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ORIGINAL ARTICLE

ENERGY POVERTY IN INDIA - AN EMPIRICAL STUDY

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Abstract:

The governments and people of rich industrialised countries are currently preoccupied by what many perceive to be an 'energy crisis'. Rising global oil prices, concerns over energy security, and the urgent need to address climate change, are putting energy at the centre of public policy. But another energy crisis is affecting the lives of billions of people in developing countries, and it is largely being ignored. Here, it is going to discuss about energy crisis in India in details.

KEYWORDS:

Poverty ,energy crisis , Empirical Study , health facilities.

INTRODUCTION

The hidden crisis of energy poverty condemns billions of men, women and children in the developing world to continue to live in absolute poverty because they have no access to modern energy services; energy which is taken for granted in the developed world at the flick of a switch or the press of a button. Over 1.6 billion people – almost one third of humanity – have no electricity. This means they have no light in the evening, limited access to radio and modern communications, inadequate education and health facilities, and not enough power for their work and businesses. Worldwide, more than 3 billion people depend on dirty; harmful solid fuels to meet their most basic energy need, cooking. 2.5 billion Cook with biomass (i.e. wood, dung and agricultural residues) and over half a billion cook with coal. The international community recognises a number of basic rights: the right to water, the right to food, the right to health, the right to adequate housing, the right to gain a living by work and the right to take part in cultural life. Missing from this list is the right to energy. Yet, everyone needs energy to cook food, to heat the home, to earn a living, to benefit from good health and education services. Energy poverty denies people a basic standard of living which should be available for all. To fulfil the right to energy for everyone the biggest challenge lies in providing access to energy for the poorest sectors of the population— those without capital, capacity, knowledge and influence; those whom private sector energy suppliers are not interested in serving. For this reason, and if they are serious about eradicating poverty and meeting the Millennium Development Goals (MDGs), international development agencies, donors and governments in low-income countries need to make energy access for the poor a priority.

ENERGY POVERTY

Energy poverty can be defined as the lack of adequate modern energy for the basic needs of cooking, warmth and lighting, and essential energy services for schools, health centres and income generation. Only 15% of the population in Africa has electricity and in South Asia this figure rises to only 40%. One quarter of the 2.5 billion people cooking with biomass live in Africa; almost one third live in China and another third in South Asia. Most of the countries which are currently off-track on the MDGs are those with less energy access. Achievement of all of the MDGs has been limited by energy poverty across

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the developing world. This lack of access to efficient modern energy has a significant impact on economic development and small-scale enterprise, educational opportunities, infant mortality, drudgery for women and quality of life. Not all energy poor people live in rural areas. Low-income people in urban and peri-urban areas also suffer from lack of access to energy services, and their numbers are likely to increase. It is predicted that almost 60% of the world's population will be living in urban and peri-urban areas by 2030, and services there are not expected to grow commensurately.

The MDGs – can't do it without energy currently, organisations such as UNDP, the World Bank, and the European Commission have recognised the strong link between energy access and seven out of the eight MDGs. Most now agree that achievement of the MDGs is dependent on adequate energy access for the poor. The UNDP states that "None of the Millennium Development Goals can be met without major improvement in the quality and quantity of energy services in developing countries". In April 2001, the ninth session of the Commission for Sustainable Development (CSD) concluded: "To implement the goal accepted by the international community to halve the proportion of people living on less than US$1 per day by 2015, access to affordable energy services is a prerequisite." There have been attempts to establish internationally agreed energy targets and indicators, through processes linked to the MDGs, such as the CSD. Targets have also been suggested at UN high level meetings.

Recommended measures to be taken in order to achieve the MDGs include:
Enabling use of modern energy for 50% of those who at present use traditional biomass for cooking.
Enabling access to reliable modern energy services for all urban and per urban poor.
Providing electricity for all schools, clinics, hospitals and community centres.
Enabling mechanised power for all communities.

The International Energy Agency (IEA, 2005) has recommended that the number of people without electricity should be reduced to 1 billion, and the number of people reliant on traditional biomass reduced to 1.85 billion, by 2015. However, there has been a complete failure to agree any international targets, strategies, programmes or action towards reducing energy poverty globally.

Barriers and the way forward

The current dominant development model is focused on achieving macro-economic growth. This results in a predominance of attention to and investment in large-scale energy infrastructure to provide energy for growth (i.e. large scale coal, large hydro, transmission grid, and pipelines). Much of the infrastructure for energy in developing countries is for the export of energy to industrialised countries or urban centres, not for local use.

