



## The Rampal coal power plant in Bangladesh: The vulnerable threat of black carbon

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### ABSTRACT

This is a policy paper to re-voice of an eco-nationalistic social movement. The Rampal coal fired power plant is one of the deadliest projects in Bangladesh according to the UNESCO. It sits beside the largest mangrove forest in the world. The preservation of this great mangrove forest is not only compulsory for the survival of plants and animals but also mandatory for the human livelihoods surrounding the forest. It is important not to forget that the most diverse effects of using of the black carbon in the power plant will rob the lives of plants and animals and livelihoods of working class people creating ecological as well as social catastrophe with regards to food, shelter, and health. Therefore, the environment protection organizations of Bangladesh must aware of 'who are the ultimate sufferers of the Rampal coal-fired power plant' to re-rise a stronger voice against the plant portraying a public supported eco-nationalistic social movement.

### INTRODUCTION

Bangladesh and India, two neighboring countries, have built a joint coal-fired power plant in Bangladesh with a productivity of 1320MW electricity only a fourteen-kilometer away from the Sundarbans (Mahmud et al., 2020). The Sundarbans is the largest mangrove forest in world and situated in the south-west part of Bangladesh and south-east part of India with a 10,000 square-kilometer area of land shared by the two countries. The Sundarbans has a diverse influence on balancing eco-system, bio-diversity and natural resources of Bangladesh.

In addition, it has a large contribution to the agrarian economy of Bangladesh. According to Bangladesh Bureau of Statistics, around 120,000 people are directly dependant on the Sundarbans for earning their livelihoods estimated in 2018. Moreover, approximately three million people are indirectly dependant on the blessings of the Sundarbans. Scientists and environmentalists

predict that the coal-fired power plant will bring intolerable effects on the environment hampering the bio-diversity and eco-systems of the Sundarbans deteriorating the livelihoods of lower income people who are completely dependent on the mangrove forest. Meanwhile, Bangladesh undergoes a high threat of submergence of its coastal areas due to the rising temperature in the atmosphere for the global carbon emission. As a result, a good number of people living in the coastal areas will become homeless, landless and jobless losing their inhabitancy, infield and employment. Moreover, several acute diseases will spread out in the surrounding locality. Plants and animals will completely lose their place of existence.

This policy paper starts with a concise description of the subject matter on the Rampal coal fired power plant. Then, it discusses the relevant theory in the light of power practice at the Rampal coal fired power plant project. The following part explains the environmental and social impacts of

this deadly project and finally this policy paper calls for an eco nationalistic social movement with concluding remarks.

## METHODOLOGY

This reviewed article is written in qualitative method through analyzing secondary data (i.e books, journals, scholarly articles). Selection of these data has been done through three steps. Firstly, the social, economic status and health related issues of the people living nearby the Sundarbans were identified through reviewing scholarly literature. Secondly, the impacts of constructing the Rampal power plant on the environment of the Sundarbans were cross-examined through arguments of previous research works. Lastly, data on the Rampal project have taken from the “Bangladesh-India Friendship Power Company” website.

### Rampal coal power plant

The Rampal power station, also known as the ‘Maitree Super Thermal Power Project’ is a 1320-megawatt (MW) coal-fired power station at Rampal in Khulna, Bangladesh (Mahmud et al., 2020). It is sponsored by the ‘Bangladesh-India Friendship Power Company’ (BIFPCL). Bangladesh and India have formally signed an agreement to build the Rampal coal-fired power plant at a net cost of 200 million US dollar (Misra and Mookerjea, 2017). The contract was signed between National Thermal Power Corporation of India (NTPC) and Bangladesh Power Development Board (PDB) (Anurag, 2007). The Exim Bank of India will provide 1.49 billion US dollar as a loan for the construction of the power plant (Misra and Mookerjea, 2017).

On the contrary, environmentalists claim that the plant will release various pollutants and toxic gases such as carbon monoxide, carbon dioxides, nitrogen and sulfur dioxide to the surrounding environment. They estimated that around 142 tons of toxic sulfur dioxide and 75 tons of toxic nitrogen dioxide will be emitted every day from the plant (Chiari and Zecca, 2011). The plant at Rampal in Bagerhat can disrupt the food chain in the eco-system of the world’s largest mangrove forest (Anas et al., 2018). In addition, the

increasing emission of pollutants from the plant will cause rise in temperature in the atmosphere presenting Bangladesh as a contributor of pollutants in the global pollution nexus.

### Black carbon: the fueler of the Rampal plant

Black carbon (BC) is a type of aerosol that is composed of carbon dioxide produced from the combustion of fossil fuels (coal, petrol, diesel, kerosene or natural gas) which create the ‘Atmospheric Brown Cloud’ (a layer of air pollution containing aerosols such as soot or dust), is driven by north-easterly monsoon winds across the Indian subcontinent to the Bay of Bengal and the Arabian sea, plays a significant role in catastrophic global warming (Guo, 2020).

