

ENERGY INJUSTICE

“Hiding Behind the Poor”

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[Greenpeace India recently released a survey report on the discrimination prevailing in the supply of electricity to rural and urban areas. This report “Still Waiting” demonstrates, on the basis of survey conducted in five states, that the rural India is being neglected even after 62 years of independence as far as electricity supply is concerned, and provides useful recommendations to overcome the same. The author was involved in the preparation of that report. This article is based on the main points of that report.]

The deleterious impacts of manmade climate Change as a consequence of Global Warming are no more seen as theory; they are already being experienced in many ways. The Inter Governmental Panel on Climate Change (IPCC) has listed the potential impacts of Global Warming as: famines and droughts; worldwide drop in crops; risk of flooding and scarcity of fresh water supplies; sea levels rise; huge impact on general health etc. These impacts are projected to have massive influence on the lives of millions of people living in tropical countries such as India.

Energy consumption is closely associated with substantial part of Green House Gas (GHG) emissions leading to Global Warming. Of various forms of energy electricity alone is responsible for about 42% of global CO₂ emissions and about 24% of all GHG emissions. Fossil fuel burning for generation of electricity is one of the main causes of GHG emissions.

India's low per capita electricity consumption, as also of other developing countries, is being offered as the main argument in favor of larger carbon space for India. When one considers the fact that for about 40% of such a large population the commercial energy is out of reach even after 6 decades of independence the gravity of the situation becomes crystal clear. If the governments aims to provide energy security to the growing population in a business-as-usual scenario, the pollution level in the country will be enormous. As per Greenpeace's projection India's contribution to the global CO₂ emissions will increase from about 1,126 million tons in 2003 to approximately 4,039 million tons in 2050, increasing its share in global emissions from 4.8% to 8.7% in a business as usual scenario.

While it may appear logical that India should argue for common but differentiated responsibilities for each country to reduce country specific GHG emissions, its own record of energy consumption by two broad categories of citizens should be of grave concern. Energy profligacy by the rich and lack of access to commercial energy for the poor within India should be of a major concern. India has a primary obligation to its own people to do all that is possible to minimize the impact of climate change. As per Greenpeace report “Hiding Behind the Poor” much of India's population, which is in lowest income group, have per capita CO₂ emissions of about 335 kg, while a small section of the population with the highest income group have per capita CO₂ emissions of about 1,500 kg.

The Integrated Energy Policy as developed by the Planning Commission has projected that “to sustain a growth rate of 8% through 2031-32 and to meet the lifeline energy needs of the poor, India needs, at the very least, to increase the power generation capacity to nearly 800,000 MW from the current capacity of about 160,000 MW inclusive of all captive power plants.” In this context it is important to note that more than 70% of such additional capacity is projected to be coal based. Hiding Behind the Poor, the successive governments have

embarked on a major capacity addition drive based on fossil fuels and dams since last few decades.

Such a large scale addition of conventional power capacity in a short period will have profound impact on social, environmental and economic aspects of the society. The massive amount of coal burning; the large requirement of fresh water and land to support this much of additional power capacity will not only devastate environment but will also push the vulnerable sections of the society to destitution, because of displacement, lack of fresh water and threat to livelihood.

While India is asking for adequate Carbon space for its poor to develop, it is finding it impossible to provide electricity to its poor through the business-as-usual model, even though huge sums of money are being poured in additional conventional technology power stations. Whereas the middle and upper classes of its population are rapidly catching up with the high per capita electricity consumption levels of the developed countries, the poor and the vulnerable in rural areas are yet to get even the life line electrical energy.

Greenpeace India undertook a study recently to expose the electricity injustice within India. To compare the electricity supply scenario in rural and urban populations, relevant data were sought from 5 different states from four regions of the country. In each of these states one tier A city, one tier B city, and three villages were chosen for survey in this regard. None of the 15 villages covered in the survey were found to have 100% electrification. Even in those villages, where the official records indicate more than 50% electrification of households, the supply is so bad that the per capita electricity consumption is abysmally low. Most of the villages covered in the survey have per capita electricity consumption less than 100, which almost negates the very purpose of electrification. Most states consider one unit a day as the lifeline energy requirement for a family.

The worst part of such a poor supply to the villages is that there is neither a regularity nor it is provided when the people need it most. Generally the power supply is provided in the afternoon hours and late night hours, when it is not of much use for the villagers. Additionally, the low voltage conditions and frequent interruptions make the electrification a cruel joke on the villagers.

This pathetic situation of villages is in stark contrast with the capital cities and urban areas, which have almost 100% electrification and enjoyed 22 to 24 hours of much better quality supply. This objective survey of the villages, under the title "Still Waiting", has revealed that with 100% household electrification and 24 hours of supply each of these villages can attain a much better quality of life style, drastically reducing the need for urban migration and slums.