There is a need to redress the balance, with much more attention and investment directed towards the supply of local energy services for poverty reduction in local communities. National development strategies will need local energy delivery (local grid, fuel distribution, renewable energies, etc.) alongside large-scale infrastructure development.

Funding Gap

The energy needs of the poor are small, but small amounts of energy can make a significant difference to their lives. However, the great majority of people without adequate access to energy live on less than US$2 per day, making it difficult for them to access good services, including access to modern energy services. Energy access is not without cost and the initial expenditure on connections (electricity) or better technologies can be high. There is a large funding gap in providing energy access for the poor which has not been seriously addressed by existing financial mechanisms and financing institutions. Political will and the commitment of governments is also urgently needed to prioritise investment in energy as critical for development of the poorest sectors. An estimated US$435 billion would be required to provide electricity to all of the population presently un-served. An estimated investment of US$135 billion would enable about 50% of the population currently cooking with solid biomass to switch to other fuels, and provide access to efficient and clean cooking for those that that will remain on solid biomass. Compared to current energy sector spending, the cost of delivering energy to meet the needs of poor people is only about 2.85% of total global energy investment. This has to be funded by international aid, multilateral financing, climate change financial mechanisms, governments and local private sector investment.

While the private sector will definitely be one of the key players in financing energy for development, it is essential to remember that private investors aiming to maximise returns would not be

attracted by the idea of providing energy access to the poor – unless subsidies or other financial incentives are in place and unless clear policies on tariffs and risks are set in advance. Over the past 30 years the international community has continually failed to make headway to reduce the number of energy poor. The approach has either not focused on actually delivering the needs of the poor, so the benefits have gone to wealthier groups, or has been unsustainable and driven by short term donor requirements.

Lack of sustainable models

Existing policy frameworks and national energy policies in developing countries often do not respond to the needs and capacities of the poor. Similarly, energy technology research, development and transfer do not respond to the energy needs and capacities of the poor. The sustainability of energy access for the poor has always been one of the greatest concerns: that is, the continuous supply of reliable energy services, long after the original energy access programme has ended. Poor sustainability of decentralised energy systems has created mistrust in them from planners, policy and decision-makers, hindering the wider uptake of options that could provide energy access for the poor. In urban areas it is frequently the case that after just a few months of connection to electricity, poor people stop using it. Despite the regular supply of kerosene, natural gas and LPG, people continue to use wood or biomass residues or charcoal. In rural areas, small energy generation systems, installed to provide electricity to small villages or communities, frequently last a few months before being abandoned. Similarly, large numbers of projects for the dissemination of efficient stoves have not changed the use of three stones from being a common practice. Such situations have been understood as 'unsustainable energy access for the poor', and are caused by the original programme not addressing the underlying problems associated with poverty and household cash flow, lack of technical capacity and institutional support.

Climate change agenda by-passes the poor

For the billions of people struggling with energy poverty, access to clean, and affordable energy services is a higher priority than climate change. There has been a tendency to exclude some energy mixes and technology options on the basis of carbon emissions and their impact on climate change, promoted mainly by those who are unaware that providing access to energy for the poor would entail a low level of emissions. In the worst case scenario for energy supply – using fossil fuels for 100% of electrification and 100% of cooking for the poor – the total increase in emissions would be as little as 2% of present world emissions. Therefore developing countries should have an allowance to provide energy access for the poor, and that allowance should be divided within each country according to the energy needs of the poor, excluding other energy needs such as transport, commerce, industry, and mining.

Access to modern energy

Access to basic modern energy services means the ability to satisfy basic energy needs through the use of reliable, efficient, affordable and environmentally friendly modern energy services. It is important that a full energy mix should be considered for poor communities, such as grid and non-grid solutions for electricity supply, liquid and gas fuels for cooking and biomass wherever it is appropriate; with different emphasis according to location and opportunities. For urban inhabitants, grid extension for electricity supply and liquid and gas fuels for cooking are the most appropriate solutions, though in many cases biomass for cooking in smaller towns may still be required. For rural inhabitants, the most appropriate options may be a combination of grid for those living close to the transmission lines, with decentralised renewable energy options (including micro hydro, solar PV and small wind) for off-grid electricity supply. For cooking in rural areas, biomass is likely to remain the main fuel option for the majority, but using more efficient and cleaner cooking devices. Modern energy services include electricity from the grid, decentralised renewable or diesel generators, and efficient cooking methods including improved biomass cook stoves, bio fuels, kerosene or LPG. Practical Action has shown there are sustainable models for energy service delivery to the poor, which require a clear focus on those people in energy poverty with long-term programmes involving capacity building, appropriate technologies and affordable financing.

