CENTER FOR ENVIRONMENTAL MANAGEMENT & SUSTAINABLE ENERGY (CEMSE)

FINAL REPORT

CYLINDER RECIRDULATION MODEL, PUBLIC AWARENESS SURVEY (PAS) & POLICY EFFECTIVENESS RESEARCH

CRM-PAS & PER

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GENERAL PROJECT CONTEXT

Household usage of clean cooking fuel (LPG) which is also renewable is yet to meet several targets set by the Government of Ghana. In 2010, Ghana set a target of 50% access of LPG by 2015 but achieved only 22.3% (Asante et al., 2018). Another 50% target was set in 2012 for the year ended 2020 yet achieved 25% as at 2018 (Ministry of Energy, 2019). In 2017, the government set another target of 50% usage of LPG by 2030, and by 2021, Ghana had achieved 36.9% usage of LPG as cooking fuel in households (Ghana Statistical Service, 2022). Additionally, only 14.8% of rural households use LPG as cooking fuel while 51.3% of urban households use LPG, implying that urban households use LPG more than rural households. Apart from Greater Accra which has about 68% of its household using LPG, less than 50% of all household in the 15 regions of Ghana use LPG as clean cooking fuel as at 2021 (Ghana Statistical Service, 2022). Ashanti region's penetration of LPG is still 38.1% implying that less than 40% of households in Ashanti region rely on clean cooking fuel as their source of energy (Ghana Statistical Service, 2022).

The regional LPG consumption per capita using the regional consumptions of LPG and the 2021 household population reveals that the national LPG consumption per capita is 11.00 kg implying that each person uses 11kg of LPG per annum (NPA'Regional-Petroleum-Products-Supply', 2022; Ghana Statistical Service, 2021). Ghana's LPG per capita is lower than Africa's LPG per capita of 12kg (Sahara Group, 2021).

In order to increase the consumption of LPG especially in the Greater Accra and Ashanti Region, the National Petroleum Authority developed the Cylinder Recirculation Model in 2017.

The aim of the policy was to reduce accidents which commonly happens at gas filling points in communal and residential areas particularly during the filling or discharging of the gas so as to ensure the safety of businesses, property and human life. Another aim was to ensure that at least 50 per cent of Ghanaians have access to safe, clean and environmentally friendly LPG by 2030 which is in line with the renewable energy policy of Ghana (NPA, 2023). The ambitious regulatory framework after implementation will revolutionize the distribution and promotion as well as increase the consumption of LPG at the household level.

According to the NPA, all stakeholders including the LPG Marketers, Ministry of Energy as well as other petroleum service providers were engaged on the CRM, engendering a smooth implementation. However, four months after the implementation of the model in September, 2023, many LPG consumers continue to purchase LPG from the traditional LPG retail outlets (filling plants) and a rare sight of exchange points within the communities in the Greater Accra Region. The delay in establishing exchange points within the communities could derail the effective implementation and sustainability of the module. In this regard, this study is conducted to find out the factors affecting the delays in the implementation of CRM from the perspective of the LPGMCs. Also, the study finds consumers awareness of the CRM and whether there has been a behavioural change towards the model.

METHODOLOGY

The study is a mixed method study that used the survey technique for LPG consumers and an interview method for LPG marketers. Thereby, the research consisted of two data collection instruments including the questionnaire and the structured interview guide which has open and closed ended questions. The questionnaire was designed to find out the awareness and knowledge of the CRM as well as the presence of Cylinder Exchange Point within communities in the Greater Accra Region after four months of launching and advertising of the programme on media platforms.

The questionnaire was designed digitally and shared on social media and other online platforms for people to answer voluntarily. The email requirement was used to check non repetition of responding to the questionnaire by a respondent. The questionnaire was shared online for three weeks. The respondents who answered the questionnaire were 112. The questionnaire was analysed using cross tabulations, frequencies and percentages. The results were presented in charts.

The revelation from the survey necessitated an interview session with LPG marketers. In this regard, the structured interview guide was designed to interview all the 36 LPG marketers in the Greater Accra Region. However, 14 respondents were interviewed, and this was because there was data or response saturation. The 13th and 14th respondents responded similarly to the earlier 12 respondents. The data was coded and presented in theme with interpretations based on their narrations.

