

Bengaluru Metro's Blue Line can run fully on solar power, save Rs 61 crore a year: IISc report

The rooftops of the Blue Line metro stations alone cover an area of 1.09 lakh square metres, accommodating 50,000 solar panels, as per the IISc report.

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The under-construction Blue Line will stretch from Central Silk Board to Kempegowda International Airport. (File Photo)

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A report from Bengaluru's Indian Institute of Science (IISc) has said it is feasible for the Blue Line metro (currently under construction) to be powered entirely by solar energy, leading to

crores of rupees in energy savings in the coming years.

The report of the study conducted in collaboration with [Bangalore](#) Metro Rail Corporation Limited (BMRCL) from August last year to March 2026 has stated that both phases 2A and 2B of the nearly 60-km-long Blue Line can be powered by solar, while the land required would be already owned by BMRCL. The line will stretch from Central Silk Board to Kempegowda International Airport.

This was done with the help of simulation reports from BMRCL, modelling solar energy panels, and other systems across 30 stations of the Blue Line, as well as the elevated viaduct and roofs of the train depots.

According to the report, published earlier this month, the rooftops of the Blue Line metro stations alone cover an area of 1.09 lakh square metres, accommodating 50,000 solar panels, which would save Rs 36.4 crore of electricity in the first year of operation. Once solar energy collection is extended to all other infrastructure of the metro system, the study estimates that the annual savings will go up to Rs 61 crore.

The study's principal investigator, Professor Ashish Verma, said in a statement, "This study demonstrates, for the first time with full technical rigour, that the metro rail can be a net-zero energy system using only the physical infrastructure it already owns. The Blue Line has exceptional solar potential.....the economics are decisive."

The study also estimates large environmental benefits: full deployment of solar energy on the line would save 77,900 tonnes of CO₂ from being generated per year, equivalent to emissions from tens of thousands of cars. If the entire metro network, including the Purple, Green, and other lines, goes solar, it will prevent over 1.5 million tonnes of CO₂ annually.

The IISc report has also proposed several immediate actions. The first is an immediate tender for solar power on Blue Line station rooftops, as installation would cost a maximum of Rs 63 crore, repaying the investment in two years through power savings.

It also called for surveys of the depot rooftops to confirm that BMRCL land alone would be sufficient for solar installations.

Other recommended measures included a structural assessment of the viaducts at certain sections, engaging with electricity providers like Bescom to clear any regulatory requirements, and integrating solar energy generation as a mandatory measure in all future metro construction across the nation.

The report also suggested using the 2023 Carbon Credit Trading Scheme, which could generate additional revenue via Rs 3.9 crore worth of carbon credits annually from the Blue Line.

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