accounts and purchasing LPG refills during and after the lockdown. The note is part of a series of publications from MSC's "Evaluation of the Indian government's response to COVID-19."



1 PMGKY was announced as a COVID relief package by the government. It included multiple benefits like free grains through India's public distribution system, three free LPG canisters to PMUY beneficiaries, cash transfers into Jan Dhan (PMJDY) accounts of women, advance cash transfers to farmers, among others.

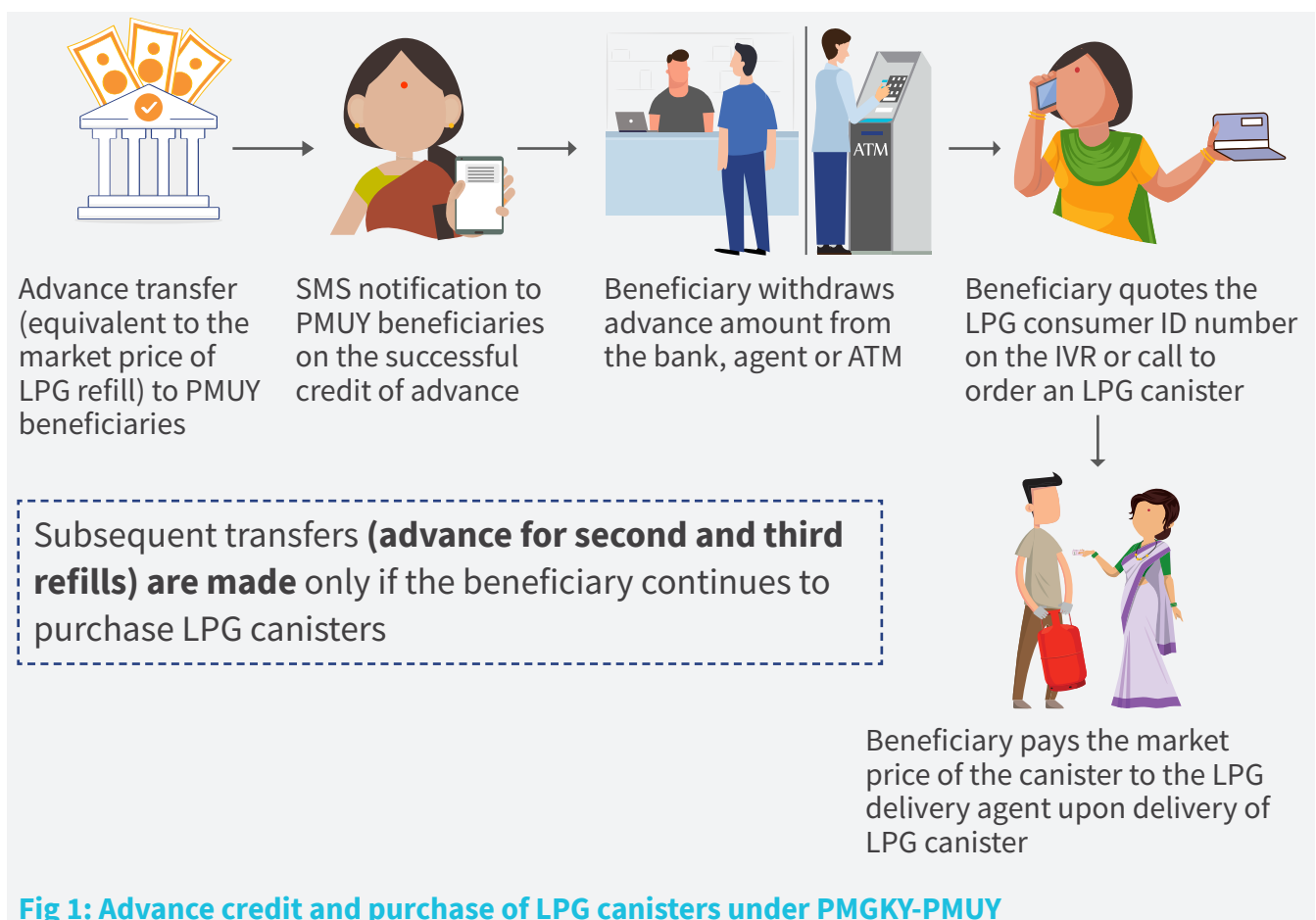
2 PMGKY benefits were extended mostly to households below the poverty line (BPL), identified under various programs for food, fuel, and pension support.

