

# Assessing the Techno-Economic Impact of Derating Factors on Optimally Tilted Grid-Tied Photovoltaic Systems

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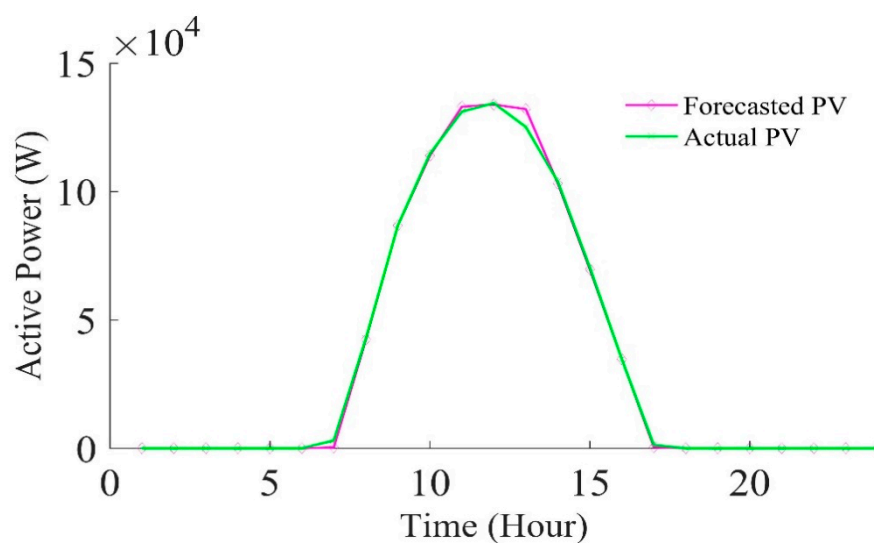
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**Table S1.** Difference in solar radiation and cleanness index before and after using optimum tilt angle.

Solar Radiation Using NREL Data (kWh/m <sup>2</sup> /day)	Optimal Angle (degree)	Solar Radiation Using Optimal Angle (kWh/m <sup>2</sup> /day)	Cleanness Index Using NREL Data	Cleanness Index Using Developed Algorithm
4.374	54	6.7828	0.615	0.475
4.813	42	6.1020	0.588	0.504
5.584	27	6.0882	0.588	0.595
5.582	8	5.6170	0.532	0.589
5.537	1	5.5370	0.504	0.592
4.043	1	4.0430	0.364	0.454
3.679	1	3.6790	0.334	0.427
3.837	1	3.8370	0.362	0.423
3.773	20	3.9411	0.388	0.394
4.584	38	5.5082	0.541	0.467
4.231	50	5.9785	0.580	0.458
4.243	56	6.9366	0.628	0.500
4.374	54	6.7828	0.615	0.475



**Figure S1.** Actual and forecasted PV power output for Hatiya.

The proposed research applies Neural Networks MATLAB Toolbox (nntool) for forecasting PVs power outputs. It considers six inputs those are beam irradiance ( $W/m^2$ ), diffuse irradiance ( $W/m^2$ ), ambient temperature, wind speed (m/s), panel of array irradiance ( $W/m^2$ ), and cell temperature, while one output that is the active power output of PV. The proposed research has derived data for nntool inputs from NREL's PVwatts Calculator, as there is no such a real system at Hatiya, in Bangladesh. In Figure 1, magenta and green curves demonstrate the actual power output and forecasted power output of PV correspondingly.