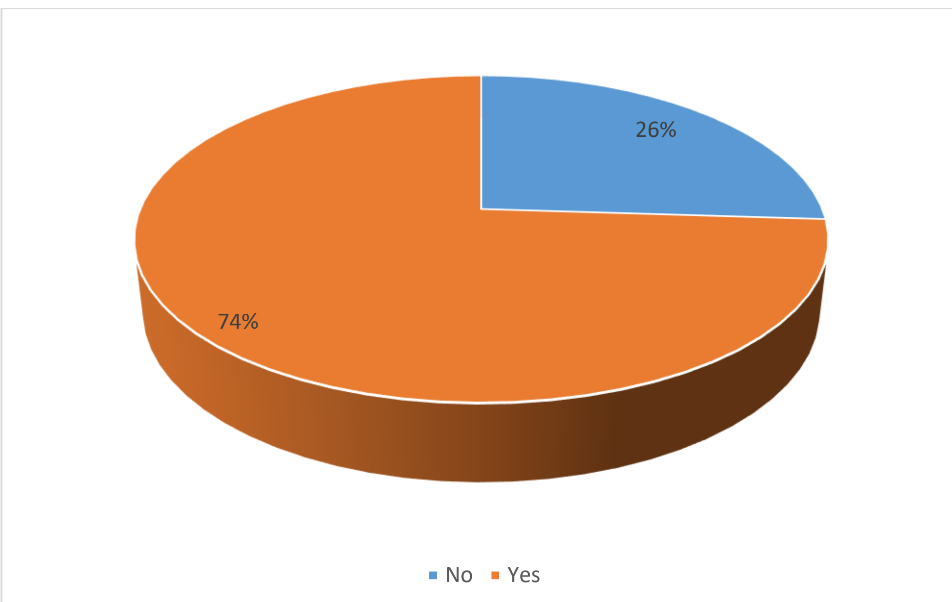
FINDINGS

The quantitative study had 112 respondents who voluntarily participated during the online public awareness survey (PAS) of the cylinder recirculation model. The questionnaire captured respondents' awareness, knowledge and utilization of the cylinder exchange points within their communities.

Awareness of the CRM

The respondents were asked whether they have heard of the cylinder recirculation model and the results revealed that 74% of the respondents in the survey had heard of CRM and 26% had not heard of CRM at the time of the study.

