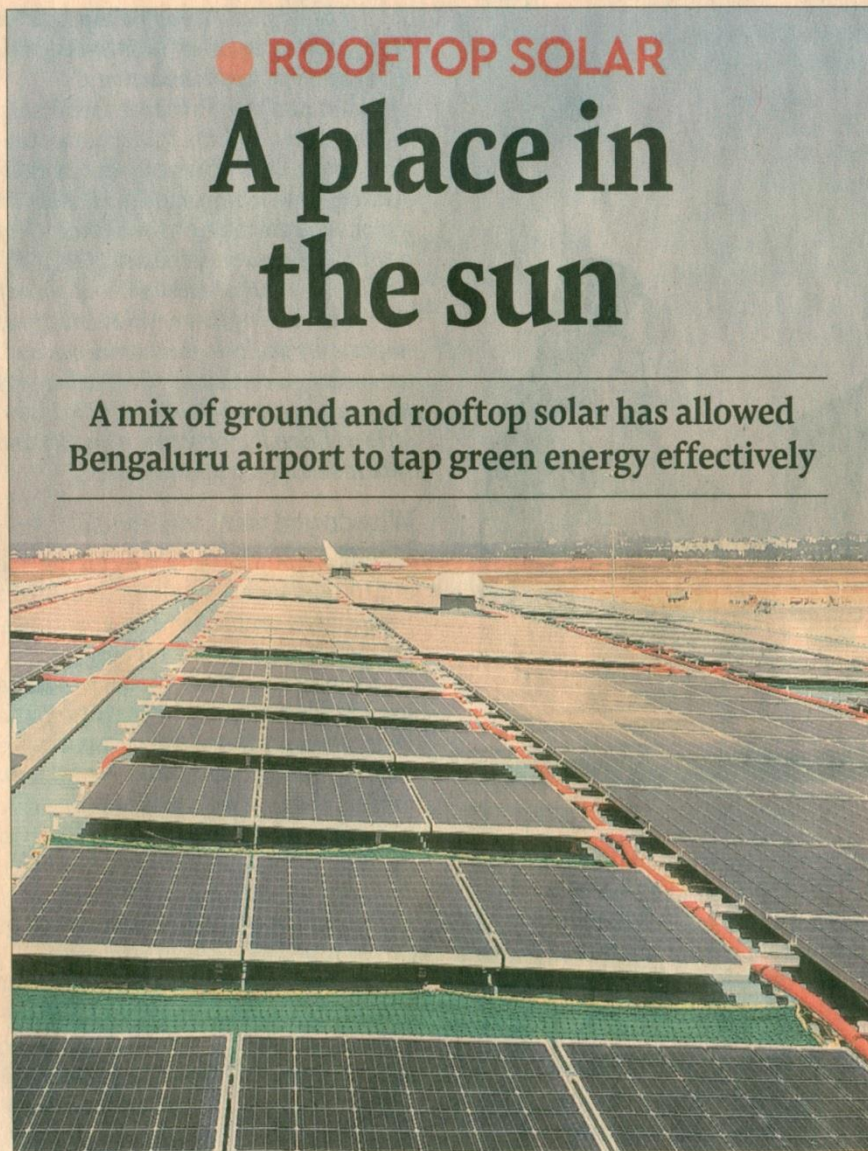


SRINATH SRINIVASAN

THAT THE KEMPEGOWDA International Airport at Bengaluru is one of the country's few airports to have been built under the public private partnership (PPP) model is well known. What is less known is that of the over 75 million units of power consumed by it annually, solar power accounts for 40 million units. There's more of interest in this mix, especially given that rooftop solar has struggled to take off in India: while solar plants located at Belgavi and Tumkur provide the airport 30 million units of power a year, the remaining 10 million units are generated through its rooftop plants.

The rooftop solar system at the airport has various first-in-class features. The Bangalore International Airport Ltd (BIAL) and Sunshot Technologies, the company that executed the solar project, have designed the plant in a way that maximum power can be generated without a resultant glare on the runway and Air Traffic Control (ATC). With a total capacity of 3.35 MW, the plant is spread over four rooftops on the airport campus. "The installation process was challenging as the rooftops were of different shapes, gradients and faced different directions. The structure we designed is patented as a result," explains Rahul Dasari, co-founder and CEO of Sunshot Technologies.

The solar plant is monitored using an Internet of Things (IoT) based cloud platform which can analyse data gathered in real time. This also helps in analysing load patterns within the airport campus and distributing the power generated commensurately. While this power is fully consumed by the airport, it can be exported or sold outside by integrating it



ROOFTOP SOLAR
A place in the sun
A mix of ground and rooftop solar has allowed Bengaluru airport to tap green energy effectively

with other grids, claims Dasari.

Talking about operations, Lakshminarayanan S, vice-president, engineering and maintenance, BIAL, says, "it could have

been done under the engineering, procurement and construction (EPC) model wherein BIAL bore the expenses of setting up the plant and ran it too. Since ours is an

expanding airport, we opted for an Operational Expenditure (Op-Ex) model wherein Sunshot Technologies invested all the money and in turn charges us an operating fee per kilo-watt-hour (KwH)."

On the installation expenditure for such a plant, Dasari says, "for a rooftop set-up like this one, I would estimate the investment at around ₹5 crore per MW. We expect a 10-15 year break-even period for the project." BIAL and Sunshot Technologies are now on a lookout for suitable power storage technologies which would enable the use of power produced in the day at night or on a later date.

On the question whether the Bengaluru airport example is being replicated elsewhere, Amit Kumar, partner — Clean Energy, PWC, says, "the Airports Authority of India (AAI) has an ambitious target of 50 MW capacity. Under this mission, about 30 airports have been identified. The Cochin International Airport, which has installed a 12-MW solar plant, is running fully on solar energy. The Chandigarh airport has installed a 200 kWp solar rooftop system. The Kolkata airport is planning a 15-MWp solar farm in addition to the already installed 2-MWp project."

On the scenario in the rooftop solar sub-sector, Kumar says, "while ground-mounted projects have fared well and India has some of the largest solar parks globally, rooftop solar has not taken off on a large scale, yet. As against the targetted capacity of 40,000 MW by FY22, the country has installed merely 1,200 MW (as of June, 2018). What's promising though is that the sub-sector has picked up scale and is witnessing lucrative investment opportunities. This process needs to be catalysed by removing the hurdles faced by stakeholders."