DISCUSSION NOTE

Environmental Aspects of Power Sector Development in India

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This note was written in 2000 to feed into the ongoing debate on the restructuring of the power sector environmental assessment and monitoring systems in India.

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The EIA Process in India

- The requirement of getting environmental clearances and, therefore, conducting an environmental impact assessment, was introduced in India only in 1978, and that also more as a matter of policy than a statutory requirement. It became a statutory requirement only in 1994, with the necessary modifications in the rules of the Environment (Protection) Act (EPA) of 1986.

- From 1978, all thermal power projects and hydro-electric dams were required to get an environment clearance from the Department of Science and Technology (DST), before they could be posed for investment clearance to the Planning Commission. The DST accorded environmental clearances based on an environmental impact statement (EIS) prepared by or on behalf of the project proponents and assessed by the National Committee on Environmental Planning and Co-ordination (NCEPC).

- In 1980, the Department of Environment was formed and the responsibility of according environmental clearances was transferred to it. In the same year, the Forest (Conservation) Act was notified and under this act any diversion of forest land for non-forest purposes had to be cleared by the Government of India. From 1980 till 1985, the Department of Forests and Wildlife in the Ministry of Agriculture had the responsibility of according forest clearances for forest lands to be submerged or otherwise diverted.

- In 1985, the Ministry of Environment and Forests was set up and both the Department of Environment and the Department of Forests and Wildlife became a part of this new Ministry. Since 1985, it is this ministry which has the responsibility of carrying out an environmental impact assessment and giving both the environment and forest clearances. However, as already mentioned, though forest clearances were legally mandatory after 1980, environment clearances became legally mandatory only in 1994.

- For many years now, the environmental appraisal committees (EAC) each for thermal power projects and river valley projects, set up by the MoEF, perform the function that was originally performed by the NCEPC. The EAC is composed of expert members from both within and outside the government. Traditionally, the chairperson has been a non-official. Since 1994, it has been specified in the rules that the Chairperson must be "an outstanding and experienced ecologist or environmentalist or technical professional with wide managerial experience" (EAP rules).

Unfortunately, in the recent past there has been a tendency to appoint retired government officials as chairpersons, some of whom might have the prescribed qualifications but many do not.

- The EAC assesses the impacts of river valley projects, based on the EIS prepared by or on behalf of the project proponents. The EAC also visits some of the project sites. Based on all this, it recommends to the MoEF whether a project should be unconditionally cleared, cleared with conditions or rejected. Even before the final recommendation is made, it advises the MoEF on what further information or undertakings are required from the project authorities and assesses the information and undertakings so provided. However, it is essentially an advisory committee whose advice can be rejected by the MoEF, or by the Government.

- Similarly, there is an advisory committee to recommend cases for forest clearance.

- In January, 1994, the rules of the EPA were amended to make public hearings a mandatory part of the assessment process. However, within a very short time the rules were again amended to make such hearings optional, replacing the word 'shall' with the word 'may' in the operative sentence. In 1998, public hearings were once again made mandatory by a further amendment of the EPA's rules.

Some Issues Relating to the Assessment Process

- A lack of assessment till 1978

- Appropriateness of Environmental Impact Assessments

There is a general paucity of data, especially credible independent data, on environmental aspects relevant to the assessment of projects. There are Botanical and Zoological Surveys in India, and a Ministry of Environment and Forests along with state departments of environment and forests. However, despite this, detailed information on terrestrial and aquatic ecosystems for almost all of the potential impact areas are not available in advance of the project being proposed. Therefore, much of the data required are collected after the project has been proposed and the environmental impact assessment initiated. This results in at least the following problems:

- As the environmental studies are usually initiated very late in the day, there is a tendency to hurry them along so that the environmental clearance and the consequent completion of the project are not delayed. Considering that data have often to be collected from scratch, this results in the use of unscientific methodologies and a resultant inadequate assessment. Unfortunately, there is no system by which basic environmental parameters are studied much before the project is posed for clearance or as soon as potential sites for projects have been identified.

- These studies are done at the cost of the project proponents and are a part of the project cost in the calculations regarding the economic viability of the project. This

results in a tendency to try and do them as cheaply as possible, thereby cutting corners and compromising on quality.

- The project proponents are interested in getting their project cleared as soon as possible and with the least costs. Consequently, there is pressure on project consultants to produce a report that either shows no adverse environmental impacts or suggests very cheap and usually ineffective methods of mitigating these impacts. The problem is exacerbated by the fact that the MoEF and its EAC have little ability to independently verify these reports and the data they contain. They can, at best, check up superficially on a few aspects or refer the matter back to the same consultants to review the data provided. This also results in delays in the assessment process that, in turn, makes the MoEF susceptible to criticism and to pressure for early clearances.

  Unfortunately, there is no system by which the financing of environmental studies can be done by an independent institution like the Planning Commission and debited on a fixed percentage basis to project cost, thereby freeing the project consultants from pressures by the project authorities.

- Lack of Retrospective Assessments

There has also not been any retrospective assessment of projects. Though it might no longer be possible to fully assess many of the adverse impacts, especially those on terrestrial and aquatic biodiversity, many of the other impacts could be assessed even today.

The lack of such assessments makes the task of assessing the overall impacts of projects on the environment very difficult. It is also a wasted opportunity to learn from past experience. Consequently, even today, many of the impacts assumed and the mitigative measures planned have little experiential basis.

