

COMMENTARY

A Roadmap for Access to Clean Cooking Energy in India

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SUMMARY

Access to clean cooking energy in India has gathered a new momentum in the political discourse of India, thanks to the Pradhan Mantri Ujjwala Yojana, a scheme that aims to improve access to liquified petroleum gas (LPG) for the socio-economically weaker sections of society. While the scheme has been successful in providing LPG connections to over 54 million households, the real challenge is to sustain the use of clean cooking energy and transition households away from the traditional use of biomass. To achieve this transition, it is necessary to develop a roadmap for clean cooking energy access that adopts a multi-fuel, multi-stakeholder approach, and is guided by principles of equity and inclusivity. This essay outlines sectoral and fuel-specific strategies that such a roadmap should adopt. These strategies integrate technology and business model development and improve access to credit for both households and enterprises. Ensuring that these strategies are holistically implemented will require multiple ministries to come together to plug the gaps in the value chain of each fuel, and a monitoring framework to measure sustained use. The narrative must evolve towards the provision of affordable, accessible, safe and convenient use of clean cooking energy in a sustained manner.

INTRODUCTION

The Pradhan Mantri Ujjwala Yojana (PMUY) is widely expected to be one of the key platforms the ruling Bharatiya Janata Party in India will leverage in the run up to the 2019 general elections to stake claim to a second term in power. Under this scheme, the government has provided liquefied petroleum gas (LPG) connections to over 54 million households since May 2016 to reduce the adverse health effects arising from the use of traditional biomass for cooking (MoPNG 2018). Although the distribution of subsidised LPG connections is a critical first step, enabling households to use LPG for all their cooking needs is a bigger challenge. It is only the sustained use of clean fuels, coupled

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with a move away from traditional biomass for cooking and heating, that will eliminate household air pollution (HAP), which claims nearly a million pre-mature deaths in India annually.

According to the National Sample Survey (2011-12), the use of LPG as the primary cooking fuel was much higher amongst households in urban areas (68 per cent) than in rural areas (15 per cent). Although the percentage of households with LPG connections in rural areas is likely to have increased significantly with the government's recent efforts, the use of LPG as the primary fuel is likely to remain lower in rural areas than in urban areas due to the distinct socio-economic context as well as the relative ease of access to LPG in urban areas. It is important to emphasise the use of LPG as a primary fuel because many households tend to stack clean and unclean fuels to meet all their cooking energy needs. The continued stacking of unclean fuels along with LPG exposes households to HAP. In order to improve the use of clean cooking energy by all households, significant focus on planning is required to improve the awareness, availability and affordability of all clean fuels in rural areas. A two-fold approach is necessary – expanding the basket of clean fuels available to households willing to transition away from the use of traditional biomass, and a value-chain approach for each fuel to identify appropriate entry points for public and private investments and policy interventions. Given the complex nature and scale of the problem, it is important to substitute the dominant single-fuel focus with one that is cognisant of the needs, aspirations and priorities of consumers, and the limitations of each fuel. It is, therefore, timely and necessary for the country to adopt a roadmap for access to clean cooking energy.

GUIDING PRINCIPLES OF THE ROADMAP

The roadmap must integrate various clean fuels and technologies to direct focus on the sole objective of eliminating the use of polluting traditional biomass for cooking. It should be multi-fuel, multi-stakeholder, and be guided by principles that form the basis of policy recommendations for each cooking fuel. Given the integrated nature of the roadmap, the guiding principles will help synergise the growth path of each fuel or technology. For instance, in promoting a suite of fuels and technologies, the government should take care to ensure that it addresses all uses of traditional biomass in the specific local context: not just cooking, but also space heating and animal fodder preparation. Clean cooking energy policies should aim to be inclusive and gender-sensitive, and must monitor the penetration of fuels and technologies by assessing trends in their sustained use over time, not just their deployment.

In India, access to clean cooking energy has been the prerogative of the energy ministries – the Ministry of Petroleum and Natural Gas promotes LPG and natural gas, the Ministry of New and Renewable Energy supports improved cookstoves and biogas, and the Ministry of Power deploys electricity infrastructure. This piecemeal approach has focused on the penetration of specific fuels and technologies instead of meeting the cooking and heating needs of households in a holistic manner. Some countries, on the

other hand, have one ministry for energy instead of one for each cooking fuel or technology. This may be able to ensure that the incentives of the government are more closely aligned with the needs of the people. A single ministry focused on energy in India could pursue strategies integrating various cooking energy solutions based on a common understanding of consumer needs, and economic and geographic feasibility.

