Ad Hoc Energy Policies and Strategic Decisions: Role of Environmental Impact Assessment in Energy Planning

By

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Abstract:

Energy planning in Pakistan is a complex issue that involves multi stakeholder. Though these stakeholders are various government institutes responsible for planning and implementation but the lack of coordination among them makes the process defective. Due to the energy crises that the country has been going through since 2008, most of the decisions for energy production, distribution and conservation are taken on ad hoc basis which is further worsening the situation. In order to overcome the unsustainable system of energy planning, it is high time that the government incorporates the principles of sustainability through recognizing the environmental and socio-economic aspects of such plans. This paper highlights the issues of energy planning and current energy situation in the country. Furthermore, the paper highlights the importance of environmental assessment at individual project level, its strength and weaknesses and discusses the prospects of incorporating strategic environmental assessment as a tool for sustainable energy planning.

In 1998 the Government of Pakistan made a decision to establish 150 compressed natural gas refueling stations and convert 100,000 vehicles to CNG. The decision was taken on ad hoc basis without anticipating the future consequences of this shift in energy source. The motive behind this shift was availability of CNG as an indigenous energy source and the price difference between petrol and CNG. Today, Pakistan is among the top ten countries where vehicles use CNG as a driving fuel. After fourteen years the scenario has changed. Today the dwindling sources of CNG have forced the government to implement CNG load shedding for at least three days a week throughout the country. Price difference between petrol and CNG is narrowing down fast and the apprehensions over the availability of the energy resource are yet another dilemma. This is a classic decision of ad hoc energy planning in Pakistan.

Before discussing the issues surrounding energy production and distribution let's first have a look at the institutional set up for energy generation and distribution. The institutional setup for energy planning is complex and confusing. As many as six government ministries are responsible for Pakistan's national energy policy which includes the Ministry of Water and

Power, the Ministry of Finance, the Ministry of Planning, the Ministry of Petroleum and Natural Resources, the Ministry of Science and Technology and the Alternative Energy Development Board besides, Pakistan Atomic Energy Commission and the Private Power Infrastructure Board also provide input in national energy policy planning (Charles, 2011). In addition to these government institutions there are few others that operate simultaneously at different quarters of legal, administrative or technical phases in energy planning. The existing institutional set up of energy planning creates many obstacles in sustainable and consistent decision making. First and foremost, absence of institutional coordination between the multiple institutes at federal level as well as at provincial level creates a gap in the process of making effective decisions. The powers and legislative authorities provide overriding effects to certain institute over the others hence rendering decisions void. Pakistan, since its inception had been depending upon five year plans for energy which were subjected to constant political turmoil. It was not until 1997 when Pakistan came up with its first ever consolidated and solicited energy policy. The overwhelming energy demand and governments failure to meet this demand led to the promulgation of energy security action plan in 2005. The main recommendation of this action plan was to enhance energy supply through integrated resource utilization. In addition to the action plan, the government published a report titled "National Energy Conservation Policy 2005" which laid guidelines and actions for energy conservation and increasing energy efficiency of the existing system. It also provided for the establishment of an Alternative Energy Development Board which was a unique initiative in the history of Pakistan for exploitation of alternative resources for energy production. The board launched its nascent renewable energy policy in 2006. Alternative Energy Development Board was established as an autonomous body with an aim to promoting and facilitating alternative forms of energy resources to achieve the government's deployed targets of energy production. The energy policy was subsequently revised in April 2010 and new inputs were made towards the objectives and new plan of actions were suggested.