The black carbon is a non-renewable fuel, decomposed plants and other organisms, buried under the layers of sediment and rocks, have been extracted to deposit the carbon-rich regime including coal, oil and natural gas that supply 80% of the world’s energy (Taylor, 2016). These fossil fuels are made in the process of anaerobic decomposition in the absence of air by burying dead trees leaves, corpses, etc. for thousands of years. This process takes millions of years to produce black carbon, typically 750 million years (Taylor, 2016).

### Forging carbon hegemony?

Carbon traders, an illustration of ‘Hegemonic Force’ developed by Antonio Gramsci (1891–1937), bring a number of non-reliant countries in terms of energy to the commodification of carbon in the name of energy production at a reasonable rate by commercialization of carbon in the market. These commonly natural resources can easily be used as a way of profit-generation in the market. If those non-reliant countries become self-reliant in their power sources, who will be the customers for the carbon traders to ensure their profits? The carbon traders in negotiation with government can easily carry out carbon offset including carbon trading schemes.

For this reason, anew attempt came as a geopolitical order by privileging markets in ‘global resource management’ ostensibly to

protect the 'earth system'. New plans to lay the 'green economy' model a 'counter-hegemonic' force of environmentalist. Mainly for this particular reason, the 'green economy' idea was quickly countered by a configuration of grassroots political organizations (Goodman and Salleh, 2013). 'Green economy' emerged as a new environmental belief for sustainable development restoring capitalist promises for a consumer wealth. The whole process leads the mobilization of the grass root to successfully encourage governments to down the proposition into a series of optional possibilities leaving the crisis unabated.

The global majority of meta-industrial-workers, urban women careers, rural subsistence dwellers, indigenous are hit hard by the exploitation and dispossession of ecological exhaustion. The exclusion is also on the basis of culture and social division. 'Hegemonic power' can be associated with exploitation with regards to identifying states, groups, classes on whom dominance can be applicable by legitimizing norms and ideas (Goodman and Salleh, 2013). Meta-Industrial workers are victims in the time of overlapping crisis where political decision duly informed by ecological embedded mode of existence is the urgent need.

### **The danger of using fossil fuels**

Empirical research has found that burning of fossil fuel resources emits a large number of pollutants which are extremely hazardous for both public health and environment. The actual costs of using fossil resources are not always indisputable but can be dangerously disastrous to environment and society.

According to Harvard research report (2015), Fossil fuels are responsible for one-third of premature deaths due to air pollution in Bangladesh. This is the second highest number compared to other countries in the world. 792,071 (36.3% of total death) people died in Bangladesh due to air pollution from 2013 to 2016 (Chiari and Zecca, 2011). According to the Global Burden of Disease Studies (2017), indoor and outdoor airborne particles are responsible for air pollution

that causes many deaths recent years in Bangladesh.

Scientists have found that greenhouse gas emissions are the primary outcomes of burning fossil fuels that lead to an environmental catastrophe by increase of heat in the atmosphere resulting in global warming. According to the World Bank (2017), unless urgent actions are taken to mitigate the effects of global warming, more than 100 million people will go under poverty line by 2030 across the globe. IPCC (2018) noted that a large area of Bangladesh's coastline will go under water by 2030 for the rising sea level water. In other words, fossil fuels perpetuate environmental injustice.

### **Environmental impacts of Rampal coal-fired power plant**

Environmentalists claim that the damage of environment from this plant is likely to be more severe than any other project in Bangladesh. This damage is mainly due to the simultaneous effects of air and water pollution caused by ashes of coal and gas produced from the plant. (Antonioli and Mazzanti, 2017)

The passage of coal-carrying ships through the Pashur River from the Sundarbans will have resulted in the discharge of coal powder, broken or scrapped coal, oil, dirt and waste that will cause a major contamination of the river water and the underwater ecosystem (Nusrat et. al., 2016). The emissions from the plant will elevate the toxic particles of SO<sub>2</sub> as well as NO<sub>2</sub> covering 100 square-km from the south-west to the north-east of Bangladesh due to prevailing wind patterns. The affected areas would cover the Satkhira, Khulna, Noakhali, Comilla, Narshindi and Dhaka districts of Bangladesh (Misra and Mookerjea, 2017).

