

Energy Efficiency & Renewable Energy in Household Sector

Rendering Awareness into Practice

This is a brief review discussing the role awareness and capacity building can play for the development of energy efficiency and renewable energy in the household sector. It also identifies specific initiative that has been instrumental in recognising the need of awareness, adopting holistic approach with long-term vision for energy efficiency and renewable energy (RE) promotion.

The domestic consumers constitute the second largest user segment of power. Electricity is primarily used in this sector for domestic appliances and lighting. Increasing urbanisation, changing lifestyle and rural electrification have increased the domestic consumption of electricity. The rise in household income is likely to continue to drive the demand for power on higher side, thus, leading to a situation of power crises, where it will be difficult to match the rising demand only with the conventional energy. Here, energy efficiency and renewable energy can play a crucial role as renewable energy technologies would provide clean energy; energy efficiency (EE) and demand side management (DSM) measures would help in reducing the energy demand. Hence, it is important to couple renewable energy awareness with demand side management.

Recent survey by CUTS International in two states of India revealed surprisingly high rate of awareness among all stakeholders on issues pertaining to renewable energy and energy efficiency; however, there is a wide gap between awareness and practice across household sector. In Gujarat, out of 100 percent households only 57 percent were aware of renewable energy, while out of it only 13 percent were actually using it. In West Bengal, out of 100 percent households, 75 percent were aware of renewable energy and only 36 percent were using it out of 75. Though, 67 and 60 percents of respondents in Gujarat and West Bengal, respectively, who were aware of energy efficiency, had already put their knowledge into action, but their understanding and practice on energy efficiency, to a large extent, were limited to CFL and tube lights only.

Requirement of Household Sector:

- Lighting: Use of efficient lighting (e.g., Compact Fluorescent Light and Light Emitting Diode) and control systems
- Appliances: Use of Bureau of Energy Efficiency star rated appliances
- EE in new housing: Simple guidelines could be made/building bye-laws can be amended to achieve energy savings

Therefore, there is a need to create awareness of the scope of possibilities and the extent of gains one can make through EE/RE measures. This would help in creating demand from the consumer end, which would potentially result in appropriate actions being implemented by policy makers at the top level.

Case Study¹

Like several other districts of eastern Uttar Pradesh, Jaunpur also lacks reliable access to conventional forms of energy supply. A large portion of population has to depend upon uneconomical and environment-harming options, like kerosene, etc., to meet their lighting requirements.

Therefore, with the aim of providing access to clean and reliable source of energy, an organisation initiated a project to provide solar lighting systems to 200 villages in Rampur and Ramnagar blocks of Jaunpur. As solar lantern was a new technology for the villagers, it was expected that there would be some resistance in accepting and using it. Also, the lantern was not very affordable for the villagers.

Therefore, to address this through awareness programmes, several initiatives have been taken:

1. A supply chain was established to make solar lanterns and lighting systems available to the villagers and also to create a support system for the programme to sustain.
2. A number of awareness generation camps were organised, mainly in the night, to demonstrate the usefulness of solar lanterns.
3. Trust had to be build-up and the various features of the product had to be demonstrated to convince the villagers. The motivators selected were local residents and already well known to the villagers.
4. A special drive to encourage women to attend the camps was initiated as they would benefit from the lamps the most and thus influence the decision on purchasing.
5. In addition to the awareness camps, several interactions among the self-help groups, villagers, individuals were organised to explain the benefits of this clean energy and the impact it will have on improving their income and in providing relief from kerosene emission.
6. A marketing network comprising of the stakeholders field level motivators, electricians and bankers was formed.
7. Training for repairing the lanterns was provided to the village electricians and focused branch manager training programmes for the bankers was organised to train them for giving loans for the product.
8. Finance from the local bank and micro-finance facilities were provided.

¹ UNDP, Access to Clean Energy A Glimpse Of Off Grid Projects In India, at http://www.undp.org.in/sites/default/files/reports_publication/ACE.pdf

The programme created awareness among the villagers about the benefit of the product, provided training and also facilitated availability of loan. Once villagers understood and experienced the positive impact of the solar lanterns in their lives, they readily accepted the new technology.

Now the people of all the 200 villages are living an improved life, where solar lanterns have replaced kerosene lamps. This has improved their productivity, reduced their expenses on kerosene, thus increasing income, and the less polluting environment has resulted in better health.

What we learned from this case study is that social mobilisation is a vital aspect in such initiatives and awareness and empowerment play a vital role in such mobilisation.

Recommendations

Key points need to be kept in mind for the required stride in the EE/RE development:

1. Community-based participatory institutions for the promotion and development of EE/RE awareness, so that all the stakeholders can participate in the process of development and use of energy and in implementing energy programmes.
2. Economic and technical acceptability of products run on energy efficient and renewable energy by localising the available resources and promoting in-house manufacturing, R&D, technical know-how and service centres.
3. Favourable and consistent policies, acts and regulations to promote the development of renewable energy resources and ecosystem like technologies, institutions and financing mechanisms.