3 The government transferred the amount to buy LPG refills to PMUY beneficiaries on certain conditions. The amount (first instalment) equivalent to buying an LPG refill was transferred in advance to all PMUY beneficiaries and the amount for the second and third LPG refill was provided only if the beneficiaries availed the LPG with the advance.

## Details and performance of the program

Pradhan Mantri Ujjwala Yojana (PMUY), launched in May 2016, eliminates the most significant impediment to using LPG by poor households in India—the high cost of the initial investment. PMUY provides women of poor households with financial support worth USD 22 (INR 1,600)—50% of the total cost to purchase an LPG connection, including an LPG canister and stove. PMUY has improved LPG penetration in India from 55% in 2014 to more than 99% in 2021.

During the COVID-19 pandemic, the government used PMUY as a platform to transfer advances to women under PMGKY, its COVID assistance package, effective from 1<sup>st</sup> April, 2020. The women could use the advances—provided in three installments to purchase three LPG refills at the market price—over the following six months<sup>4</sup> to cope with hardships faced due to economic disruption. The process of delivering advance amounts to PMUY households was relatively straightforward.



All women enrolled under PMUY received the equivalent of the market price of an LPG canister in advance into their registered bank accounts. An SMS was then sent to their registered mobile phones to confirm the deposit, which they could use to purchase the LPG canister. Beneficiaries could order subsequent LPG canisters 15 days after the delivery of the first refill, with only one canister available in a

<sup>4</sup> The SOP circular stated that in case a PMUY beneficiary does not take refills in the stipulated three-month period, the beneficiary can utilize the advance to take refills up to 31st March, 2021.

calendar month. The advance amount for the second month was transferred only if the beneficiary purchased an LPG canister in the previous month. The average uptake of free LPG canisters per PMUY household was approximately 1.76 until December, 2020, with a total of 142 million refills purchased under the program.<sup>5</sup>

## Research background and methodology

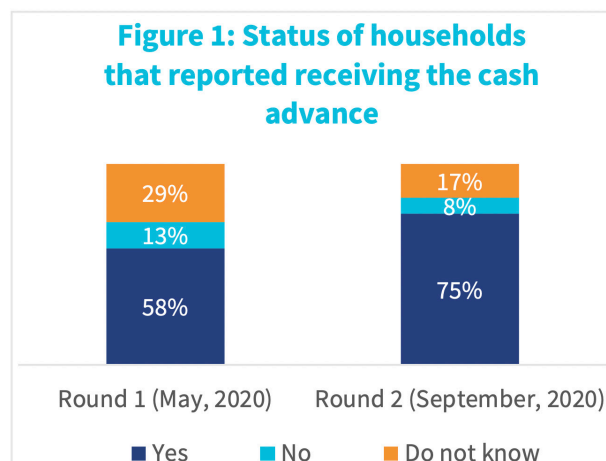
To gauge the effectiveness of PMGKY and support measures<sup>6</sup> announced by the Indian government, MSC conducted two rounds<sup>7</sup> of demand-side research using a mixed-method approach. We conducted the first round during the three-month lockdown in May, 2020 and the second round after the lockdown<sup>8</sup> in September, 2020. The third round of the study is planned for late 2021. The objective of the study is to assess various social protection interventions of the central and state governments during COVID-19 and suggest improvements to the programs.

The research was designed as a panel study, with respondents selected using a multi-stage sampling approach from the BPL (below poverty line) database. The study is nationally representative and provides both national- and state-level estimates for key indicators.<sup>9</sup> MSC covered beneficiaries who received benefits from at least one program under PMGKY. The total sample<sup>10</sup> covered in both rounds 1 and 2 was 5,081 across 18 states and union territories in each phase, with 4,082 respondents common to both rounds (the panel).

