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Climate Change and Energy Efficiency: Challenges and Issues in India

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INTRODUCTION

Human beings are trying to exploit the nature from the day of his appearance on the surface of the earth. Earlier he was wandering from one place to another place in search of food. Slowly and gradually he learnt various means of extracting the resources from nature for his comfort. His greed keep on increasing with the increase in population and level of technology. In his race for increasing level of comfort, he forget what he is paying back to the nature. The waste products, which resulted from the technology he used, increased in amount and their impact are felt globally in the form of climate change. Increasing average temperature, drought, outbreaks of virus and insects, declining water supplies, reduced agricultural yields, flooding, soil erosion and depleting ozone layer are some of these. The level has increased so much that human survival is threatened. As a result, the problem was realised and attempts are made to control the factors responsible for climate change at local, state, national and international level. Initially the focus was on replacing the technology and the machines responsible for increasing temperature. We were able to achieve some success in replacing the green house gas emitting appliances. Then there was a debate of developed versus developing that who is responsible, who will bring down the consumption level and who will bear the cost. But the debate remained inconclusive and still going on. Later on it was decided to find out some other ways also, increase in energy efficiency is one of the most important way out. Since by increasing the levels of energy efficiency, energy will be saved. Saving energy is equivalent to production of energy. By saving energy, the burning of fuels or consumption of other sources of energy would be saved and the carbon emission level will be brought down. India on its part set a target to increase energy efficiency level in India by adopting various measures as an international commitment. Under global compulsions, Government of India enacted the Energy Conservation Act, 2001. This act put forth a legal framework, institutional arrangement and a regulatory mechanism at the central and state level for energy efficiency efforts in India. Designated consumers, standard and labeling of appliances, energy conservation building codes, creation of institutional set up (BEE) and establishment of energy conservation fund are five major features of the Act. Standard and labeling program aims to provide the consumers an informed choice about the energy-saving and thereby the cost saving potential of the relevant marketed product. The equipments/ appliances notified are AC's. Tube lights, frost free refrigerators, distribution transformers, induction motors, direct

cooling refrigerators, geysers, ceiling fans, colour T.V.'s, agricultural pump sets, LPG stoves and washing machines. The National Action Plan on Climate Change (NAPCC) was launched in June, 2008 to address the issues of climatic change and ecological sustainability. National Mission for Enhanced Energy Efficiency (NMEEE) is a flagship program under NAPCC. The government programs launched are to be adopted by households across the country. The present paper attempts to highlight various challenges and issues involved to achieve the target of enhanced energy efficiency.

1. Challenges in the path to achieve the enhanced energy efficiency level in India: India is located in the tropical zone, the tropic of cancer divides the country into two equal halves. This results into hot in the summer and cold in the winter. The topography of the country also varied from plain to lofty mountains and coastal areas. Demographically also some parts are densely populated and in some the population is very sparse. There are various socio-economic groups and the level of awareness and accessibility to efficiency measures is highly variable. In this background the country faces number of challenges to achieve the desired level of energy efficiency.

1.1 The most important challenge is of allocation of huge funds for the implementation of these program. It is a financial burden on the funds starved Government of India. After privatisation Indian government attempts to involve private sectors in most of the programs. The energy efficiency program involves huge costs without any financial returns. Private sector investment is more in those sectors where returns are higher. So who will bear the cost is a big question.

1.2 Second challenge is with respect to its implementation. Neither the state nor the centre is going to benefit from the energy efficiency program, the question arises that who will be responsible for its implementation. In such conditions the programs are implemented with half-hearted efforts. Such type of implementation may not give expected results.

1.3 Availability, reliability and source of information about the efficiency measures is another major challenge. Availability of information regarding the efficiency measures to be adopted need to be ensured. Use of means of mass communication is required to disseminate the information, which will further increase the financial burden on government. Moreover, such information is not of personal use, so required attention may not be given to the message and the message may not be so effective. The information sent by the government will reach the households through various channels and gets modified. This may result into tweaking of information and the right message may not reached. The source of information is also very important for effective and reliability point of view. If it is left on private sector the information may be modified as per their interests.

1.4 Those who are rich and living a comfortable life may not like to lose their comfort levels. For them, their comfort is most important. United States of America, a highly rich country is a good example. Even all countries of world are not able to convince America to reduce their carbon emission levels. Similarly in India, the rich may not be as serious as the government regarding these measures.

1.5 Adoption of the energy efficiency may have a rich-poor divide. Since the measure need to replace the electrical and electronic appliances, the rich may be able to bear the cost of replacement of old appliances with new star labeled appliances. The poor may not be able to bear the cost of new appliances, so they may continue to use the older one's with low efficiency.

