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# IITians light up government school with smart solar tech

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Chennai: Like any government school in the city, the Government Girls Higher Secondary School in Ashok Nagar too faced power cuts, sometimes for hours. It was not an easy task for students and staff during the balmy days. On Friday, the Class 12 students in the school got something to cheer about, thanks to a solar panel installed on one of their buildings by IITians.

The idea of setting up a solar power plant was hit upon by a group of IIT Madras students, also a part of the IIT-M chapter of the NGO 'Engineers Without Borders' (EWB). The panel was installed at a total cost of 7 lakh on top of 'G' block which houses 12 classrooms occupied by more than

500 Class 12 students.

"We took up the solar project in 2014 and approached the school to power one block as a pilot project. We are going to monitor the power supply for the next six months before replicating it to the remaining four blocks in the school where nearly 3,600 girls study," said Vijender Singh, a third year student of IIT. The students hope to install solar panels in other government schools too.



The students estimate that power consumption in the block may come down by approximately 35% with the installation of the panel. Lights and fans in the block that consume about 18 watts and 30 watts at full power are electrified using solar energy run on direct current (DC), unlike most appliances at homes that run on alternating current (AC). The specially designed DC lights and fans consume only half the power compared to AC lights and fans, they added.

"Since the power output of the solar panels and battery is direct current, a DC-to-AC converter is eliminated as all equipment (solar panels, battery pack and lights and fans) run on DC. This also removes conversion loss. As a result, the solar panel providing 1.5 kW power is sufficient to power lights and fans in the block which would otherwise require a power generation of 6KW to 8KW," said K Venkatesh, another student of IIT.

This DC-based technology was developed in IIT Madras by Ashok Jhunjhunwala, department of electrical engineering, and funded by Deepak Sanghi, proprietor of e-care India and IIT Madras alumnus. It was installed by Cygni Energy which commercialised the technology and partly funded it too. Srikanth Vedantam, head of department of engineering design, IIT Madras, who mentored the students, inaugurated the panel on Friday.