Figure 1: Awareness of CRM

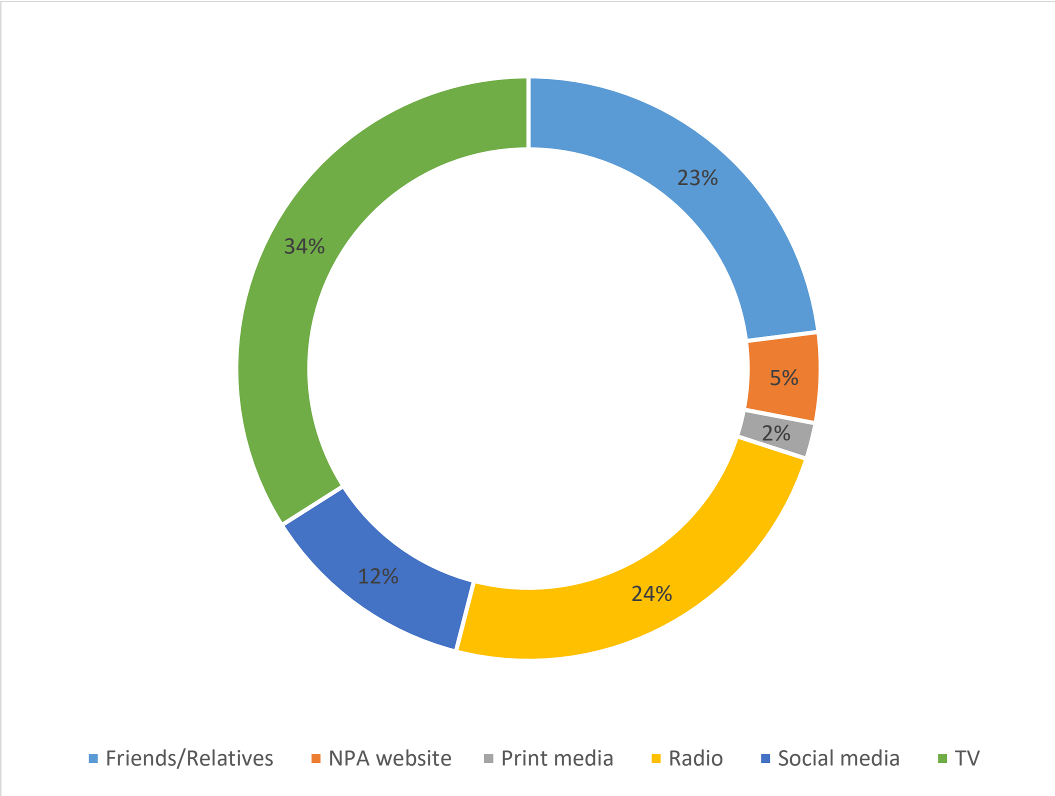


Field survey, 2024

Source of information

The 83 respondents who said they had heard of the CRM were asked, how they heard about the CRM and the results revealed that 34% heard about CRM from TV, 24% of the respondents heard about CRM from Radio and 23% heard about CRM from social media. The least source of information about the CRM is the NPA website (5%) and Print media (2%).

Figure 2: Source of CRM awareness

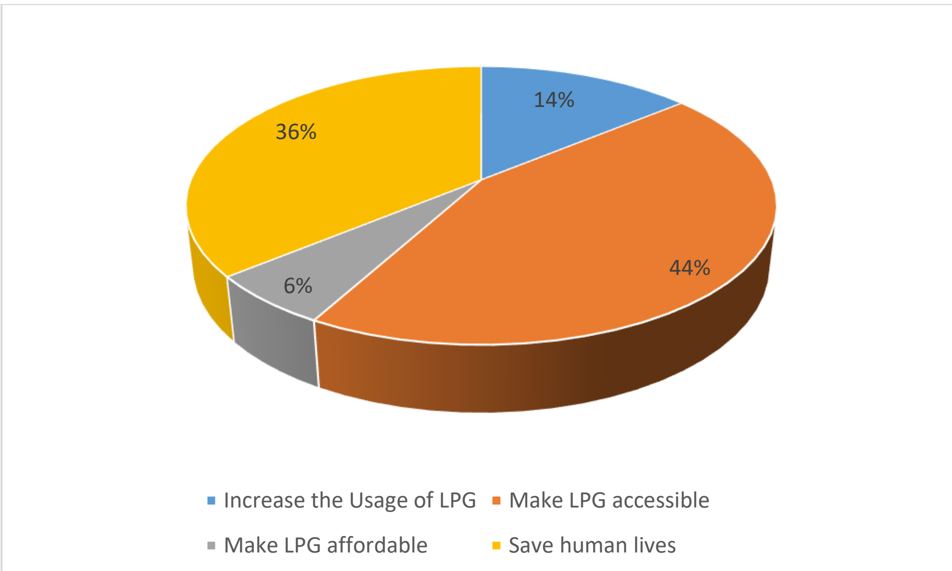


Field survey, 2024

Main aim of CRM

The 83 respondents who had heard of the CRM were asked about the main aim of the model and the results show that 44% chose make LPG accessible followed by 36% of the respondents who chose save human lives, and 14% chose increase in the usage of LPG and 6% chose make LPG affordable.

