



# AIUB DSpace Publication Details

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<b>Author(s) Name:</b>	Md. Shahariar Parvez, Mohammad Abdul Mannan
<b>Contact Email(s):</b>	mdmannan@aiub.edu
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## Abstract:

In Bangladesh, the expected electrical power generation has not been increasing as demand for electrical power is growing fast as changing of civilization life. It has been well known that the electrical energy can be extracted more than local demand in China and Bhutan from the renewable energies such as wind energy and hydro power. To fulfil the demand of Bangladesh to lead modern life the electrical energy can be imported from China and Bhutan. This study is proposed to design and analyze a common grid at seven sisters in India to transmit electrical power from China and Bhutan to Bangladesh through India. By analyzing the available data decision can be taken that the electrical power can easily be transmit to Bangladesh from Tibet in China and from Bhutan via India. Bangladesh and India both countries will be benefitted by using the proposed designed grid. To evaluate the performance and the characteristics of the proposed grid in different loads (combining Bangladeshi and Indian load) conditions, a simulating model by using MATLAB Simulink has been developed by considering three hydro power plants from Bhutan, one wind plant from China and all Bangladeshi power plants. The load has been varied for small, medium and high demand. Using the obtained data from Matlab simulation, the market modeling has been developed in a clean energy management software Retscreen and game theory has been taken in practice for modeling market and market price. Utilizing gathered knowledge from analyzing all model, data, market and game theory, finally it has revealed that the overall cost of power consumption can be reduced and save the environment from the harmful effect of carbon emission of Bangladesh.

**Keywords:** Wind and hydro energy, HVDC line and facts, international grid concept, ECDF and game theory, MATLAB and ret screen