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Research Paper Management

Study of Management of Energy Resources Towards Energy Sustainability

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ABSTRACT

In the country, poor people and people in marginal areas presently depend on natural resources like wood, charcoal and, dung to provide energy for cooking and heating. By 2030, the number of people in this category is expected to rise from 2.4 billion to 2.6 billion. The result will be greater local competition for traditional energy. The environmental and social impacts of biofuel production, which continues to grow throughout the world, vary depending on the context. There is rising energy security concerns, mounting energy needs and environmental sustainability are the key drivers for policy making in Indian region. The region is the most populous in the world, Asian region constituting around 61 percent of the world population, and currently one of the fastest growth centres with a contribution of around 26.7 percent of the global output. Energy ultimately has become the major thrust area in the policy portfolio of the economies of the region in order to maintain the current growth momentum.

The paper made endeavored to discusses rising concern on energy security and sustainability. It indicates assessment of various energy related policies directed towards achieving the sustainability concerns of the Indian region. It also discusses some management issues on resources and its application towards energy sustainability, so as to help in making new policy.

Keywords: Natural resources, Traditional energy Policies on energy security, Energy efficiency and renewable energy.

Introduction:

Today, access to sustainable energy is recognized as a key factor in sustainable poverty-oriented development. On the one hand, energy services such as cooking, heating, lighting and communication are central to improvement of social well-being. On the other hand, energy services used for production and transportation are indispensable to economic progress. Two developments will influence the availability of and access to energy in the future. Energy consumption is increasing markedly, despite improved energy efficiency, primarily in the industrialised countries. Careful estimates indicate that energy use will double in developing countries in the next 20 years. The use of substitutes for fossil fuels is increasing, accelerated by rising oil prices. Renewable energy, particularly biofuels, is becoming increasingly important. Consequently, experts predict that today's petroleum based society will be transformed into a bioenergy-based society in this century.

Energy Services in Rural Areas: Provision of energy services to poor people in rural, frequently sparsely settled areas is a particularly challenging and multifaceted task. How can energy are provided to rural areas in ways that promote development, address poverty, and protect the environment. These issues cannot be addressed only at local levels. Rather, environmental changes, market and power politics at the global level, as well as institutional competence, economic potential and resource availability at the national level, shape the conditions for solutions at the local level. Poor people and people in marginal areas, above all, presently depend on natural resources (wood, charcoal, dung) to provide energy for cooking and heating. (Kanagawa & Nakata, 2004) By 2030, the number of people in this category is expected to rise from 2.4 billion to 2.6 billion. The result will be greater local competition for traditional energy. The environmental and social impacts of biofuel production, which continues to grow throughout the world, vary depending on the context. Substitution of biofuels for fossil fuels will have positive impacts, primarily in relation to reduction of greenhouse gases and possible recultivation of degraded areas. As a cash crop, biofuels also represent a new source of agricultural income. But there are many questions about the extent to which smallholders will be able to profit from this new market. At the same time, there is a great risk that cultivation to produce biofuels will accelerate soil degradation, overexploitation of water, and loss of biodiversity, and also compete with food production, thereby endangering food security. Global climate change, caused by the burning of fossil fuels, has many adverse ecological impacts on people's livelihood. Growing demand for energy will exert increased pressure on natural resources in future, thereby posing a threat to the multiple services provided by ecosystems. (ITDG 2004)

Energy Vs Social Development Poverty: Almost 1.6 billion people in developing countries have no access to electricity. Approximately 85% of these people live in rural areas. Current projections indicate that this number will decline by only 100 million by 2015. 2.5 million people particularly women and children, still die annually of diseases of the airways, because traditional fuels impair the quality of the air in their homes. Electric light, modern means of communication, and access to new media enhances opportunities for education. Cooking and heating with modern sources of fuel or electricity improves health and reduces workloads, above all for women and children. This explains how modern energy can significantly improve living conditions and hence help to reduce rural exodus. Access to energy services is an important instrument for empowering poor people and disadvantaged population groups and thus for fostering equity. Accordingly, calls to designate access to sustainable energy as a human right are growing louder. If energy production does not keep pace with growing demand, there will be an increased risk that poor people, particularly in rural areas, will find it even more difficult to gain access to electricity and modern fuels. (Kanagawa & Nakata, 2004)

The increase in the global market price of fossil fuels is a burden not only on individual household budgets; it is above all a burden on the budgets of many developing countries,

amounting to as much as 10-30% of their gross domestic product. The economic and social impacts harbor a potential for conflict that should not be underestimated. Moreover, higher fossil fuel prices diminish the financial options for promoting future oriented energy projects in rural areas. Sparse settlement and long distances make energy in rural areas more expensive. This imposes economic limits on the concept of central power plants that guarantee a countrywide energy supply through a national grid. Access to modern energy enables agricultural development and the development of productive economic sectors in rural areas.

