Evaluation of the Rural LPG Program in Ghana
Lessons Learned on Barriers and Facilitators to LPG Adoption

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Presentation outline

• Background
• Objectives
• Results
• Implications for program and policy
• Conclusion and recommendation
Background
Ghana

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Estimate</th>
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<tbody>
<tr>
<td>Population</td>
<td>27.7million</td>
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<tr>
<td>Gross domestic growth</td>
<td>4.2%</td>
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<td>Inflation</td>
<td>15.5%</td>
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Inception/background of Ghana RLPG program

• In 1989, the then Ministry of Energy embarked on LPG Promotion Program and distributed free cylinders, subsidized gas stoves to help consumers switch to LPG as a domestic cooking fuel throughout the country in order to preserve the forest.

• However, it was limited to only urban centers and a few towns.

• Ghana’s forest is being depleted not only through lumber activities, but also felling of trees for wood fuel needs.

• About, 13,400 people are estimated to die annually from smoke related diseases contracted through the use of wood fuels in Ghana.

• In a quest to remedy this situation, the previous Ministry of Energy and the National Petroleum Authority initiated the “Rural LPG Promotion Programme”
Background of Ghana RLPG program

Objectives of RLPG

- To arrest the problem of deforestation
- To promote healthier cooking options in semi-urban and rural areas
- **Distribution progress**
  - 75000/200,000 has been distributed as at Sept. 2016.
Rationale for RLPG evaluation

• Beyond the distribution, there has not been any systematic evaluation of the Rural LPG program

• RLPG builds on Ghana Randomized Air Pollution and Health Study (GRAPHS);
  – To determine how the use of improved cook stoves will improve birth weight in newborns.
  – To determine how improved cook stoves will lead to a reduction in physician-assessed severe pneumonia.
Objectives
Objectives

• **Main Objective**

Evaluate an ongoing program by the Ghana Ministry of Petroleum (MoPET)

• **Specific Objectives**

  – To assess:

  1. Operations of the Rural LPG Program
  2. Usage of LPG stoves and traditional three stone
  3. Predictors of LPG use
  4. Barriers and facilitators to sustained and exclusive use of LPG
  5. How Rural LPG program affects air pollution exposures
Findings on operations of the RLPG Programme

LPG distribution process

1. MoPET selects beneficiary districts based on Energy commission criteria for low LPG use area
2. Identify LPG marketing company close to the beneficiary district.
3. Contact the District Assembly and schedule date for reconnaissance activities, launching, sensitization & distribution
4. Reconnaissance activities: Meet district assembly, Inspect filling station outlet and prepare for distribution.
5. Program Launch in district with an exhibition distribution of 50-100 beneficiaries on the grounds
6. Distribution Schedule: Grouping communities into zones
7. Sensitization and distribution exercise in each beneficiary community
Findings on operations of the RLPG Programme

• LPG distribution-Community perception
  – Generally non-beneficiary respondents were of the view that the selection of beneficiaries for the LPG cook stoves was politicized. This is stated as follows
    – “The LPG cook-stoves were distributed based on political affiliation. When I questioned, I was told point blank that, I was not a party member ….. so that is why I did not to get one” (FGD, LPG non-beneficiary)

• Initial payment of $4 (22GHC) for LPG expensive
PICTURE OF LPG CYLINDERS & STOVE AT A LAUNCH
Results 2
Findings on LPG Stove Use within the Program

• The common type of cook stove used in the study is the traditional three stone fires. This is stated as follows:

  Firewood is common in this community and you get some anytime you go to the farm; that is why we have become used to the traditional three stone fires” (FGD, LPG beneficiary)

• Financial Constraint influence biofuel use

  “I use the three stone fires because I am unemployed. If I use coal pot I cannot buy charcoal but firewood is easily available in the bush” (FGD, LPG non-beneficiary)

• Biofuel for cooking for large family size

• Food such as banku, Konkonte are preferably prepared on three stone fires
Which stove did you use to cook your main meal yesterday?
Status of refilling

Number of times refilled

- Never: 58%
- Once: 23.5%
- Twice: 9.5%
- Thrice: 5%
- More than thrice: 4%

Percentage of participants who refilled
Results 3
Findings on predictors of LPG Stove Use within the Program

The following factors were associated with stove use.