### Findings from rounds 1 (May, 2020) and 2 (September, 2020)

#### 1. Advance receipt of LPG subsidy

The number of households that reported receiving cash in their bank accounts increased to 75% in round 2, from 58% in round 1 (figure 1). This increase could be attributed to relaxations in travel restrictions, which allowed households to visit bank branches or agents in September and verify the receipt of cash advances into their accounts. Most surveyed households (63%) learned about the cash advance through messages from their bank or



5 The 80 million PMUY beneficiaries availed 142 million free LPG refills. Per household usage of LPG = 142/80

6 Public Distribution System, Midday Meal Scheme, PM Ujjwala Yojana, National Social Assistance Program, PM Kisan, PM Jan Dhan Yojana, and Mahatama Gandhi National Rural Employment Act)

7 The first study was conducted in May, 2020, second in September, 2020, and the third study is planned for May, 2021.

8 India remained in lockdown from 24th March, 2020 to 31st May, 2020. The country started to relax restrictions from June, 2020, except those imposed in containment zones.

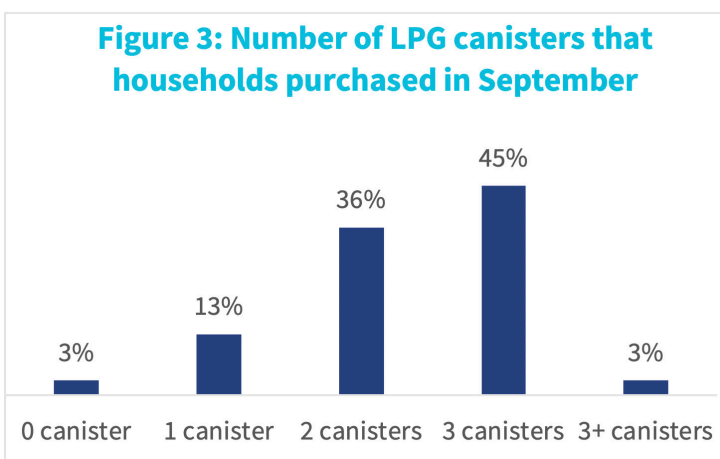
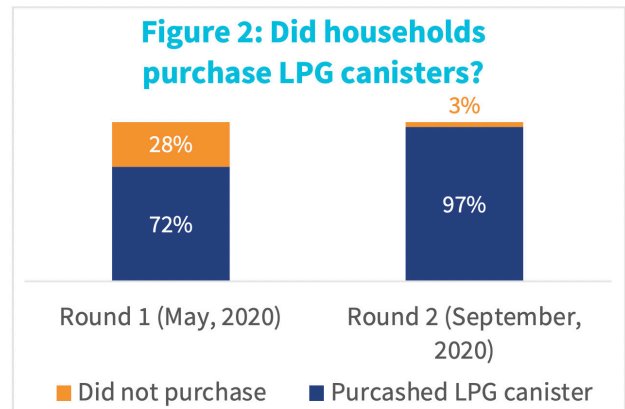
9 A sample size of 270 households was estimated for each state with a 95% confidence level and a 6% margin of error. The quantitative data was collected using Computer Aided Telephonic Interviews (CATI) system and qualitative research was undertaken by the MSC staff over telephone.

10 Some respondents were unable to participate in interviews while others could not be reached over the phone. This led to the attrition of 999 respondents between rounds 1 and 2. We replaced this missing sample with 999 new respondents with similar profiles to ensure we had the required sample size to provide state-level point estimates along with national level-point estimates.

OMC. The remaining households reported receiving information from various other sources. These included a visit to the bank branch to update their passbook (23%); through friends, neighbors, or relatives (11%); and through mobile applications of the bank (2%) and OMC dealers (1%).

## 2. LPG purchasing behavior

The survey indicated that households did not wait for the cash advance to hit their bank accounts to purchase LPG canisters. 97% of the households purchased at least one LPG canister until September, 2020 (figure 2). This was up from 72% in the first round of the survey. The percentage of households (3%) that purchased a single LPG canister cited various reasons for the low demand for LPG canisters, such as the inability to withdraw the advance amount and preference for food cooked over traditional fuels.

