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SOLAR POWER

Conversion losses, fluctuations need to be addressed: expert

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PUNE: Even as Pune is seen as a city which can contribute substantially to the generation of solar electricity through rooftop solar systems, experts have stated that current conversion losses and fluctuations in grid are some of the hindrances which are not allowing harnessing of solar power completely, especially with rooftop solar systems.

According to Anil Rajvanshi who has been pioneering in rural development work for over last three decades, rooftop solar photo voltaic power with net metering, which has been a major success in many advanced countries, has failed to pick up at a desired pace in Pune, mainly due to certain constraints related to lack of financing options and lack of technological upgradation required in the solar power generation sector.

Rajvanshi is the director of Nimbkar Agricultural Research Institute (NARI) at Phaltan, Maharashtra, and has been working in areas of renewable energy-based cooking and lighting, power generation from agricultural residues and renewable energy-based mobility devices, among other things.

Speaking about solar power generation, Rajvanshi said, "Solar power generation is possible for eight to nine months as there is about 1/3 to 1/4th of the radiation affecting solar power generation during monsoon and cloudy days. For solar electricity production, we get about five to six hours of real sunshine for the cells to produce power at its maximum. Rest of the time, for 18-19 hours per day, the system borrows from the grid."

Rajvanshi emphasised that solar energy generates direct current (DC) electricity whereas we have all systems running on alternating current (AC), so conversion of DC into AC entails loss in energy.

He stated that to reduce conversion loss it is important we utilise the DC power directly and avoid conversion from DC to AC which is currently not being done.

"Also, it should be understood that reverse metering becomes feasible when the grid supply is pure. If there are fluctuations in the grid frequency it is very difficult to put pure supply from solar systems in it. All these systems make the whole system expensive and hence the reluctance of utilities to buy power from the consumers." said Rajvanshi.

He added that in the present scenario, the best bet is to produce power and store it in batteries and then reduce the energy off-take from the grid. "Hence presently we need to encourage research in both these," said Rajvanshi.