– Compared to 18-30 year olds, primary cooks within ages 31-42 & above 53 years were more likely to use LPG stoves

– Compared to those who have never been to school, those who have had education from middle, technical and post middle were more likely to use the LPG stoves

– Primary cooks who were of Bimoba, Frafra and Gonja ethnic descents were more likely to have used LPG stoves compared to Akans.

– SES, household size, were not significantly associated with LPG stove usage
Results 4
Findings on barriers to LPG Adoption I

- **Financial constraints** were commonly reported as the main possible barriers to the use of LPG cook-stoves.
  
  – Cost of transportation

  – Cost of refilling LPG cylinder as stated;

  “I think that money for refilling the gas will be a hindrance. Mostly the income we get here is seasonal. When crops are in season, it might be easy to refill but when the farm produce gets finished the refilling will stop” (FGD, LPG non-beneficiary)

- **Fear** of possible adverse effects particularly on children

- **Distance and Unavailability** of LPG filling station in the district
Barriers: Distances to LPG filling points

- Bomino
- Bonte
- Fiema
- Akonkonti
- Dromankuma
- Busunya (Dist. Capital)
- Nkoranza LPG filling point
Findings on barriers to LPG Adoption II

• **Inability to operate the LPG stoves:** This is stated as follows
  
  “There are people who do not know anything at all; may be the person is an old lady and will not know how to turn it on and off but once you have brought it, she will collect and put it somewhere” (FGD with men, Akonkonti).

• **Type of meal:** This is stated as follows
  
  “The reason why we use the three stone fires is that the number of people in some households are many. Sometimes you have to prepare banku and konkonte but we are unable to cook with the LPG cook stoves so we use the three stone fires and prepare the soup with the LPG cook stove” (FGD with men, Bomini).

• **Household size:** This is illustrated as follows
  
  “We are many in the households so we use big cooking pots; it is not as if you cannot use it to prepare banku but the large family size” (FGD men, Fiema).
Findings on facilitators of LPG Adoption

- **Acceptability**
  - Less cooking time

- Low smoke emission: This is stated as follows
  
  “When you return from the farm hungry and sweating and you want your wife to prepare something [food] for you. She just scratch a matches to light the stove and in no time the food will be cooked. But in the case of a three stone fires [Mbokya], you have to fan it for some time with the smoke entering your eyes. You may even feel dizzy and collapse. So the gas is very helpful” (FGD, RLPG beneficiary).

- No biomass fuel collection time which enhances school children performance
Findings on facilitators to LPG Adoption II

• **Facilitates multi-tasking**

• **Male involvement in cooking**
  
  “Before the LPG cook stoves came we had the perception that cooking is for women because going to set fire to cook as a man means you don’t have a wife. For now this perception has reduced because of the LPG cook stove” (FGD, LPG beneficiary)

• **Business opportunities**
  
  “When we get to the local level, for instance, we distribute 2000 cylinders in each district assembly and for some the private they saw it as a good threshold to start business with. So for instance, in some communities there were no LPG outlet and once the person get to know that there 2000 cylinders in circulation here then they feel that this is a good way to make money” (IDI, Program Officer, MoPET)
Results 5
Lascar CO monitor
Impacts of Stove Use within the Program
Implications for program and policy

- Inadequate robust M&E by NPA and MoPET
  - Yet there are plans to scale up

- Ministry of Health not involved as stakeholders

- Cylinder recirculation not yet initiated

- Unavailability/set up LPGMC in beneficiary district before distribution threatening program sustainability

- NPA to facilitate establishment of LPGMC in beneficiary districts
Conclusion

• The RLPG is a great programme which is appreciated by community members

• The challenges need to be addressed to achieve the intended objectives

• Continuous independent monitoring and evaluation is required beyond the communities used for this study.
Recommendations for LPG adoption

• Availability of LPG refilling points close to participants is necessary for sustained use

• There is the need to improve stove design to accommodate large household meals

• There is the continuous need to increase safety awareness education in the rural areas to mitigate fear of use

• Increase opportunities for economic empowerment of women to mitigate financial constraint
Acknowledgements

- Ghana Government
- USAID/GACC/URC
- Ghana Ministry of Petroleum
- GRAPHS funders (NIEHS, GACC, Thrasher Research Fund)
- National Institutes of Health (NIH) Fogarty International Center (FIC)
- Kintampo Health Research Center
- Columbia University
THANK YOU