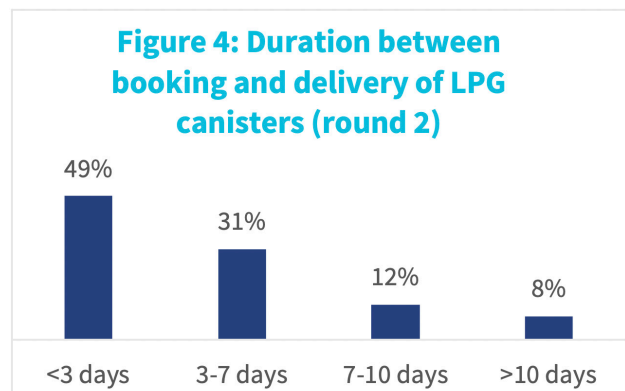


81% of households reported purchasing two or more LPG canisters during September, 2020 (figure 3). However, the use of these canisters varied across urban and rural geographies. Around 58% of households purchased three LPG canisters in urban areas, as compared to only 40% in rural areas. This may be due to a lack of strong infrastructure for the home delivery of LPG in rural locations. Our [previous survey](#) highlights that PMUY beneficiaries

in rural areas had to travel more than 5km, and as far as 10km in some cases, to pick up an LPG cylinder from the dealer location.

## 3. LPG purchase experience

As highlighted in figure 7,<sup>11</sup> 75% of households found it quick and easy to purchase LPG canisters. Of these, 92% received the canister within 10 days of placing an order while 8% of households reported a delay of more than 10 days (figure 4). The remaining 25% of households that faced issues reported



<sup>11</sup> The gap between LPG delivery and booking was checked only in round 2.

various challenges. These included a lack of transparency on advance transfers in their accounts, long queues at dealer locations, difficulty carrying the canister to and from dealer locations, and overcharging by LPG dealers.

## Summary of findings

### Need for financial assistance to improve the uptake of PMUY

As mentioned above, 97% of women purchased at least one LPG refill. This particular finding is significant for the general uptake of PMUY among poor households. Critics have raised questions on the sustained use of LPG and PMUY's perceived failure to bring about behavioral change to encourage poor households to switch from solid fuels, such as firewood and dung. Though the program has increased the customer base for LPG, critics lament the high cost of refills that deter households under PMUY from using clean fuel regularly.

