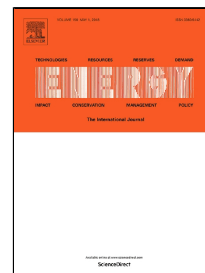


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Bangladesh power supply scenarios on renewables and electricity import

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Highlights

- Bangladesh needs rapid expansion of power supply to fuel socio-economic development.
- Scarcity of domestic resources for power generation makes energy security a key issue.
- We explored various scenarios for future power system expansion using TIMES model.
- Electricity import combined with promoting renewables offer potential solutions.
- Materialising above options needs policies, market, institutions, and political will.

Abstract: Bangladesh, currently a low middle-income economy aspires to become a high middle income country by 2021. To achieve such aspiration, the country will have to ensure adequate power supply for its fast growing economy. Bangladesh lacks energy resources for power generation. This paper explores some of the power supply scenarios with special focus on power imports and higher use of renewables. Using the technology rich, least cost optimisation model 'The Integrated MARKAL-EFOM System (TIMES)', the authors developed four possible future power supply scenarios for Bangladesh. These scenarios include an energy security framework (based on the Power System Master Plan (PSMP) 2016 report), a high power import scenario, a scenario with higher use of renewables and a combined high power import - high renewables development scenario. The analysis indicates that the present energy security framework ensures energy security with diversifying fuels used for power generation, however, scenarios with high power imports and a high share of renewables (including the combined scenario) bring down the cost of supplying power along with a reduction in expensive fossil fuel imports while maintaining energy security as fuel sources for power generation still remain diversified.

Keywords: energy system model, scenario, electricity import, renewable energy

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