increased growth in heavy industry and production of commercial products, including fertiliser.

For reference, the USA has a population of 300 million, and consumes 21 TCF of gas to meet only 23% of her yearly energy requirements, and 1 billion tons of coal to produce an additional 23% of the energy needs. According to one projected estimation, Bangladesh will require about 100 to 150 TCF of gas or its equivalent up to the year 2050. It is obvious that Bangladesh will not have any gas left beyond 2020 (or earlier) to meet the energy demands. The question is, what other alternative sources of energy can Bangladesh turn to?



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Coal plays a vital role in the energy mix throughout the world. So far, a total of 2.7 billion tons of coal have been discovered in five fields in Bangladesh. About 1.4 billion tons are recoverable, which is equivalent to 37 TCF of natural gas, and can generate electricity for about 30 years beyond 2020. India, for example, has a coal reserve of 92 billion tons, which is enough for over 200 years at the current rate of consumption; yet India imports about 37 million tons (1 TCF of gas equivalent) every year.

Bangladesh is an energy-starved country, and all of her fossil fuels (gas and coal) reserves have to be exploited to achieve national energy security; she simply cannot afford to export any of her discovered energy resources. If Bangladesh mines all its recoverable coal and uses it for generation of electricity, then the country can achieve energy security for about 30 years or so.

Coal is used to produce a huge amount of electricity (up to 68% in India and 80% in China), and can play an important role in the energy mix of Bangladesh in the future. However, before Bangladesh can proceed with coal mining, there are several important issues that need attention. Coal is a dirty fuel, and if not done properly, coal mining can negatively impact on the landscape, soil, surface water, groundwater, air, and human health during all phases of exploration and use. Therefore, strict regulations and enforcement of laws are essential during all phases of coal mining.

Currently, Bangladesh lacks proper environmental rules, regulations, acts, policy, standards, institutions, and expertise to deal with all the phases of coal exploration, monitoring of environmental degradation that can result from coal mining, and compliance with the environmental laws. Since Bangladesh does not have prior experience in coal mining, a proper legal framework that will guarantee transparency, accountability, monitoring of environmental health, and compliance, is virtually non-existent.

Bangladesh can learn from international experience, both positive and negative, of coal mining. India and the US, for example, have been involved in coal mining for over 200 years. Both of these countries have developed a well-defined legal framework to deal with various aspects of coal mining. Coal is a nationalised resource in India, and Coal India Limited is the overseeing entity.

As a part of national capability building, Bangladesh should create a similar organisation. There are several acts, rules, and regulations directly applicable to coal mining in India, including the Mines Act 1952, Coal Mines Regulations 1952, Mines and Minerals (Development & Regulation) Act 1957 (with amendments), and Coal Mines (Conservation & Development) Act 1974. In addition, the Indian constitution provides necessary directives and powers to frame and enforce environmental legislation. The State Pollution Control Board (SPCB) of India requires a mandatory public hearing before environmental clearance is issued for coal mining.

Similarly, there exist numerous acts, rules, and laws in the US to deal with all phases of coal mining, and the most important one coal is the Surface Mining Conservation and Reclamation Act (SMCRA) of 1977. The SMCRA has five major components, namely standards and performance, permitting, bonding, inspection and enforcement, and land restrictions to mining. The Office of Surface Mining Environmental Protection Agency (OSMEPA) and various state agencies are involved in making rules, monitoring standards, and compliance with the standards by coal mining companies, and enforcement of laws.

Despite strict rules, regulations, and laws, severe damage to the environment was done by open-pit coal mining in both India and the US. For instance, the state of Pennsylvania in the US is the fourth largest coal mining state, which has been practicing mining using various methods for over 200 years.