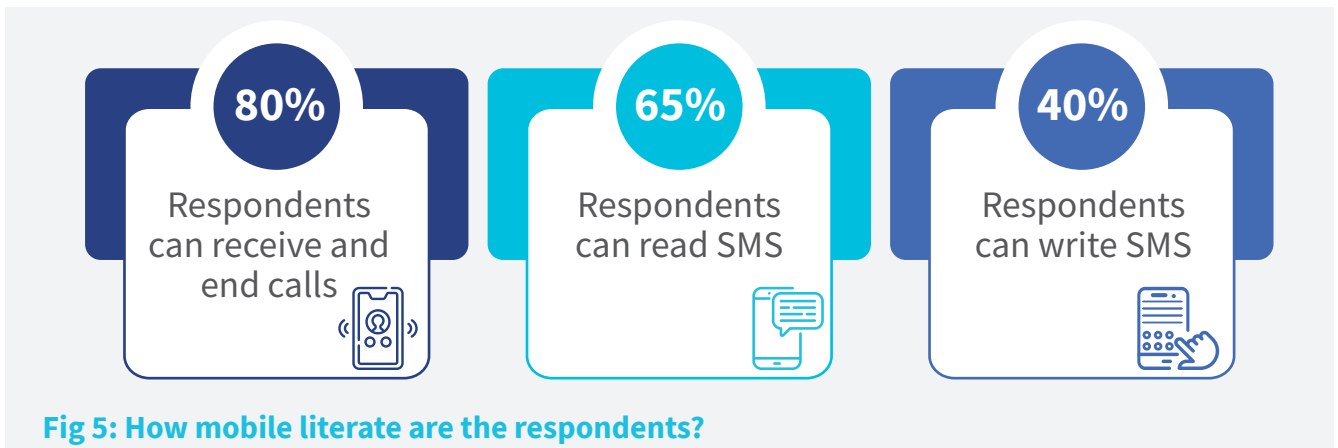


In our previous [policy brief](#), we argued that the cost of LPG refills is one of the biggest challenges that PMUY households face. Since most LPG retailers in rural areas do not provide doorstep delivery, these households must also bear a partial or full day's loss of wages to refill their canisters, which amounts to USD 1.5–2.3 (INR 100–150). Expenses of transportation further add to the costs since beneficiaries generally borrow a vehicle and spend USD 0.77–1.5 (INR 50–100) on petrol or diesel to commute to the dealer point. Thus, the effective cost to refill an LPG canister for a PMUY household is USD 2.3–3.8 (INR 150–250) higher than the actual price of a refill. In our policy brief, we advocated an increase in the subsidy amount provided by the GoI to make refills affordable for PMUY beneficiaries.

This insight proved fortuitous during the pandemic when the GoI, under PMGKY, provided an advance amount for three free canisters to PMUY households. A staggering 97% of them seized the opportunity to use clean fuel. Before the pandemic hit, 20% of PMUY households did not return for a second refill a year after obtaining their LPG connection. Another finding from the survey indicated that 23% of households would stop buying LPG canisters when the GoI subsidy ceased. This further validates the need for sustained financial assistance to help poor households switch to clean cooking fuel.

## Communicating with target beneficiaries is a challenge due to low mobile and digital literacy

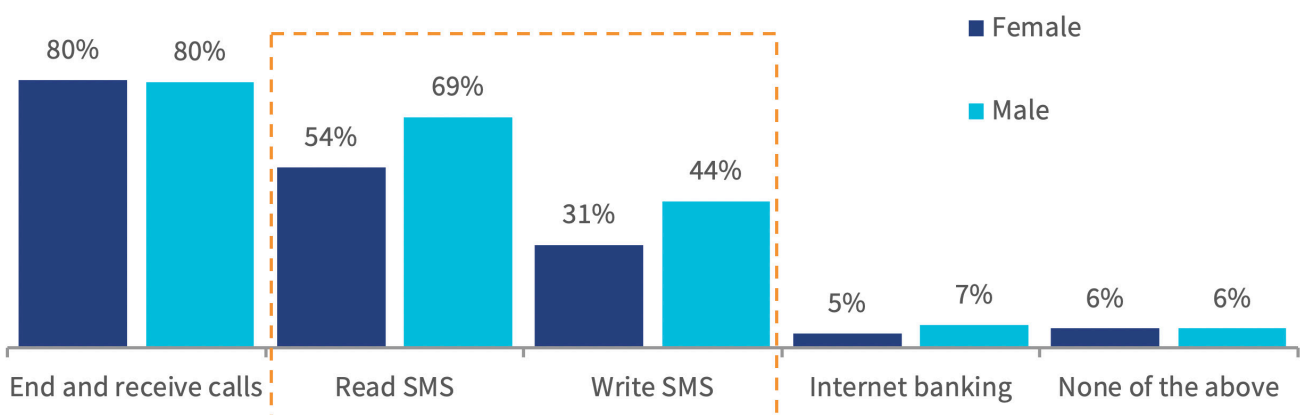
During the survey, we also captured data on how respondents use mobile phones. Surprisingly, 20% of them were unable to pick up or end calls. Further, 35% of the respondents cannot read SMSs, while 60% cannot compose SMSs. This presents a challenge as refill procedures under PMUY are entirely mobile-based. People must book refills through SMS or the Interactive Voice Response System (IVRS). The booking details and service completion code is then shared through mobile communication with the beneficiaries.



**Fig 5: How mobile literate are the respondents?**

Hence, people find it difficult to order or receive LPG canisters due to low mobile literacy<sup>12</sup> rates. Additionally, banks and OMCs used SMS to share information about the deposit of subsidy amounts under PMGKY. This added to the woes of households with low mobile or digital literacy.

