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Abstract:

Because of Bangladesh's geographical location, solar energy is one of the probable sources. Because Bangladesh is mostly an agricultural country, procuring land for huge solar power projects is quite challenging. Rooftop solar is the best alternative for Bangladesh in meeting its goals and alleviating its current energy problem. The PVsyst software was used to build and simulate a solar PV grid-connected energy generation system in this work. It also depicts the solar photovoltaic system's technical, economic, and annual performance. This planned solar PV plant generates a total of 209 KWp of power. This generated electricity could lower electricity rates by exporting excess electricity to the national grid, where industrial owners are normally paid a feed-in-tariff. Furthermore, the solar power plant saves oil and has a low environmental impact. This project can also be used as a model for other institutions solar systems.

Keywords: Solar Energy, Solar PV Plant, PVsyst Software, SketchUp Software, Skelion Software, Grid Connected PV, Sun Path, Array Loss Diagram, Performance Ratio, Normalized Production