Looking at the supply and demand scenario of energy in Pakistan it cannot be ignored that energy deficit is rapidly increasing. The total energy supply in 2007/008 was 62.92 MTOE with dominant fuel being natural gas (48%)and oil as the close second (31 %), the remaining 21 % of energy was obtained from sources like hydroelectricity, coal, nuclear electricity and imported electricity. On the other hand the consumption patterns for the same year shows that industries were the main recipient of energy with their share being 43 % of total energy produced. Transport, domestic, commercial agriculture and activities other than these received the remaining share of energy. Even though energy production shows a growth of 7 per cent per annum since 2002 till 2007 yet it is lagging by 4.8 per cent per annum due to factors like system-wide technical and distribution looses. Energy deficit in 2010 was 19 MTOE which was about 26 per cent of the energy requirement. The demand deficit increased substantially by the

year 2012 to a massive 60 per cent of the year total energy requirement. A look at the domestic energy resource potential reveals that natural gas is the dominant fuel in the country.

The "Medium Term Development Framework 2005-10" drafted by Planning Commission of Pakistan's has projected total energy requirement at a GDP growth rate of 6.5 percent per annum as 198 MTOE in 2025 which is fourfold increase compared to the total energy requirement in 2005. The projected deficit will be 122 MTOE or 62 per cent of the energy requirement (Tariq, 2010). The three domains where energy is used are production of electricity, transportation and generation of thermal energy for heating and/or cooling. These are the areas which require constant supply and disturbance of supply to any of the domain would greatly damage the socioeconomic fabrication of society. The major challenges linked to energy utilization are, firstly, issues related to enhancing energy efficiency and secondly lack of understanding of the intricate environmental link between energy and environment.

The main reason behind failure of energy plans and policies in Pakistan is political destability which consequently destabilized the policy initiative taken by preceding governments. Pakistan energy plans have been operating on interim basis. Since 1947 as many as seven five-year plans were formulated which could only envisage the future demand and supply issue for a specific period of time. None of the government could anticipate the growing demand of energy against the booming population. Besides, the economic growth in Pakistan has been exceptionally well with a GDP growth rate of 7 percent since 2000 (Economic Survey of Pakistan, 2009). The energy system could not sustain the rapid industrialization. Corruption is another major challenge in the energy sector. In addition, the instantaneous decision by government are also rejected widely and openly, case in point the Prime Minister's announcements during energy policy 2010 that markets should be closed after 8pm and Saturday was declared as a weekend. Both these decision were strongly rejected by the masses. The government also doesn't have any guidelines in place for attracting foreign investments. Delayed implementation of energy projects and theft are other major reasons of current energy crises in the country. Lack of institutional coordination and absence of an autonomous body for to look after energy affairs solely is also a drawback which weighing down the already deteriorating energy sources.

Furthermore, there are considerable weaknesses in Pakistan's energy planning with no systematic attempt to undertake integrated processes. Most projection in Pakistan with the exception of electricity have relied on the interpretation of historical growth and failed to include sustainable supply, conservation, efficiency targets and effects of technological advancement as well as investment requirement. In addition the process is affected by inadequate stakeholder participation, lack of continuity in representation, corruption and insufficient integration of social and environmental issues.

Energy planning is a complex process and requires multi stakeholder involvement right from policy making to energy production, distribution and any other related activity therein. The sustainability dimension of energy planning which include economics, social and environmental dimensions are diverse yet intricately woven to complement each other. Responsibility to watch over the environmental aspects lies with the Environmental Protection Agencies in Pakistan. The EPAs under the Environmental Protection Act 1997 are obliged to conduct environmental assessments. Under this act any person who plans to start a project in any geographical location of the country has to undergo an environmental assessment which would give a detailed overview of the potential impacts. The environmental report also has to contain a chapter on environmental management system for the proposed project with a defined monitoring and evaluation mechanism. The act is further complemented by Regulations for IEE and EIA 2000 which explains the minute details of EIA review process at the EPAs. PEPA, 97 also gives a direction to the EPAs to issue sector wise guidelines as and when necessary. Once a proponent submits an environmental report to the EPAs, they review the report for its environmental compatibility and depending on the quality of justifications provided; issue an environmental approval to the proponent. This entire practice is carried to ensure environmental safety along with taking care of the human health concerns.