The results of the survey also indicate a significant difference in mobile literacy between male and female respondents, particularly in reading and writing SMSs. PMUY is a gender-intentional program with women as primary beneficiaries. However, lower female literacy rates hinder the widespread adoption of a program that relies primarily on SMS for its processes and communications. Moreover, since we conducted telephonic surveys, a significant proportion of women without mobile phones were left out.



**Figure 6: Mobile literacy**

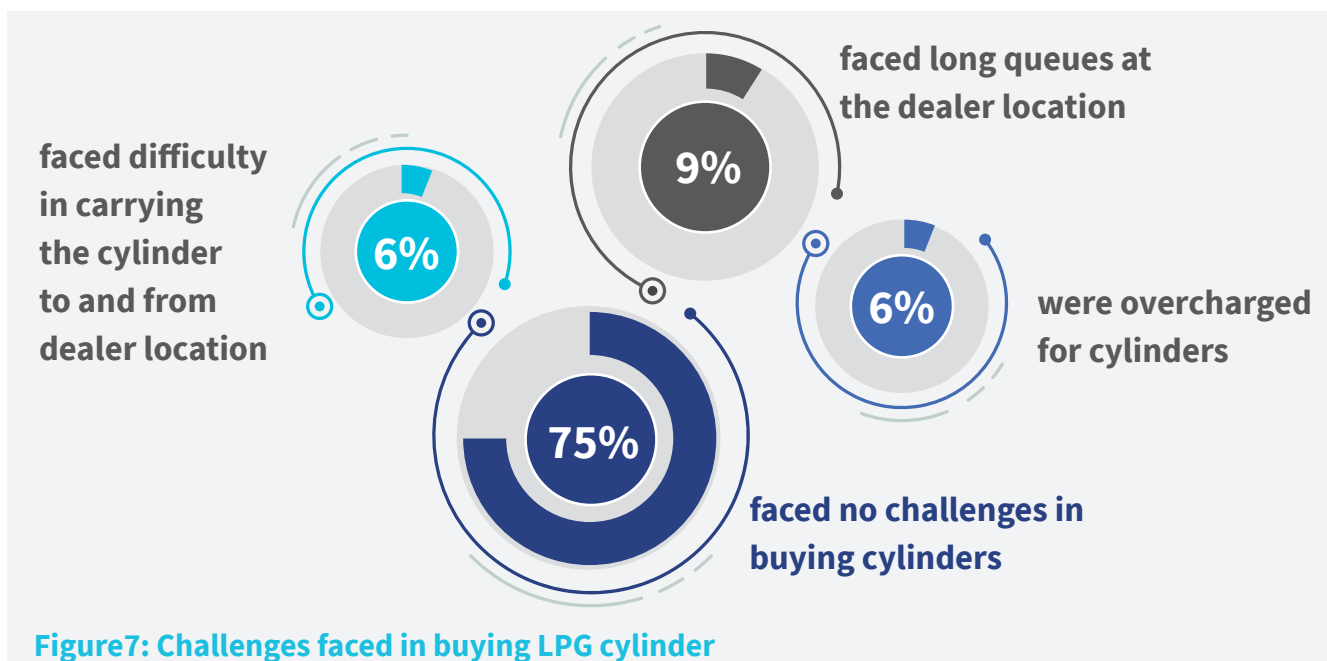
<sup>12</sup> <https://www.microsave.net/2017/05/09/digital-wallet-adoption-for-the-oral-segment-in-india-concept-development-for-mowo-mobile-wallet-for-oral-2/>

## Women appreciate the free LPG support

The advance transfers for LPG support were a blessing for women, who did not have to step outside their homes to collect fuelwood during the lockdown. With shrinking household incomes and wage cuts, most households did not prioritize LPG and instead relied on traditional means for their cooking needs. The announcement of free LPG support to poor households came at the right time. It saved women from drudgery, especially when the first wave of the pandemic was at its peak. According to government statistics, around 75 million women received the transfers. However, 3.1 million eligible (4%) women could not get the benefit owing to non-operational bank accounts.