SECTORAL AND FUEL-SPECIFIC STRATEGIES

To integrate all efforts, the roadmap for clean cooking energy access should include both (a) sectoral strategies, and (b) fuel-specific strategies. Sectoral strategies would include interventions that improve awareness of households on the adverse health impacts of cooking on traditional biomass, understand consumer needs through detailed market assessments and segmentation studies, assess the socio-economic and gender aspects of energy access, include complementary aspects of kitchen design, improve availability of data on the use of cooking energy, and monitoring and streamlining of subsidies to focus on subsidies for cooking energy than those for a particular fuel. These strategies are independent of households' fuel choice.

Fuel or technology specific strategies focus on three key aspects: (a) product or technology development to provide safe and clean solutions that meet consumer needs, (b) business model development to ensure regular availability of the fuel, and (c) strengthening of the financial ecosystem to enable affordable access for sustained use. Each strategy should be appraised along four parameters: (a) effort required to implement the strategy, (b) time taken to implement the strategy, (c) likelihood of impact, and (d) scale of impact. A few examples of strategies that should be pursued in India are discussed below:

- **Product development:** Investment in energy labelling for LPG stoves to improve efficiency and affordability for end-users; investment in research to reduce the cost of biogas bottling and packaging; investment in R&D to develop and test cookstoves to improve their design, efficiency and adequacy; investment in R&D for solar-based cooking and modern biofuels.
- **Business model development:** Pilot enterprise based models for biogas to ensure better management of the plants; pilot alternative distribution channels for LPG, such as self-help groups (SHGs) to improve local availability; promote pay-as-you-go technology to improve affordability of payments; map the willingness to pay for electricity to identify areas that can be prioritised for electric cooking; explore decentralised production and distribution of biomass pellets for cookstoves; provide subsidised training opportunities in manufacturing and after-sale services to local entrepreneurs and workers.
- **Strengthening the financial ecosystem:** Low-interest loans for enterprises operating in remote areas and with low-income groups; support rural entrepreneurs and SHGs through preferential loans and capital subsidy in production and distribution of pelletised fuels and biogas; sensitise bank professionals to lend to enterprises in order to ease their working capital needs; involve agricultural finance institutions to support biogas plants and to leverage the use of slurry as fertilisers.

To ensure that these strategies are implemented in an integrated manner, multiple ministries would need to come together to plug the gaps in the value chain of fuels and technologies. While the energy ministries will play an important role in strengthening the value chain of cooking energy fuels and technology, support from other ministries will be equally critical to the success of the roadmap. For instance, the Ministry of Health and Family Welfare could educate households and generate awareness about household air pollution through its strong network of institutions. Similarly, the Ministry of Rural Development could support training and offer credit to self-help groups through its livelihood programmes for them to become local stockists for clean fuels and technologies.

MONITORING PROGRESS

In order to achieve the goals of the roadmap, a rigorous monitoring and evaluation (M&E) process is important. The strategies and actions under the roadmap should be evaluated via independent assessments, ensuring rigorous baselines and regular assessments over time. Such an M&E framework should (a) follow a mixed methods approach to monitoring adoption and use, (b) consider evaluation of multi-dimensional impact of cooking energy access, (c) focus on both regional and national monitoring of progress, and (d) have the data and information available publicly. The M&E team should be independent of the programme team but engage with them for regular reviews.

CONCLUSION

A multi-fuel, multi-stakeholder and multi-pronged national strategy that considers not only the supply side, but also the needs, aspirations and priorities of consumers will ensure a sustainable transition towards clean and affordable cooking energy access for all. There is a need to prioritise action for each fuel and technology based on its current level of maturity (in terms of penetration, user-acceptance, technology development, etc.). The promotion of these alternatives should be rooted in local context and planned at the district and state-level. Given the wide-ranging scope and implications of the strategies, the roadmap will be most useful if guided by a neutral inter-ministerial commission that coordinates the activities of all concerned state and non-state actors.

The debates, discussions and policy targets on cooking energy access in India need to now go beyond LPG connections. The narrative must evolve towards the provision of affordable, accessible, safe and convenient use of clean cooking energy in a sustained manner.

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