Energy scenario in India

Reference: Council on Energy, Environment and Water (CEEW)

Facts:

- 5.5 times growth estimated in India's commercial primary energy consumption between 2010 and 2050
- 450% estimated increase relative to 2010 in per capita carbon dioxide emissions due to fossil fuel dependence in 2050
- 75 – 80 % - India's dependence on a single Qatar for natural gas imports

Facts (Conti.)

- 45 % of rural households in India are non electrified.
- 85 % of rural households are devoid of clean cooking fuel.
- 70 % of rural working population in India depends on agriculture and allied activities for livelihood.
- 60 % of irrigated area depends on groundwater irrigation.

Facts (Conti.)

- 90 % of India's imported coal demand is met by 3 countries Indonesia, Australia, South Africa.

- Over 90 % of the wind and Solar installations are spread across seven states i.e. Tamil Nadu, Gujarat, Rajasthan, Maharashtra, Karnataka, Madhya Pradesh and Andhra Pradesh.

Some facts

- The majority of the population of the country's population is a major objective of the integrated sustainable energy policy for India.
- More than two third of country's population , except in some selected areas, have remained trapped in a sustenance economy based on commercial energy sources like firewood, animal dung and agricultural wastes.
- 75 % of the total energy consumption in the rural areas continues to remain in the household sector,amily to meet cooking requirements.

Need for rural energy policy in India

- India is second most populous nation in the world with an extremely diversification ecology
- Almost 80 % of the total energy consumption is in the domestic sector. To meet their cooking energy requirement.
- Conventional energy sources meet almost 60 % of the inability of the people to shift to commercial fuel like electricity, LPG and kerosene due to low purchasing power of the people and limited availability of these fuel.
- In order to redress these problems, several efforts have made, both by govt. and non govt. organisation.

Issue in the preparation of rural energy policy for India

- Technology choice
  - -Techno economical
  - -Adhoc
  - -Sporadic
  - -Sub-optimal
- Implementation mechanism- development programs
- Role of market- barriers for commercialization
  - -Technical, financial,social, institutional. Etc.
- Capacity building

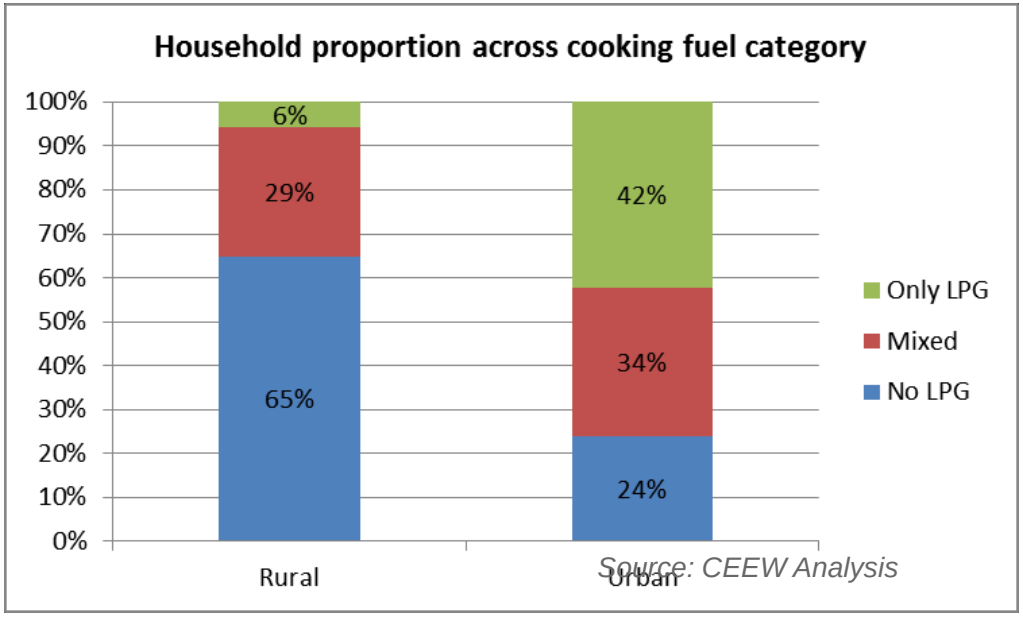
Rural energy pattern

- Requirement's of the energy inputs in the rural sector for households, production, agriculture, cottage,industries and agro-processing fall in the broad categories of subsistence and productive needs.
- More than 60 % of Indian house holding depend on traditional sources of energy like fuel wood and crop residues for meeting their cooking and heating needs.
- Rural energy needs are different than the urban needs due to economic disparities.