## The need for further improvements in LPG delivery

Our previous policy brief highlights a key reason for the low uptake of LPG—no provision for home delivery of LPG canisters in rural areas, which makes it difficult for households to get LPG refills. With the addition of more than 6,000 new LPG dealers in rural areas, the home delivery of LPG refills has certainly improved. However, the LPG delivery infrastructure is still not adequate and needs considerable improvements to expand its reach in rural areas.



Beneficiaries of the program reported that many distributors now deliver LPG canisters to a common point in villages weekly or fortnightly. The youth and other community members from the village use this opportunity to earn some income by helping people carry the LPG canisters to their homes. Our survey<sup>13</sup> reveals that 75% of PMUY beneficiaries did not face any challenges in the purchase of LPG canisters. At the onset of the pandemic, the government recognized LPG delivery as an essential service and directed LPG distributors to take stringent measures to promote the doorstep delivery of LPG, even in rural areas.

<sup>13</sup> This data point was collected in round 2 of the survey (September, 2020).



## Recommendations

In light of the findings mentioned above, MSC recommends the following measures to promote and sustain the use of clean cooking fuels:

- 1. Continue to extend LPG subsidy to PMUY customers:** The government has nearly eliminated the LPG subsidy by slashing the overall budget allocated for petroleum subsidies. However, the price of subsidized LPG cylinders increased by around 50%, despite a steep fall in crude oil prices in 2020. This will make it more difficult for PMUY beneficiaries to sustain the usage of LPG, particularly in rural areas where alternatives like fuelwood, dung cakes, among others, are easily available. The government should recognize that most PMUY households have volatile incomes, which is not sufficient to afford LPG regularly. The government should continue to extend the subsidy or some form of financial support to the 80 million PMUY beneficiaries to promote a complete shift to clean cooking fuel. To fund this expenditure, it can consider reducing the number of subsidized LPG canisters available<sup>14</sup> to beneficiary households.
- 2. Develop effective communications for the target segment:** The beneficiary target segment of PMUY comprises largely women. Due to lower mobile literacy rates, as compared to their male counterparts, most women do not place orders for LPG refills, though the LPG connections are in their name.<sup>15</sup> Many women beneficiaries also end up paying extra to middlemen or skip ordering refills altogether as they are not comfortable with the IVR-based<sup>16</sup> LPG booking process. This calls for a strong communication system to ensure that program-related information is more personalized, transparent, and accessible to the target beneficiary segment. Though the IVRS allows consumers to order LPG refills around the clock through a call or SMS, most beneficiaries find it difficult to navigate the system. To make consumers more comfortable with the system, LPG distributors should generate greater awareness about the ease of use and convenience of IVRS. They can utilize self-help groups and cooperative societies to disseminate information about the process to book LPG refills and other program-related information. Further, the LPG delivery staff should be equipped to take orders for LPG refills. This will help consumers who require assistance or handholding support to order LPG refills.

Malti, a domestic worker in Uttar Pradesh, has a PMUY connection issued in her name. Since she is not comfortable with the IVR-based process to order refills, Malti requests the LPG delivery staff verbally to deliver a refill. Using this informal method makes it impossible to identify her LPG consumer number. As a result, Malti cannot receive the cash advance for the refill. As she remains unaware of the market price of LPG, the delivery staff charges more for the refill. Numerous others like Malti use similar methods to avail refills and bear the resulting monetary loss due to a lack of information.

<sup>14</sup> A PMUY beneficiary is eligible to receive 12 subsidized canisters per year.

<sup>15</sup> <https://www.ceew.in/publications/realising-ujjwala-dream>

<sup>16</sup> <https://my.ebharatgas.com/BookCylinder/IVRS>

**3. Nudge households to increase LPG usage:** According to the 2010 Global Burden of Disease Study,<sup>17</sup> each minute, two people in India die prematurely due to indoor pollution. However, most do not realize the toll that cooking with firewood and other unclean fuels takes on their health. This is largely due to behavioral and cultural barriers. For instance, most people in rural areas prefer to cook using fuelwood as they find the food tastier than that cooked using LPG. Moreover, many women feel obligated to cook using fuelwood because they consider it a part of the customs their elders like mothers and mothers-in-law have continued to follow.