- Political and Administrative Pressures

The process of environmental impact assessment has been subjected to political and administrative pressures almost from the start. Pressure is brought upon the professional project consultants to prepare EISs in a manner such that the project is cleared. Pressure is brought upon the EAC to recommend the clearance or rejection of projects. Also, the MoEF or the Government of India rejects recommendations of the EAC, without assigning any reasons.
Many well known cases, for example Kayamkulam in Kerala.

- The ability to Enforce and Monitor Conditions

Projects are cleared either unconditionally or with conditions.

For both types, it is essential to monitor that their environmental impacts are within the anticipated limits, that the preventive and mitigative measures proposed by them or

stipulated by the MoEF are being carried out properly and in time, and that they are having the anticipated affects.

The MoEF must also have the willingness and capability, as is implied by the law, to withdraw environmental clearance from, and thereby stop construction of, projects where the prescribed environmental conditions are not being complied. It must also have the willingness and ability to scrap projects, even after their initiation, if they prove to be environmentally non-viable.

The ability of the MoEF to monitor compliance to the stipulated conditions is limited. It is expected to monitor this through its regional offices which, in turn, rely mainly on the returns submitted by the project authorities themselves. And even this system of monitoring has come up only in the last five years or so.

- Lack of standards

To draw any final conclusion on the impact of power projects on the environment becomes difficult because there are no standards prescribed, specifying what levels of environmental deterioration are acceptable. How much of the environment can be allowed to be destroyed, and for how much of power? These questions have not yet been answered in India.

However, what does emerge clearly is that:

- Most of the possible environmental impacts of power projects were not assessed adequately in the past and even today, though things have improved, much still needs to be done.
- Even in retrospect, there has been no effort to assess the actual impacts that these projects have had on the environment, for most of the parameters.
- The adverse impacts of power projects on the environment, judging from international experience and the few case studies available in India, are significant and mostly irreversible.
- The preventive and mitigative measures that could have been taken to safeguard the environment have mostly not been taken.
- Certainly the financial, economic and social costs and benefits of the environmental impacts of power projects have not been computed while assessing the economic viability of most projects, including recent ones.

Lessons to be learnt

- Perhaps the major lesson that should be learnt is that projects should not be initiated before a comprehensive environmental impact assessment has been carried out and the project has been determined to be environmentally, socially and economically viable. If projects are initiated without such an assessment, there should be a legal provision to prosecute the concerned individual who has allowed the construction to start. A similar provision exists in the Forest (Conservation) Act of 1980 where the

concerned forest officer can be imprisoned if he allows the diversion of forestland without the clearance of the Government of India.

- Another lesson that should be learnt is that there need to be clear and transparent standards prescribed for the assessment of projects. In the absence of such standards, even where environmental impact assessments are carried out the determination of the viability of the project becomes a matter of arbitrary opinion.

- Whereas for air and water pollution, standards have been fixed and one can assess whether an activity or project is viable from the point of view of pollution, the same is not true for most other aspects of the environment.

- What perhaps is required is a two pronged approach. First, basic standards of sustainability must be formulated. They follow from the avowed policy of the government of India to pursue a sustainable path of development.

- The minimum viable populations for species and the minimum unit area for each ecosystem type can be determined. Species and ecosystems can be prioritised and given weightage. No project can be allowed to reduce any species or ecosystem below its minimum viable population or area, locally, regionally and nationally.

- A trade off mechanism can be designed. Subject to the parameters already described, the inevitable environmental degradation caused by a project must be compensated elsewhere by regeneration of degraded ecosystems or heightened protection.

- Secondly, all possible environmental impacts, beneficial and adverse, need to be fully assessed prior to the clearance of the project. All those adverse impacts that can be mitigated or reduced, must be so planned for, and the cost of mitigation and reduction taken into account while appraising the project. This would, for example, include the use of fly-ash. In addition, the costs of regenerating and protecting the areas agreed on as a part of the trade off must also be included in the cost of the project.

- The monitoring of environmental parameters must be rigorously undertaken during and after construction. Any unanticipated costs or additional costs due to the ineffectiveness of the mitigative or preventive measures must also be borne by the project and channelled to environment regeneration and protection. Similarly, all unanticipated benefits must be credited to the project account. All these conditions must operate without compromising the basic principles of sustainability, as described earlier.

- The planning of projects cannot and should not be done in isolation. It has to be a part of the larger economic, social and environmental plan for the region and the country. The process for deciding whether a project should be built in a particular location and with particular specifications, should be a part of the process for deciding how to provide goods and services to the people of a region and to help solve some of their main problems.

- As a first step, possible locations of projects must be identified well before they are actually selected for a specific project and an environmental impact assessment of the potential site should be carried out.

- Consequently, a shelf of sites must be available at any given time that have been assessed and cleared from the environmental angle for power projects of different sizes, specifications, fuel mixes, etc.

- The process of initiating an EIA along with project appraisal or initiation must be discouraged.

- At a later stage, the country should be zoned in terms of environmental vulnerability and the activities allowed in each zone must be specified. This would lead to a system where the level of appraisal, the clearances required and the investments necessary for protecting the environment would differ from zone to zone and technology to technology. This would go a long way in making it easier for entrepreneurs to set up their facilities while safeguarding the environment.

- The major responsibility for ensuring that environmental standards and safeguards are being met would, then, be of the project proponents. The system would be based on a high level of transparency and stringent punishments for wilful violations. Public involvement in monitoring the environment, based on their right to information and a sharing of the fines imposed on the project, would be the cornerstone of this system.