Available and possible energy options

Simple and effective technologies are available to deliver clean and efficient energy to energy poor communities, both in remote rural settings and in towns and cities. Alongside conventional means of rural electrification and fossil fuels (such as LPG or diesel generators), decentralised technologies which

use local energy resources – technologies such as micro hydro power, improved cook stoves, wind turbines and solar power – can effectively supply the energy necessary for poverty reduction. Over the past thirty years Practical Action has pioneered these technologies, and demonstrated how they can change the lives and economic opportunities for some of the world's poorest people. While solar PV is useful for some specific applications, such as battery charging, lighting and communications, it should be noted that solar PV is not the only solution for off-grid electricity access. It can also be costly and provide a limited power supply. Overemphasis on the provision of solar PV, driven by international multilateral corporations, has meant that other viable and cost-effective technologies – such as small scale wind, micro hydro and biomass, which can be locally developed and manufactured – are hugely neglected and seem to 'fail' because there are limited resources available for their development beyond the pilot phase.

Sustainable solutions

Reaching the poor with basic modern energy services to help deliver the MDGs would increase global commercial energy consumption by about 900 TWH (Terra Watt Hour) each year, which is less than 1% of global energy demand. However, achievement of the MDGs is not just a question of increasing the quantity of energy produced in a country, but the delivery of that modern energy to the people who need it most. The long-term sustainability of energy access programmes for the poor has been one of the most important issues during the last three decades, especially with regard to small decentralised energy systems for rural electrification and access to efficient biomass cook stoves. Practical Action has used a straightforward strategy of identification of barriers, and the proposition and implementation of solutions. Through this strategy Practical Action has addressed the issues of affordability and sustainability of energy services and technologies for the poor. Practical Action believes that besides the conventional involvement of the private sector in energy businesses, there is a good opportunity for the mobilisation of small private resources and local capital towards increasing energy access for the poor. As well as companies, the private sector is made up of small farmers and local traders, who are looking for investment opportunities in small local businesses. If a level playing field existed, they could also consider the potential business opportunity of energy supply, and they could reach the poor and the isolated more effectively than conventional private energy investors or government. However the mobilisation of local capital is only possible with strong, long term commitment from governments and development agencies, enshrined in regulations, incentives (subsidies), and support for local capacity and energy literacy amongst energy consumers.

Strategy for delivering access to basic modern energy for the poor

The strategy for energy access should focus its attention on energy access for the poor as a global issue, necessary for the attainment of the MDGs.

The main issues to be tackled on energy promotion for the poor are:

Recognising the right to energy despite the common acceptance of multilateral, bilateral agencies, governments, academia and civil society that energy is critical for development, energy is not a high priority issue in policy debate. There are no specific objectives or targets within the MDGs on energy access. Therefore modern energy, being a critical issue for human development, should be considered a basic right, and should be provided on the basis of justice for the poor.

Political willingness from governments there is sufficient evidence that important changes will only be possible with political willingness at the highest level. The market approach is not the right one for energy access for the poor -governments have to consider it as their responsibility.

The funding gap on energy access for the poor. It is clear that there is a huge funding gap, which could not be paid by the poor, especially for initial investments. Comparing this with the huge investment on energy security, reducing energy poverty represents only 2.85% of the total investment required on energy security by 2030; however compared with the real money currently available for energy access this amount is large. New funding mechanisms and sources need to be found.

Clear and specific pro-poor policies and strategies. The experience of the last three decades shows that neither global nor country strategies have been clear enough to tackle energy poverty. New pro-poor strategies for energy access, linked to the delivery of the MDGs, need to be implemented rapidly.

Sustainability of energy access to achieve sustainable delivery of energy to the poor.

The following main activities should be promoted widely and vigorously:

a) The creation of local capacities (national and local) is the most effective way to ensure affordability, accessibility and sustainability
b) Mobilisation of local capital can contribute to energy access for the poor
c) Energy literacy can contribute to the sustainability of the systems and improve relations between provider and user of energy.

Allowance of greenhouse gas emissions to provide energy access for the poor Energy for the poor should use all of the energy mix available, assessed on the basis of sustainability, cost and availability rather than on contribution to climate change.

Alternative climate change mechanisms. The most important existing financing mechanisms such as the CDM, the GEF and the climate change funds of the World Bank, should be regularly assessed against their real impact in addressing energy poverty and ensuring access to energy for the poor. A new mechanism should be developed which can transfer increasing amounts of the growing carbon market funds towards projects which directly reduce energy poverty.

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