Bengaluru Metro Blue Line: A Study at Indian Institute of Science Found Blue Line Can Run on Solar Energy

By **Himakshi Phukan** Published: Tuesday, May 19, 2026, 11:45 [IST]

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A study by the Sustainable Transportation Lab at the Indian Institute of Science has found that the upcoming Blue Line of Namma Metro can run completely on solar energy. The Blue Line, once completed, will cover 55 km and connect Central Silk Board with Kempegowda International Airport in north Bengaluru.

Photo Credit: PTI

Bengaluru Metro

The report, called "Assessing the Potential of Directly Using Solar Power to Run the Operations of Blue Line of Namma Metro," said that the land already owned by Bangalore Metro Rail Corporation Limited is enough to support this solar energy project.

Construction Package of the Metro Project

The study was carried out between August 2025 and March 2026 in partnership with BMRCL. It was funded privately by HSBC Ltd under its corporate social responsibility programme. Researchers studied all four construction packages of the metro project. Their work included checking substations, designing interfaces, analysing traction power systems, mapping solar energy resources, and studying train performance.

Simulation Reports

Based on BMRCL's simulation reports, the study assumed that 21 trains would run at intervals of two minutes. Researchers also examined the solar energy potential at all 30 metro stations, elevated viaducts, and depot rooftops. The report found that installing solar panels on station roofs, depot roofs, and viaduct parapets could generate enough electricity to meet the Blue Line's yearly power needs. Most of the solar energy produced would be used during daytime operations, reducing dependence on grid electricity and cutting more than one-third of annual energy expenses.

According to the study, all 30 stations are elevated and can support nearly 50,000 solar panels with a total capacity of 29.7 MWp. The project would require an investment of Rs 48 crore to Rs 63 crore, but could save around Rs 36.4 crore every year from the beginning. The report estimated that the investment could recover its cost in less than two years and provide major financial benefits over the next 25 years.

The study also stated that using solar energy across the full corridor could save around Rs 61 crore annually. Ashish Verma, convener of the Sustainable Transportation Lab, said the Blue Line already has strong solar potential, suitable infrastructure, and supportive regulations, making it a practical and long-term investment.

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