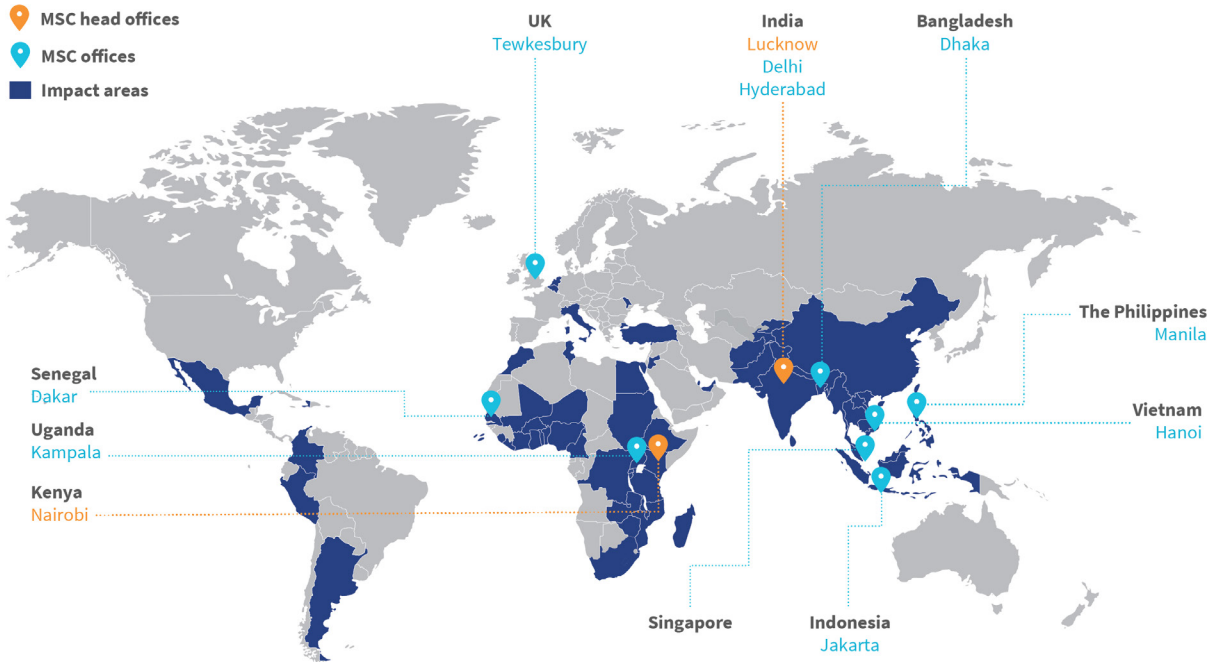
To increase the adoption of LPG among low-income households, the government must continue to encourage behavioral change, with a focus on health. As men are mostly involved in decisions around the purchase of LPG, we suggest triggering behavioral change among both men and women. The government should initiate programs that educate the target segment on the health hazards of unclean fuels and nudge people to adopt LPG gradually. The government should also onboard PMUY beneficiaries who have made a complete shift to LPG in every village as **“agents of change.”** These agents can run information campaigns by visiting nearby households.

With the government's recent announcement to distribute 10 million new LPG connections under PMUY, nearly all Indian households will have access<sup>18</sup> to clean cooking fuel. India must now work to promote and sustain LPG usage, a significant challenge that continues to persist. People have still not shifted completely to modern and clean cooking fuels despite the expansion of LPG coverage across the country. MSC believes targeted communication, continued financial support, and nudges driven by the implications of unclean fuel on health would contribute to the ultimate success of the program.



<sup>17</sup> <https://www.downtoearth.org.in/news/air-pollution-killing-620000-indians-every-year-global-burden-of-disease-report--40316>

<sup>18</sup> The total number of LPG consumers will be closer to 300 million by March, 2022.



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