The cutting down of trees and dredging of the Pashur river for the construction of jetty will destroy the habitants of the Sundarbans (Nusrat et al., 2016). Terrible noise pollution also will be caused by equipments and vehicles used in power plant through turbines, generators, compressors, pumps, cooling towers, coal lifting and unloading and transportation, etc (Rifat and Sultan, 2020). Therefore, there will have vast detrimental

effects on the Sundarbans' animal and plant's ecosystem of the Royal Bengal Tiger, deer, dolphins and the mangroves since heavy metal contamination of various compounds of sulfur, nitrogen, carbon emitted from the coal power plant which will cause plants and animals disabled (Anas et al., 2018). Furthermore, climatologists predict that this project is also more prone to acid rain which will hinder the normal growth of trees and forests severely affecting the environment, agriculture, fisheries as well as water resources surrounding the plant area.

### **The Sundarbans will disappear?**

Satellite images show that the effects of global warming have increased the sea level water by an average of 3.14 millimeters per year in the last 20 years with an average annual growth rate of 2 millimeters worldwide (Rifat and Sultan, 2020). If the water level rises by 10 cm, 15 % of the land of the south-west coast of Bangladesh will be washed away. If it increases by 45 cm, 75% of the land of the south coast of Bangladesh will be submerged and the ecosystem of the mangrove forest will be destroyed (Taylor, 2016).

The increasingly presence of salt in sea-water will endanger 425 species of plants and 246 species of wild animals at risk of extinction (Chiari and Zecca, 2011). The mangroves are known as sanctuaries for plants, marine fishes and animals. However, rising temperature is likely to disrupt their reproduction and cause disruption in the food chain of the ecology (Tvinnereim and Ivars, 2016)

### **Eco-nationalistic social movement in Bangladesh**

Terrible pollution from the Rampal coal-fired power plant will bring acute damages to the surrounding environment as well as severe sufferings of the working class people who earn their livelihoods from the mangrove forest. The protection of the environment of the sundarbans and the working class people must be addressed through mutual cooperation with the labor movement and the environmental movement. Hence, working class people are to be the fuelers for an eco-nationalist social movement against the Rampal coal-fired power plant.

On the other hand, building industrial establishments is sanctioned in the 'buffer zone' of the Sundarbans. In spite of having the environment protection law in Bangladesh, how an environmentally catastrophic plant is allowed to build only four kilometers away from the buffer zone? Then what is the real purpose of creating the zones in the sundarbans? Indeed, the inefficient and fragile government environmental policy is counteracting the environment protection of the sundarbans and leads to an opposite result. Hereby, environmental instruments are to be carefully taken into consideration by the environmental lawyers and professionals to address a universally recognized environment protection policy by operationalizing and condemning the existing laws knocking at door of judicial department.

Furthermore, in spite of having the national river conservation commission act-2013, the Poshur river pollution has been not stopped. Sewerage towards river from the plant, illegal transportation through the river and river bank robbery is not only deteriorating the ecosystems of underwater but also collapsing the typical river-dependent irrigation and fishing destroying the livelihoods of peasants and fishermen of the Sundarbans. Most importantly, It is posing a question that 'who can raise the issues of the peasants and fishermen of the Sundarbans?' The question of environmental movement has been agitating for a long time for the environmentalists as a very few progress is seen to tackle the environmental degradation in Bangladesh. It is nothing but the trade unions who can call for an action the uniting the working class people to make raise their voices.

### **CONCLUSIONS**

The using of fossil fuels that result in the rise of global temperature is the biggest threat for life on earth. In here, undoubtedly the Rampal coal-fired power plant is a deadliest project initiated by the two neighboring countries near to the largest mangrove forest. Gradually, this plant will emit toxic wastes including heavy metals and fly ashes to the environment which will scatter outside and cause a sustainably environmental damage as well as an adversary climate change in the atmosphere making people nearby the Sundarbans homeless,

landless and jobless. Therefore, the Rampal project is not only producing power but also contributing carbon emission to the global carbon nexus that increases global temperature resulting in rising sea level. It is nothing but a ‘to dig one’s own grave’!

Nonetheless, Governments from both sides are claiming that the Rampal project is eco-friendly and a symbol of friendly partnership of producing electricity that will be shared equally. However, Bangladesh is sharing a land in addition nearby the largest mangrove to establish the plant endangering the ecology of the surrounding environment asking for no additional eco-compensation. Isn’t it obvious that the Rampal project is nothing but a realistic example of hegemonic practice in the name of ‘eco-friendly coal power plant’ by India? Profit will be shared equally but losses will not be!

It is important not to forget that the most diverse effects of using of the black carbon in the power plant will rob the lives of plants and animals and livelihoods of working class people creating ecological as well as social catastrophe with regards to food, shelter, and health. Deductively, trade unionists have to come up with greater responsibilities of building social awareness amongst men and women of working class for creating a bio-civilization through an eco-nationalist social movement. Therefore, working class people engagement in environmental movement is an ultimate way to re-voice a demonstration to defend the environmental degradation by the hegemonic carbon traders.

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