Figure 3: Main of aim of CRM

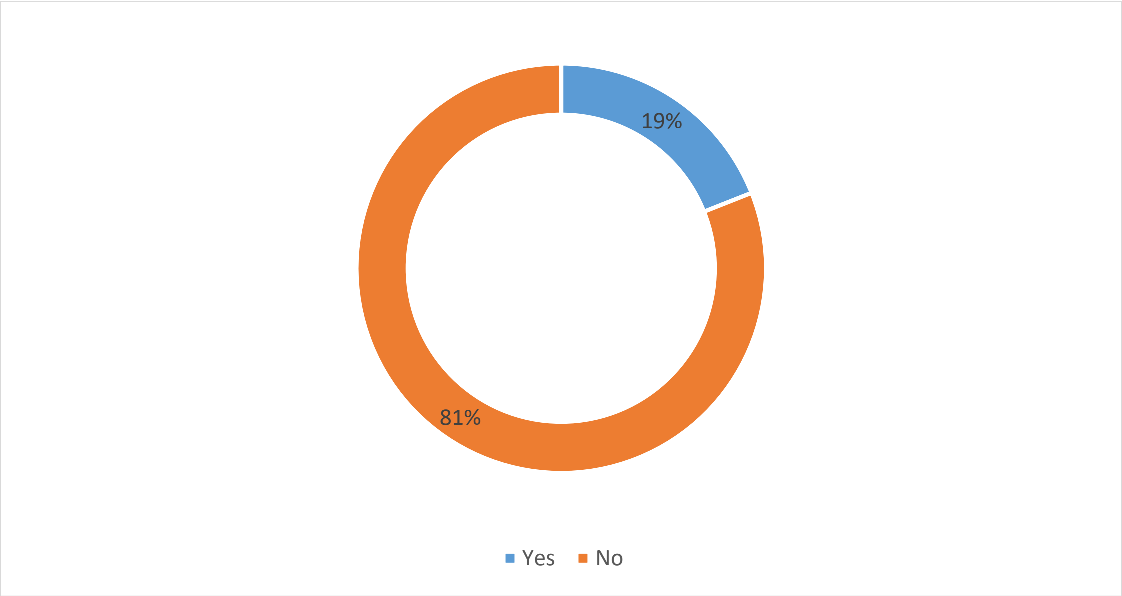


Field survey, 2024

Presence of Cylinder Exchange Points within communities

The respondents were also asked whether they had seen some Cylinder Exchange Points within their communities and the results show that 81% of the respondents said they had not seen cylinder exchange points in their community while 19% said they had seen these exchange points.

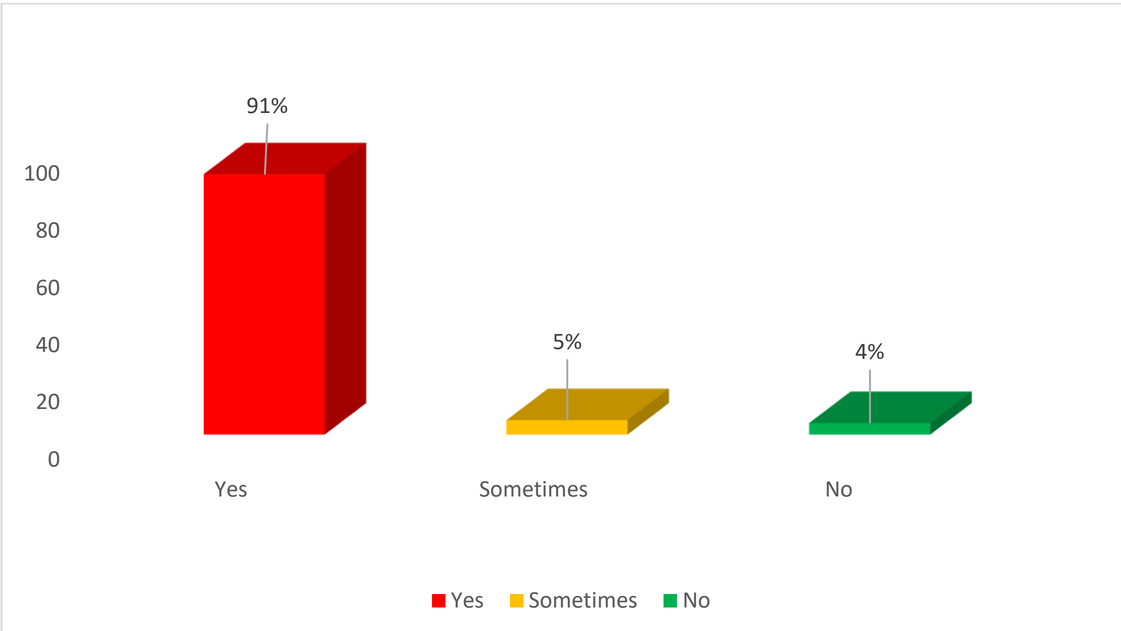
Figure 4: Presence of Cylinder Exchange Points within communities