In Karnataka between 1999 and 2009 the available power capacity has gone up by 70%; energy consumption has gone up by 95%; per capita consumption has gone up by 76%. But 356 villages remained *unelectrified*.

In Maharashtra between 1999 and 2009 the available power capacity has gone up by 54%; energy consumption has gone up by 54%; per capita consumption has gone up by 32%. But 5,018 villages remained *unelectrified*.

In Uttar Pradesh between 1997 and 2009 the available power capacity has gone up by 58%; energy consumption has gone up by 53%; per capita consumption has gone up by 6%. But 12,298 villages remained *unelectrified*.

About 40% of the entire population in India, almost all of which in rural areas, are still without access to any commercial form of energy including electricity. Even few households

in a village, having electrical connection, get power supply only during some parts of the day. Whereas the demand and supply of electricity to towns and cities have been increasing at a tremendous rate, the rural areas are unable to meet even their basic needs for lighting and agriculture.

The total installed generating capacity in the country has gone up from 58,012 MW in 1989 to 1,52,148 MW in 2009, a whopping 162% increase. Total monthly generation from conventional sources has increased from 43,596 MW in March 2000 to 65,057 MW in March 2008, an increase of about 50%. National per capita electricity consumption has gone up from 283 kWh in 1992-93 to 429 in 2005-06, an increase of 52%. But 40% of the households, mostly in rural areas, have no access to electricity even in 2009.

A thorough analysis of the power sector in the country provides real reasons for this gross neglect of rural areas. Huge inefficiencies prevailing in generation, transmission, distribution and utilization of electricity are at the root of the larger problem. These inefficiencies alone, which are typical characteristics of a badly managed grid based centralized electricity generation system, amount to a total loss in the range of 25-40% of the installed capacity. Few effective measures such as improving the generating plant performance; reducing the T&D losses; minimizing the wastage in usage; demand side management (DSM); energy conservation have all tremendous potential to overcome the deficits.

Inherent with a grid based centralized generation system are the need for long lengths of transmission lines, complex network of distribution systems, and the associated equipment such as transformers. Each of these add to the complexity, reduced reliability and increased capital & operational costs. These centralized generation systems also are found to be economical only with large size power plants and concentrated loads. But Indian villages are widespread and cannot provide any substantial loads individually as in the case of towns and cities.

The centralized generation/distribution model has inherent problems attached to it in terms of equity also. In a case of power shortage it will be the rural poor that are suffering. The poor is the last to get power (Last In) and the first to get shut out of power (First Out). Clearly the present model is not the best way forward in any welfare society.

Whereas the grid based centralized generation system has failed to meet the basic energy needs of the majority of the country's population, who are living in rural areas, few recent initiatives in the private sector to provide electricity to un-electrified villages through stand alone community based non-conventional energy power plants fed by bio-mass OR wind OR solar OR micro-hydel power have established that they are the appropriate solution to the energy requirements of most sections of the country. The major advantages which are associated with these alternatives are the shorter gestation periods, low societal impacts, and their immense suitability to rural needs.

There is clearly an urgent need for a paradigm shift in government's energy policy: instead of blindly adding millions of MW of additional capacity based on conventional power sources and centralized power supply system, what is needed is to adopt an 'integrated energy resource management' approach which will have renewable energy sources and decentralized supply systems at its core.

There are growing indications that in view of the huge societal costs associated with economic, social and environmental aspects of grid based centralized generation system of conventional power sources, the decentralized electric supply systems based on renewable energy sources are hugely economical in the long run and the best option for the accelerated electrification of rural households.

A thorough review of the existing practices in the way power sector is managed will reveal that there is huge scope for improvement before one can catch up with the world best practices: whether it is in improving the generating plant performance, OR reducing the T&D losses; OR minimizing the wastage in usage, OR demand side management (DSM); OR energy conservation. Adequate funds should be made available to realize this potential before 2015 to enable peaking of GHG emissions in the power sector.

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In summary, an objective overview of the electricity scenario in the country provides a sad picture of electricity injustice of huge proportions, which is not leading to the welfare of the rural communities. Unless urgent corrective measures are taken to set right this injustice the overall development of the country will greatly suffer, while accelerating the addition of GHG emissions against national as well as global interests.

Grid based centralized generation system is considered by the successive governments as the solution for faster economic growth and accelerated rural electrification, but in reality the same is observed to be helping largely to meet the ever growing electricity demand of urban population. The deficiencies, complexities and costs inherent in the grid based centralized generation system in India cannot provide any assurance that the rural-urban divide will be eliminated soon and that the electricity supply at the national level will be satisfactory in the near future. The decentralized energy solutions are the right answers to provide quality access to electricity to the rural population.

The poverty alleviation, rural electrification, decentralized electricity supply system based on renewable energy sources, human development, mitigation and adoption to Climate Change are all intricately linked and hence need to be addressed with an integrated approach. □□□

[The complete report can be downloaded from Greenpeace website :
<http://www.greenpeace.org/india/press/reports>]