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| **Title:** | Techno-Economic Feasibility Analysis of Hybrid System in Bangladesh – A Case Study for Higher Learning Institution | | |
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| **Abstract:** |  |
| This research describes the application of an imperial strategy using the software program Hybrid Optimization of Multiple Electric Renewables (HOMER) to create an adjustable sketch of a hybrid renewable energy source (HRES). A higher learning institute of Bangladesh located in Dhaka, Bangladesh has been proposed to raise out through techno-economic analysis, operational overall performance analyses, and environmental element reviews pertaining to the above device for each on-grid and off-grid-connected modes. In this work, many combinations of diesel generators, photovoltaic (PV) and storage batteries have been taken into consideration to determine which mixture suits the urban area the fantastic with an affordable cost of electricity and little climate effect. A sensitivity investigation was also carried out to show how the overall performance of the system would trade if the key parameters, such as power purchase, load demand, sellback, and fuel were changed. The findings indicate a higher tendency towards the use of renewable strength sources, which have the lowest net present cost (NPC) and cost of energy (COE). In comparison to all different eventualities for each off-grid and on-grid connections, the hybrid Diesel /PV/Battery system is found to have the excellent technical performance. It also reviews good economic and environmental performance, which has increased system’s sustainability. | |