Field Survey, 2024

Usage of LPG

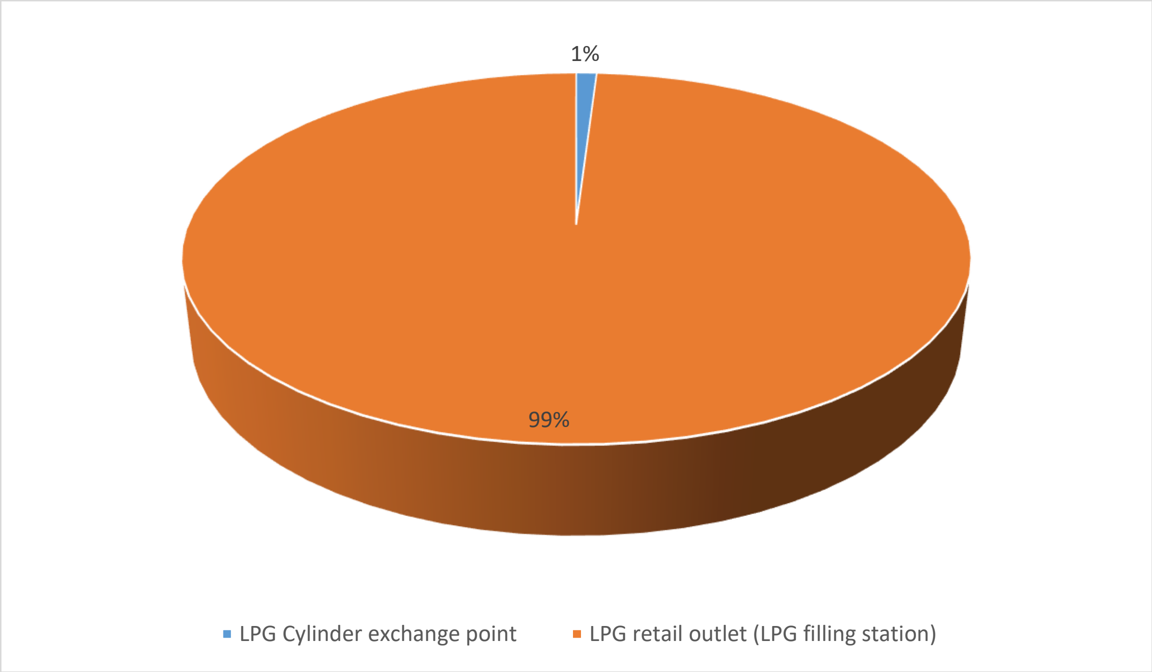
The research wanted to find out the number of respondents that use LPG and the results shows that 91% chose yes they use LPG, followed by 5% who chose they sometimes use LPG and 4% chose they do not use LPG.



Field Survey, 2024

Source of getting LPG Cylinder filled

Lastly, the respondents were asked about where they buy their LPG when their LPG cylinders are empty and the results showed that 99% of the respondents said they buy their LPG from the LPG retail outlet or LPG filling plants.



Field Survey, 2024

Qualitative Findings

The lack of Cylinder Exchange Points within community and the continuous use of LPG filling stations to fill their empty LPG cylinders as indicated by the survey necessitated the qualitative research to find out the reasons that affects the effective implementation of the CRM.

The research team contacted 36 LPG marketers within the Greater Accra Region to respond to a semi structured interview guide which focuses on the CRM policy formulation and implementation, critically examining the challenges in these processes. As indicated earlier, the team contacted 36 marketers, however, 14 respondents participated in the study. The qualitative data revealed about seven main challenges affecting the effective implementation of the CRM.