Current Scenario: LPG

- Current Consumer base - 160 million (16 Crore) connections, subsidy outlay - Approx. 48,000 Crores (2013-14)
- 28.64 % of households use LPG as a cooking fuel.
- Number of domestic connections does not imply an equivalent number of households using LPG as their primary cooking fuel. Despite more than 110 million connections in 2011, only 70 million households indicated LPG as their primary cooking fuel.
- Distribution agencies play a significant role in the LPG availability and uptake. Of the 12,610 LPG distributors in the country (MoPNG, 2013b), nearly 70 per cent are located in urban and peri-urban areas
- Traditional cooking fuels, such as biomass and kerosene, are still used in abundance. Even with such a large number of LPG connections, 80% of Indian households still continue to use solid fuels and kerosene for cooking.

Less than half of urban households and only 6% of rural households completely rely on LPG for cooking. Rest of the population continues to consume traditional cooking fuels for cooking, and thus is exposed to indoor-air pollution, the second biggest reason for premature deaths in India.



Source: CEEW Analysis

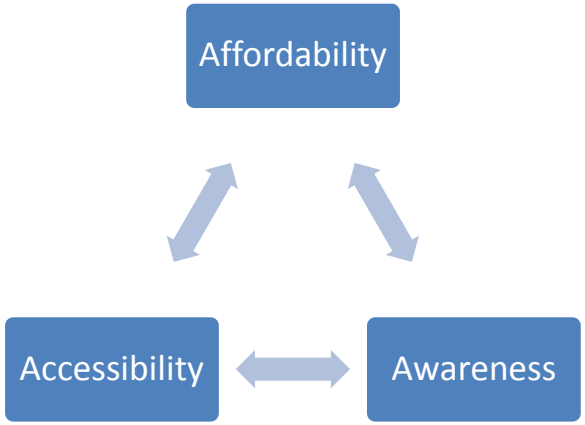
Efficacy of LPG subsidy: *Who really benefits from it?*

- Literature analysis suggests that the affordability limit for cooking energy expenditure, below which it can be termed as affordable, is ~ 6 per cent of overall household expenditure.
- The Government subsidises LPG to make clean cooking fuel affordable for poor households. However, in practice, more than 50% of subsidy on LPG is cornered by the richest 30% families, while the poorest 30% get only 15% of subsidy share.
- A big reason for this skewed share is that for poor households, even the subsidised LPG cylinders prove to be beyond their affordability levels. Poorest households (bottom 10% by income) in rural and urban areas spend almost 9% and 8% of their monthly expenditure respectively for procuring LPG at current subsidised prices. In contrast, rural and urban households in the highest income bracket have to spend a mere 3% and 2% of their monthly expenses on LPG, respectively.

Reasons such as high upfront cost, poor penetration and lack of LPG distributorships in rural India, and lack of awareness about associated health benefits also contribute to poor uptake of LPG by the poor and rural households.

3 A’s of for LPG

- To effectively achieve the objectives of LPG subsidy, Following three A’s are required simultaneously:



Recommendations

- Rationalise LPG subsidies by limiting the cap to 9 cylinders per connection.
- Introducing differentiated subsidy for domestic LPG based on income levels. Well to do income level category may be excluded from the subsidy
- Improve LPG availability in rural areas and promote alternative fuels for coking along with higher efficiency cook stoves.
- Leverage existing institutions such as Self Help Groups (SHGs) and rural supply chains to deliver LPG in far flung areas.

- Firewood, when collected at no cost, is an economically attractive option
- In terms of useful delivered energy, the use of expenditure on firewood is comparable, and in many cases more expensive, than LPG.
- For every Rupee spent, firewood burnt in traditional cook stoves delivers only 150 kcal of useful energy whereas LPG delivers as much 220 kcal. Only 28 per cent of the rural households that use firewood collect all of their consumption, free of cost. And the time required ??

Thank you