Efficient Approach to Energy Supply: The many interactions involved demonstrate that sustainable energy production requires trans-sectoral, integrated approaches and an appropriate institutional framework. Accordingly, the following discussions can play a decisive role in rural development. Promotion of locally available renewable energy to meet basic electricity needs. Decentralised production units are appropriate wherever locally renewable sources of energy are available and where connection to a central power plant is too costly. Together with promotion of renewable energy, this will contribute to environmental protection at the local, regional and global levels, while also saving costs. Generation of value added and income for local populations through the productive use of energy. Value added is usually a condition for sustainable operation of the economic energy system. Sale of local energy for example, hydropower fed into the national power grid can constitute an additional form of income for local people, if the production unit is owned by the community. Priority must be given to social infrastructure such as schools, health-care facilities, and community centres and above all, by disadvantaged groups. Problematic structural conditions make sustainable energy policies difficult in developing countries. Unclear and competing responsibilities among ministries, as well as lack of cooperation between government, non- governmental organisations and donors lead to overlapping and inefficient planning processes. Diversification of supply is made more difficult by the powerful political position of national suppliers and by subsidies for electricity and fossil fuels. Moreover, large-scale energy projects are susceptible to a certain degree of corruption. Especially when they are financed by foreign investors, such projects can sometimes be burdened with foreign exchange risks and contribute to indebtedness. (ITDG 2004)

Including, all stakeholders, particularly disadvantaged groups, in development of national energy policies. This makes it possible to assess the long-term energy needs of industry, agriculture, the transport sector, rural and urban households, etc. Joint negotiation of goals and priorities will help ensure ownership of the policies developed. This includes, for example, the presence of independent authorities to monitor liberalisation processes, standardisation and quality control, regulatory models for granting concessions, etc. Promoting public-private partnerships that protect also the interests of consumers to the local population. (Wayman, 2006)

Sustainable Approach: Including all local stakeholders' women and men makes it possible to assess local demand like energy needs, type of organisation, financing, etc in detail as sustainable approach. It is important during this process to distinguish among different needs for households, local production purposes, and social infrastructure, and to determine short- and long-term demand in each area. What type of energy (mechanical, thermal, electric) is required for what purposes (cooking, heating, powering machinery, lighting, etc.), and at what time of day and year? A detailed analysis of energy needs also provides the basis for demand-side management and can improve the use and efficiency of energy production facilities. Locally available knowledge can be applied, local construction materials used, and existing production capacity developed further. In addition, existing distribution structures can be activated to disseminate such things as energy-saving stoves and solar home systems. (Wayman, 2006) Access to credits for start-up investments, method of payment, maintenance costs, etc. must also be taken into account. Use of proven technologies and their continued adaptability to local conditions has been shown to be more sustainable than use of the most innovative technologies. At this point, it is necessary to benefit from the experience of regional and international centres, working groups, and energy programmes, and to promote South-South cooperation. Capacity development and motivation of local actors as the agents of technological change are prerequisites for project sustainability. It is important that rural and often decentralised energy projects are able to provide reliable supplies of energy for the long term. This is more likely to succeed when responsibility is delegated to local decision-makers, sustainable operational and maintenance structures are in place. Training for local personnel and for management responsibilities is indispensable. Exit procedures for supporting organisations must be determined and made transparent from the outset.

National poverty-oriented energy programmes should be developed in accordance with the same considerations as local projects. Efforts should also be made to develop synergies with other rural development projects. In this way, for example, irrigation projects could benefit from water power facilities. Other aspects are important as well. Realistic and transparent assessment and comparison of both the costs and the benefits of different technological options at the onset are needed. With respect to poverty alleviation, the main aim is to assess how benefits are distributed and who profits from which technologies. Specific incentives may be needed to develop energy systems. Indirect subsidies from urban consumers should be considered in order to cover the sometimes higher costs of rural energy supply and to reduce supply disparities. (Wayman, 2006)

Conclusion:

We know that the use of substitutes for fossil fuels is increasing, accelerated by rising oil prices. Renewable energy, particularly biofuels, is becoming increasingly important. Consequently, experts predict that today's petroleum based society will be transformed into a bioenergy-based society in this century. We know that sustainable energy production is one of the primary aims of the Nation. Efficient use of energy with the aim of reducing greenhouse gas emissions is the theme of the Kyoto Protocol to the UN Framework Convention on Climate Change. The Convention assigns responsibility for sustainable energy primarily to individual countries. For the past 10 years the UNDP has increasingly promoted energy projects as the key to sustainable development. The World Bank and the International Monetary Fund advise developing countries to take account of the linkage between improved national energy policies and poverty reduction in their Poverty Reduction Strategy Papers (PRSP). Nonetheless, in virtually none produced so far is energy mentioned as a significant factor in poverty alleviation. This plan can provide our nation in building energy sustainable. Sustainable energy production is one of the primary aims of the Nation and can be aliviate with discussing various issues as stated above. The paper discusses these issues and also recognised that its development goals can only be realized with improved energy services to rural and poor part of the country.

REFERENCES

[1]. http://www.inforesources.ch/pdf/focus06_2_e.pdf | [2]. http://www.indg.in/rural-energy/rural-energy/sources-of-energy-1 | [3]. Powering Poverty Reduction, ITDG position paper for renewable-2004, | [4]. Kanagawa M. and Nakata T., "Socio-economic impacts of energy poverty alleviation in rural areas of developing countries", 25.9.2006. | [5]. Wayman, S. (2006) " Energy for rural areas: A multifaceted task Pathways to rural energy supply". | *** | |