Though the current environmental legislation provides a thorough consideration to environmental sustainability at individual project level, however the dilemma is that such assessments do not necessarily make any contribution towards sustainable energy development. It also neglects the social and economic dimensions of sustainability arising from the proposed project. Considering the significance of environmental act, individual projects planned to produce or distribute energy also undergo an environmental assessment. But it there is an increasing apprehension among the environmental conscious segment of the society that environmental impact assessment is used merely as a project justification tool rather than a project assessment tool hence reducing the possibilities of bringing significant alterations to the proposed project design. Besides, in most cases projects are consequence of decisions taken at policy and planning level and it becomes difficult at the lower hierarchy of decision making to alter or deny any such decisions.

Considering the weaknesses that environmental assessment studies have to confront at individual project level, it would be commendable to shift the assessment studies towards policy and planning stages. It is a common practice that policy objectives are achieved through designing systematic activities. When policy objective that sets short term medium term and long term targets are subjected to sustainability assessment the outcomes are more realistic and target oriented. Strategic environmental assessment is a comparatively new technique which has never been employed in Pakistan before. International Union for Conservation of

Nature and Natural Resources is struggling to incorporate this technique of assessment in the existing system of environmental decision making (NIAP, 2009).

According to the National Research Council (US) strategic analysis stimulates and compares the effects of policy option to the outcomes of continued current policy. This is a useful tool in assessing the energy trends, anticipating emerging policy issues and developing policy interventions to address those issues. Strategic environmental assessment or SEA introduces a two stage EIA (Alan, 1995) and initiating two stage public inquiries into particularly complex schemes where the first inquiry is a policy and need inquiry while the second is site specific inquiry. SEA might ensure sustainable decision making at the policy, planning and programme level but the significance of EIA at a later stages of individual project implementation cannot be ignored. The parameters that could be included in the SEA of energy planning in Pakistan would essentially be those with a macro affect. For example an SEA could consider forecasting energy demands in all forms. It could consider the components of programs according to source of energy and provide economics of choice. The environmental and social choices can be considered while contemplating any specific source of energy. The issues relating to production, distribution and consumption of energy as well as efficiency in terms of economics along with social viability must be considered in any SEA. Future prospects and integrated use of resources needs to be considered as well. An integrated approach of strategic decision making would considerably increase the effectiveness of EIA at project level.

Deeming the positive impacts that a strategic decision-making process could have on the energy planning system it is necessary that the government changes the current method of ad hoc decision making. This would reduce the burden off the government's already packed shoulders and it will also help the decision makers to pursue energy production in a more effective and sustainable manner.

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Ms. Abida Ayub works as an EIA-Expert with the International Union for Conservation of Nature and Natural Resources (IUCN) Pakistan under its project National Impact Assessment Programme (NIAP). Under this project, IUCN, Pakistan is intending to coordinate with EPAs all across the country to improve the system of environmental impact assessment as well as

introduce the relatively new concept of strategic environmental assessment in the planning and decision making process.

Bibliography:

- E., Charles K., (2011), Energy and Security in South Asia Cooperation of Conflict, The Brookings Institution, Washington DC, USA, pp 61-72
- Economic Survey of Pakistan 2007-2008
- Economic Survey of Pakistan 2008-2009
- G., Alan (1995) Environmental impact assessment (EIA): Cutting edge for the Twenty first century, Cambridge University Press, UK
- H., Tariq, (September, 2010), Pakistan's Energy Sector Issues: Energy Efficiency and Energy Environmental Links. The Lahore Journal of Economics, 15:SE, pp33-59
- National Research Council, US, (1992) The National Energy Modeling System, Committee on the National Energy Modeling System, Washington DC, USA
- Pakistan Environmental Protection Act, 1997
- Pakistan Environmental Protection Act, Regulations for IEE and EIA, 2000