Awareness and purpose

All the 14 participants were aware of the CRM. They also knew the purpose of the model including increasing penetration and ensuring safety through the distribution chain. It was realized that LPG marketers believe the CRM could only serve its purpose if implementation is done effectively, taking into consideration the views of LPG marketers.

Consultation

13 of the respondents interviewed shared similar opinions that NPA did not consult them during the programme design phase. Only one respondent said he was consulted during the programme design phase. The one person who said he was consulted narrated that, the policy (CRM) formulators did not factor in his inputs in the policy or model formulation stage. However, all 14 shared similar opinions that they were series of presentations of the policy before the launch of the model.

Additionally, all the 14 participants agreed that they were consulted during the CRM implementation phase. However, their feedback were not factored in the final document before implementation.

Safety

The 14 participants were aware that one of the key reasons for the CRM was to ensure and enhance safety in the distribution of LPG in Ghana. The addition to ensuring safety by the participants is that communities must have good road network and handlers of the products at exchange points must be educated or informed on the safety protocols regarding the handling of the products. In this regard, they shared similar position that NPA is yet to outline safety protocols at the cylinder exchange points and the lack of safety standards from NPA makes it difficult to establish exchange points.

Cost of new infrastructure

The 14 participants also mentioned costs associated with the model which NPA did not factor in the designing of the CRM. They were of the Opinion that building new exchange points attracts costs including land, infrastructure and human resource and the NPA wants them to bear these costs alone which are disincentives. One of the respondents mentioned that, effective implementation of CRM could cost the firm about $300,000. Another mentioned the difficulty in accessing land in Accra to create exchange points. They were of the opinion that some tax wavers or government incentives could have been instituted in the model which become incentives for marketers to diversify their resources towards the CRM.

Transition Period

All the 14 LPG marketers shared similar opinions on the transition period provided by NPA. It was realized that the five (5) transition period was too short for them to transit and that 10 years could have been appropriate to plough back their profits into building exchange points. However, this concern was not accepted by NPA.

Another concern raised was that the NPA did not accept their proposal of having the exchange points at their refilling plants so as to serve persons who want to exchange their empty LPG cylinders with filled ones while others who want to buy in bits are also served.

Other Concerns

Other concerns raised included tracking of cylinders could be difficult especially when consumers or end users relocate to new areas and they believe that the Ghana Card could not track locations of people. In this regard, they were of the opinion that there should be a system that protects their cylinders.

Also, they said the CRM should have started in the northern parts of the country instead of the southern part where most investment have been done. Some of the marketers narrated that, they have not had their return on investment and for that matter diversifying to new areas is very challenging.

Lastly, the new distribution chain which is inclusive bottling plants and cylinder filling plants could add costs to the final product, and the consumer will likely be the off-taker of the costs, increasing the price of the product for the consumer. They argued that the products will be a bit expensive compared to the current model due to the new distribution channel of the product.

CONCLUSION

LPG consumers were aware of the Cylinder Recirculation Model and know the purpose of the model being save human lives and increase penetration. However, most of the consumers had not seen cylinder exchange points in their communities and almost all consumers continued to buy their LPG from LPG filling stations.

From the LPG marketers' perspective, cylinder exchange points are not in the communities because of some concerns that they think NPA is yet to address. These concerns include costs, transition, safety, affordability and consultation.

RECOMMENDATIONS

1. Cost of implementation has been an impediment to the effective implementation of the CRM. In resolving the issue of cost as ascribed by the LPG marketers, Government should wave taxes or institute tax rebate policies for LPG marketing companies to enable them diversify these taxes to building new exchange points.
2. The NPA should intensify its campaign and promotion of the CRM within communities since most consumers continue to fill their empty cylinders at the LPG filling stations.
3. To achieve the 50% penetration, the NPA should start the CRM programme in the Northern Part of Ghana where there are fewer investment of LPG filling stations by LPGMCs, and less than 11% penetration compared to Greater Accra with 68% penetration.
4. The LPGMCs suggest that NPA should allow them build exchange point closer their refilling plants in order to serve consumers who come to exchange their empty cylinders with filled one, and those who buy in smaller units also get to fill at the stations.

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