



**United Nations
Environment Programme**

Distr.: General
01 February 2006

English only

**Global Civil Society Forum
Seventh Session 5-6 February 2006**

Comments on ministerial consultations on energy from a global perspective

By The Energy and Resources Institute

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Energy for sustainable development
Recommendations to Ministers by Civil Society Organization

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In

Dubai (February 2006)

Executive summary

Energy has been a catalyst of the world economies. It is one of the basic prerequisites towards increasing the standard of living. The developed countries addressed the energy issues and underwent the process of industrialization whereas most of the LDCs (least developed countries) and the developing countries are still struggling to fulfill even their basic energy needs. Ironically, these different phases of development have serious impacts on the environment.

According to *World Energy Outlook, 2004*, International Energy Agency (IEA), the world energy demand will increase by 60%. However, there will be 1.4 million people in the world without access to electricity. The dependence on traditional biomass will also increase by 2030. It is estimated that the developing countries need to manage about five trillion dollars in financing for electricity generation, transmission, and distribution.

At present, though the causes for concern may be different for the developed and developing countries as far as meeting the energy needs is concerned, but there is an urgent need to work towards a common goal – to develop a perfect mix of *energy, environment, and sustainable development*. The major issues to handle for the developed nations are proper planning towards implementation of the demand-side management, research and development on newer technologies such as hydrogen and fuel cells, sound waste management, and sustainable mobility. The developed nations need to reduce consumption of energy and use more environment-friendly technologies. The provision of modern energy to the poor people, financial management towards creation of energy

infrastructure, and a clear-cut policy on subsidy are the tasks that the developing-economy countries in transition need to focus upon.

Introduction

Energy is the vehicle of development that has provided a new dimension to the whole world through a process of industrialization. There exists a strong nexus between *energy–environment and development*. The environment in which we live changes continuously due to the *natural causes* over which we have little control (Goldemerg J,1996). Volcanic eruptions, earthquakes, etc., are a few of them. But now more cases of environmental changes affected by humans are emerging. It is imperative to have a good balance between the use of energy for development and environment as inefficient use leads to greenhouse gas emission causing ecological imbalances. Today, we need to have a clear policy and strategy towards use of energy, failing which along with deterioration in the living standards we might also invite more brown cloud, haze, floods, draughts and the melting of glaciers, which may threaten the very existence of many of the SIDS (small island developing states) and other low-lying areas. Agenda 21 also highlights the issue: “major cause of continued deterioration of the global environment is the unsustainable pattern of consumption and production, particularly in the industrialized countries, which is a matter of grave concern, aggravating poverty and imbalances.”

Oil has been the prime source of fuel in the world except in the Asia-Pacific and the former Russian federation where coal and gas, respectively, have been the dominant fuels. An increase in the oil prices has a direct negative impact on the GDP (gross domestic product) of the poorest countries. Absorption of the fluctuating prices needs a robust economy, something that most developing and LDCs (least developed countries) are found lacking. Most nations are at different stages of development on the energy front. The concern is more on energy efficiency in the developed countries whereas most of the developing countries and LDCs have a long way to go as far as provision of access to modern energy is concerned.

Future scenario

There are about 2.4 billion people who still rely on traditional biomass for cooking and more than 1.6 million people still do not have access to electricity. The situation is not going to change much in future as well. As per the *World Energy Outlook 2004*, by the year 2030, 1.4 million people will still lack this modern energy facility mainly in South Asia and the sub-Saharan Africa. The world energy will be up by 60% with fossils fuels still being the dominant energy mix.

Though the MDGs (millennium development goals) do not mention about provision of energy explicitly, modern energy services are prerequisites for meeting all goals. In order to address the MDG on halving the one-dollar income barrier by the year 2015, we need a 200-billion-dollar investment towards providing electricity (*World Energy Outlook, 2004, IEA*). The link to poverty reduction was clearly identified by the *WSSD (World Summit on Sustainable Development)* in the JPOI (Johannesburg Plan of Implementation).