2.6 The typical Indian attitude of using an appliance for lifelong is another challenge. They keep on getting repaired but will not replace it even if its efficiency has decreased. This tendency is found in rich as well as poor and in urban as well as rural households. With this attitude, chances of replacing a working appliance with a new appliance of improved efficiency seems to be remote. In rural areas and in a middle class family purchasing of an appliance is a big issue, as they have to cut many of their other essential requirements. In no case, they will be able to buy a new energy efficient appliance by throwing out a working old appliance, even though the government offers some subsidy. The younger generation do believe in use and throw, and also more aware about the climate issues and efficiency issues.

1.7 The rate of acceptance and ability to adopt new technology is another big challenge particularly in rural areas. One can take an example of an electric bulb which is less efficient than tube light. In most of villages same bulbs are still preferred than the tube light. Bulb has been replace by tube light in large cities and even by latest L.E.D.'s. Once I had a chance to visit Basai Darapur, where electric bulbs were still manufactured. I enquired from him, where do you supply these bulbs as the demand has drastically decline in Delhi. He informed me that they are supplying to north-east states. Same is the case with the regulator of a fan, the older one were using copper coil to reduce the speed but consumes electricity. The new brand of fan regulators are more efficient and consumes lesser electricity to maintain the lower speed.

1.8 Another very important challenge is of maintaining the voltage of the electric current, very necessary for energy efficient appliances. With the help of transformers located at different locations, it is possible to maintain the voltage and its fluctuations in cities. But the voltage and its fluctuations are big issues in smaller towns and villages. Most of the branded appliances known for efficiency are not able to perform in low voltage and fluctuations. Many a time the fluctuation of voltage damages the appliances. In these circumstances the villagers and the town household are forced to buy those appliances which works, even if the voltage is low. The energy efficiency of these appliances is also very low. The typical example is of tube light, which will not work due to low voltage in villages and a local bulb will provide light even if the voltage is low.

1.9 Another important challenge is related with the inclination towards slightly cheaper goods. In India, people look for goods which are of lower rates, no matter they will consume more energy and pollute the environment. The latest addition to this list is the BS-III automobiles, banned by Honourable Supreme Court of India. The moment, the decision was announced by the Honourable Supreme Court of India, prices were slashed by the automobile companies, there was a mad rush to buy such vehicles. People are very much aware that the sale of these vehicles is banned after 31st March, 2017 due to their higher emission levels, even then they

purchase the vehicles. It means the vehicles will keep on polluting the environment for the next 15 years. They are least concerned about the environment and are happy to purchase cheaper vehicles. The purpose of the ban was defeated.

1.10 The highly subsidised electricity prices is another big challenge. There are cases of thefts of electricity and to some households electricity is supplied at a lum-sum amount per month. The cheaper electrical appliances, consumes more electricity for the same work as compared to energy efficient appliances. But the subsidised per unit rate keeps the bills lower, and the less efficient appliance did not pinch the consumers. A typical example is of Chinese electric appliances, which are cheaper but consumes more electricity. If the prices are not subsidised, then the less efficient but cheaper appliances will lead to higher electricity bills. This will force the consumers to buy energy efficient appliances, which are of comparatively higher prices but keep the electricity bills lower. This is applicable to rural areas and agriculture sector.

1.11 Another important challenge is of maintenance of quality and standards. It is prescribed that all the electronic appliance will be star rated by a government agency. The labeling of the stars on appliances will also be like fitness certificates issued to motor vehicles or any other license issued by government department without proper testing due to prevailing corruption. Even if the appliances is labeled as a particular star, how long the efficiency of the appliance will be maintained in Indian conditions, is a big question. There is no provision that a consumer can get it tested from some other agency for his satisfaction. It may become a game of money like pollution under control certificate issued to vehicles, no matter the level is higher than the prescribed limits.

CONCLUSION

Achieving the target of energy efficiency level in India is a big task. The shortage of funds, socio-economic conditions, typical Indian attitude, rich-poor differential rates of accessibility and adaptability, voltage fluctuation, subsidised electricity rates, availability of cheaper but less efficient appliances and rural-urban divide are big challenges. To achieve the set target, we have to overcome these challenges with allocation of funds, generation of awareness in rural masses, efforts to convince the masses, maintenance of set standards, quality checks, blanket ban on availability of cheaper but less efficient appliances etc. It needs to make it a national level program like polio eradication, to achieve the target within the specified period.

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