

Present Status of NPP in Bangladesh

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Abstract

Energy is central to sustainable development and poverty reduction efforts. It affects all aspects of development -- social, economic, and environmental -- including livelihoods, access to water, agricultural productivity, health, population levels, education, and gender-related issues.

Bangladesh with its large number of populations and also worst affects of Climate Change, is struggling hard to meet these Millennium Development Goals. None of these problems can be met without quality and quantity of energy services.

But presently Bangladesh is in a state of serious energy crisis.

Access to electricity is one of the lowest in the world,

coverage today stands around 30% of the total population.

In recent years the crisis has become so severe that uninterrupted electricity supply is seldom met and even in the capital city there is about five to six hours blackout every day.

As the availability of other sources to ensure the demand of larger energy supplies and greater efficiency of energy use is limited so Nuclear Power Plant may be one of the options of meeting at least part of the demand.

In its National Energy Policy Bangladesh has included Nuclear Power Plant as one of the potential energy sources.

So, present status of NPP in Bangladesh should be analyzed to assess the progress and to identify the problems where International co-operation and supports may be needed.

Introduction

About 65% of its energy demand has been met from traditionally available biomass fuels. Reserve of fossil sources in Bangladesh other than gas is considered negligible.

Due to lack of other indigenous energy resources, Bangladesh has become a gas dependent mono energy based country.

Natural gas accounts for **70%** of the total commercial energy consumption and about 90% of the total electricity generation. But reservation of natural gas is limited and if it is used at the present rate would result in complete depletion within couple of years. Country's Hydro potential is very limited.

However, **coal reserve** of the country is expected to meet a portion of the future incremental demand which is not at all environmental friendly source. Considering the limitation of imported fossil fuels and at the same time as nuclear power is recognized as a safe and clean energy, contributes to mitigate climate change effects and air pollution, it could be considered as an alternative option for the mid to long-term energy security of the country.

Actions Taken for NPP

In fact to cater the huge demand of energy the proposal for building a Nuclear Power Plant in the then East Pakistan was first conceived in 1961 in Rooppur, the western zone of the country.

Since then a number of feasibility studies were conducted each of which established that the project was technically and economically feasible. But the project could not be implemented due mainly to political problems.



Proposed Rooppur Power Plant Area

Following liberation, in 1978-79, the then government of Bangladesh took a bold decision to implement the project, reviewed the feasibility study but the endeavors were also in vein.

The latest feasibility study was conducted in 1986-87 and in the National Energy policy of 1996 Rooppur Nuclear Power Project (RNPP) was identified as an important component of the long-term generation mix of the country.

In 1992 a Cabinet Committee headed by the Honorable Head of Government was formed to expedite implementation of the project.

Several meetings of the Implementation Committee were held, opportunities were tried to explore private sectors for implementing the project but could not be succeeded.

Later in 2000 Bangladesh Nuclear Power Action Plan (BANPAP) was approved recognizing the need for a proper institutional framework with adequate financial and administrative power that can either itself and/or through a joint venture with others, build and operate nuclear power plants.

According to BANPAP, until a separate institutional framework for nuclear power projects would be established, Bangladesh Atomic Energy Commission would carry out all responsibilities of implementing the project together with international obligations related to implementation. The Ministry of Science and Information & Communication Technology would work as the Focal Ministry.

The responsibilities of different ministries was identified and provisions were made for built-in-mechanism for linkages with other relevant government agencies having the mandate for power purchase, its transmission and distribution as well as to integrate the nuclear power projects into the overall electricity generation planning.

Meanwhile the Site Report was updated to Site Safety Report following the review by IAEA and Draft Bid Invitation Specification Document was prepared in 2003.

However, Government of the People's Republic of Bangladesh again has expressed its firm commitment to implement the RNPP project.

But this time with growth in demand and grid capacity a much larger plant looked feasible. In the Draft of National Energy Policy (2007) the necessity of two units of medium size NPP within the year of 2015 and 2017 has been identified.

Bangladesh Atomic Energy Commission proposed two 500 MWe nuclear reactors quoting likely costs of US\$ 0.9-1.2 billion for a 600 MWe unit and US\$ 1.5-2.0 billion for 1000 MWe. Though Russia, China and South Korea showed interest initially but only Russia in March 2009 made a formal proposal to build 600-1000 MWe nuclear power plant at Rooppur. In May 2009 a bilateral nuclear cooperation agreement was signed with Russia.

But it is to be mentioned here that the inordinate delay in project implementation has brought to a need of a number of changes in the planning processes. The data, information and studies of the previous Site Safety Report should be upgraded and reviewed and some additional studies are needed.

These are (i) load flow study (ii) river flow study (iii) comprehensive seismic study (iv) meteorological study especially for tornado, cyclone and tsunami according to Site Safety Criteria as per IAEA guidelines are to be carried out.

However, the International Atomic Energy Agency (IAEA) has approved a Technical Assistance Project for Rooppur Nuclear Power Plant to be initiated between 2009 and 2011, and it now appears that an 1100 MWe plant is envisaged.

Though time to time governments of Bangladesh took initiative to implement the NPP project but could not be succeeded as the major stumbling block was lack in terms of Capital Investment - non-cooperation for large scale investment in energy development by the major donors and/or multinational banks.

It is hoped that if this time the country can able to move steadily forward with these two proposed plants based on cost effectiveness, the security of electricity supply will increase significantly. Addition of another two units of 1000 MW(e) by 2025 will further ensure the security of energy supply in the country.

Conclusion

Along with the energy crisis, climate change poses a major threat to sustainable development of Bangladesh. It has now to face a lot of serious problems along with the threat of submerge of the low-lying lands and increase salinity.

To rehabilitate the huge population of the low-lying areas job opportunities through establishing a large number of small industries and other business entrepreneurships should be created in different cities situated in higher areas.

Continuous electricity supply is one of the pre-requisites of these projects. In spite of its vulnerability Bangladesh has not had much international support yet.

So international bodies and donors should come forward so that this time the initiative of establishing the first NPP in Bangladesh does not fail.



Rural areas of Bangladesh



Village near the sea



Fishing in the sea



Farming



Planting



Children of Rural Areas



Small Boat in Bay-of-Bengal

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