Possible measures for provisioning of energy for sustainable development

Energy is an overarching issue that needs to be dealt with diligently by governments to ensure sustainable development. Governments should focus on providing modern energy services, especially electricity. Energy planning should not be done in isolation rather, along with the other related ministries for rural development, agriculture, and industry. A consortium of this nature with a common focus on development will make the process cost-effective, avoiding overlapping activities.

The rising demand of energy needs huge investments. According to *World Energy Outlook 2004*, from now to 2030, the developing countries need to manage about five trillion dollars in financing for electricity generation, transmission, and distribution. Governments need to make the environment conducive for private players to pitch in as public money is limited in most developing countries. However, it has been found that market-oriented reforms have had a limited impact on the poor as private players do not find this segment lucrative. Against this backdrop, governments should ensure that private investment is sought first to create an enabling infrastructure for access to

electricity for poor people and then privatize the operations and maintenance. However, to keep private parties motivated to continue investing, governments would need to compensate service providers.

Further, governments should ensure that the state-owned companies should also be on an equal footing with the private companies (IEA 2004).

Big power-generation projects attract investment by the private players that do not provide solutions to the unelectrifiable areas because of the topography or are not cost-effective to be connected through the grid. Governments should encourage investment by private players in renewable-based decentralized distributed power generation.

Technologies such as solar photovoltaic, biomass-based gasifier, micro hydro, wind, etc. can be promoted.

It is estimated that by the year 2030, the total number of people relying on traditional biomass for cooking and heating will increase by 9.8% (base year 2002). The rising dependence on biomass will also have a detrimental effect on the environment. In order to address this problem, governments need to take the following steps: (a) improvement in efficiency of the use of fuel wood for cooking and cookstoves, (b) capture CO₂ at source, and (c) afforestation. The government should focus more on promotion of commercial use of captured carbon (like dry ice for food storage) that would create a win-win situation.

A subsidy approach followed by governments should be well-targeted at the poorer sections. The BPL (below poverty line) families only should be subsidized through special programmes limited to a certain time period. Subsidy should be used for promotion of renewable energy technologies and increasing efficiency while using conventional forms of energy. Similarly, tax incentives and financial assistance can be provided to promote entrepreneurs and users in the renewable field.

Most of the worldwide use of oil is in the transport sector. The transport sector will account for 54% of the global primary oil consumption in 2030 compared to 47% at

present. In India, 52% of the population uses public transport, which is abysmally low in the USA at 3%. A law regarding greater use of public transport is needed by governments. They should take up major public awareness programmes in this regard. They should have a clear road map for the use of biofuels in the transport and allied sectors like irrigation. A clear-cut strategy on the percentage of blend of ethanol and biodiesel in liquid petroleum is needed following Brazil and USA's experience. Governments should promote flex-fuel cars that could run on gasoline, ethanol, or any blend of the two.

Research and development in the field of engine modification allowing more percentage of ethanol and biodiesel to be added to liquid petroleum is needed. Governments should also take up research on potential technologies, such as hydrogen and fuel cells in a concrete manner with definite allocations for the same. A joint research by nations in this field will minimize the cost and time of innovation in this field.

The world electricity demand will see a 100% increase by 2030. Coal-based power plants have the largest share, with 39% of the global electricity needs, whereas the share of non-hydro renewables is a mere 2%. The latter needs special attention by the governments, especially in the developed countries who can afford to have renewable-based power-generation units. Further, the process of electrification should include a reliable electricity infrastructure at the local level, enabling quality power. Governments should set a tariff that would be profitable for the service provider. There is a clear need for multi-stakeholder partnership so that the needs of the poor are also addressed. Subsidy in the sector should be borne by the government and not by service providers as the latter might hinder the sustainability of electrification.

Questions

There is a great role that the civil societies can play in improving the situation in the energy sector. Access to modern and clean forms of energy promoting sustainable development has some bottlenecks that need to be discussed and addressed properly. The burning questions before us are as follows:

- How to ensure that planning for energy is not done in isolation? How overlapping of activities by different ministries can be restrained and a synergy be evolved?
- How to manage two conflicting issues, especially in the developing countries and LDCs: going for a green growth where majority of the population still lacks basic energy services?
- How to mobilize resources to create access to modern energy services, given the background of rising energy insecurity and economic instability due to rise in the oil prices.

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