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How solar rooftop plants are cheaper backup than diesel generator sets

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NEW DELHI: Solar rooftop units could be a much cheaper option for large apartment complexes, which usually depend on polluting diesel generator sets for power backup. A new study by the Centre for Science and Environment (CSE) has found that the cost of using solar plants is less than half of what one would spend on a DG set.

The study released on Tuesday reveals that the cost of power generation from a DG set, including the capital cost, is Rs 27-33 per unit, compared to rooftop solar tariff of Rs 10 per unit. Though most consumers perceive solar power to be expensive, prices of panels have fallen sharply in the past few years, thus bringing down the cost of rooftop projects. The cost of solar panels account for 50-55% of the total project cost.

The photo voltaic module prices have fallen from 1.95 euros per watt in March 2010 to 0.53 euros in July 2016. "The cost of electricity generation through solar rooftop with battery backup comes to around Rs 7-8 per unit, which is half the cost of electricity supplied through DG sets. In addition, rooftop plants can reduce the monthly bill of the consumers as the extra units generated through these plants can be supplied to the grid," the report said.

To compare the costs of solar rooftop and DG sets, CSE, along with cKinetics—an advisory firm—conducted a feasibility study of five housing societies in Delhi, Haryana, UP and Rajasthan. Two of these are Satisar in Dwarka, which has 245 flats and a 112 KW DG set (partial backup). Satisar faces an outage of about 48 minutes

The other is ICON in Gurgaon, which has 344 flats with a 1,112 KW DG set (full backup). ICON faces about 16 minutes of outage per day. The team assessed the feasibility based on various parameters such as rooftop area, load needs and

average outages. Two models were considered—Capex—the residential society pays for the capital costs of installing the solar rooftop and RESCO, under which installation is done by a developer. Societies pay a pre-decided tariff on a monthly basis.

Under both models, the cost of supply of power was between Rs 6 and Rs 9 for all the societies. As a backup system for outages, a rooftop plant will work only if it has battery storage. In other words, it's like an inverter fuelled by clean energy, experts explained.

A BSES Rajdhani Power Limited official has clarified that solar rooftops will have to work with reliable grid supply since they cannot provide full backup unlike DG sets. "Solar rooftop can meet basic needs during brief outages but cannot provide full backup (power to run energy-intensive appliances like ACs)," he said.

The report reasons that with the decrease in duration of outages, the use of DG sets in residential societies has declined to only 200-300 hours per year. The BSES official highlighted that there were other benefits of having a solar rooftop plant—they could bring down power bills apart from providing backup during outages.