

Technology for All: Need for a Sustainable Model to Addresses the Need of the End Users:

A Case Study on Cross Cutting Issues

Energy efficiency improvements can be achieved by reduction in the energy consumption and adopting technological changes. However, to sustain these technical improvements, it is important to create an enabling environment with emphasis on certain non-technical factors like better organisation and provision of doorstep services, improved financial linkages and relationship building multiple stakeholders.

When Thakor Managaji Waghaji decided to purchase solar lighting systems in his farm land, the sole driving factor was non-availability of electricity in the farm land. Mangaji lives with his family comprising 18 members in his 3 acres of farmland situated 3 kms away from the Kahipur Lilapur village of Wadnagar taluka of Mehsana, Gujarat. The main source of livelihood of the family is agriculture and animal husbandry. Commuting to the village for selling milk and procuring other essential items for daily use in domestic and agricultural practices was a regular feature. However, after the fall of dusk, in absence of street lights and lack of continuous supply of electricity in the farmland, the family members, especially the women and children faced difficulty in returning to the farm. It was also becoming increasingly difficult to tend to animals and undertake other household activities like cooking and studies of school going children. The only respite came from the kerosene lamps (fanas) which could best offer a pale localised glow. This was the situation around seven years ago (in 2005).

Mahendrabhai of a neighbouring village named Sabalpur suggested Mangaji about adopting solar technology for lighting systems. Gathering necessary information about whom to approach and how to procure the systems from Ahmedabad, Mangaji came to Ahmedabad to buy a solar lighting system for Rs 8500 (consisting of dish, converter, battery charger). The system helped operate two fans and four tube lights. No subsidy was available to set up the system. The dealer offered a warranty of three years. Mangaji and his family was happy to use the system which proved to be a boon for the next 3-1/2 years. But by the end of 2008, the solar dish was rendered non-functional. Mangaji went back to the dealer in Ahmedabad with the complaint but was disappointed to learn that since the warranty period was over, no further replacement or repairs can be done. Instead, he suggested Mangaji to buy a new solar dish worth Rs 5000.

By 2008, the scenario had changed due to the implementation of the Jyotigram Yojana. Mangaji, like others, got the benefit of high quality continuous power. In the farmlands, the farmers got 8 hours of pre announced continuous power supply. So, Mangaji decided against purchasing a new solar dish and started using conventional electricity. The battery and converter were sold for an amount of Rs 2000 to a local electrician of the village.

One of barriers in the adoption of renewable energy technology (RET) and energy efficient (EE) products is lack of awareness. People are not aware of energy efficiency and savings to be incurred in the long run. The same applies to those who build or design commercial and residential complexes and do not know of the benefits of energy efficiency performance. Dealers

may not be aware of the hitherto unexploited interest of consumers in EE products and link benefits to energy conservation.

Those who are aware of the long-term benefits and the larger vision behind adopting clean energy may not be knowing about how to go ahead, what are the next steps, where are EE products available, what are the standards to be used for comparability amongst the range of products if available, which are the leading authorised agencies, distributors, whom to seek advice from, through who and how to redesign the energy requirement for domestic or industrial or commercial purposes, what are the key indicators for cost-effective efficiency improvements (if any) and so on. While the sale of the EE products is taken care of, there may be dearth of skills in proper installation and provision of after sales services and repairs.

The reasons may be multifarious, ranging from apathy amongst the decision makers regarding promoting energy efficiency, it not being a priority for the decision makers, lack of endorsement for making energy efficiency improvements thereby deterring enlightened and informed section of decision makers to adopt reformative steps, lack of a larger vision behind promoting investments in energy efficiency and so on.

At the other end, consumers, in spite of being aware and informed, might not deem energy efficiency investments as the best use for their limited capital. Preference for shorter payback period coupled with the commodity-oriented market forces often steer away the consumers from long term planning behind decision making. Again, the high initial cost of energy efficiency investments often confines the popularity of these products and technologies to a particular class of consumers with high purchasing power. A consumer may consider repairing and continuing with inefficient Any initiative to promote RET or EE products should first, understand the needs, constraints, vulnerabilities and aspirations of consumers. They should be educated about the long term benefits, informed about the back and forth linkages, provided with easy to reach service network and offer with multiple opportunities and choices to accomplish energy efficiency.

Availability of information through authorised institutions or regulatory bodies to understand and evaluate energy efficiency investments is also important for credibility and sustainability. Wide sharing of experiences and analyses about costs and benefits, advantages and demerits of using RET across all sections of consumers is also needed for providing an informed choice to consumers equipment for many more years, in lack of viable financial support.

A successful energy efficiency programme should:

understand the end users (consumers) - their income patterns, their diverse energy needs;

link energy efficiency with livelihood returns;

provide adequate pre-sale information and post-sale services;

offer need-based products and services rather than 'one size fits all' option;

provide for doorstep financing services-aligning the payback pattern with the income pattern of consumers; and

make provisions for continuous research and development in search of innovations