

Uttar Pradesh a High Potential Solar Open Access Market, But Challenges Remain

The state ranks the fifth-highest for open access solar projects, accounting for 7.5% of the total installations



Uttar Pradesh, India's largest state, is transitioning from a predominantly agricultural economy into a promising industrial hub. The state's recent industrial initiatives have led to an increase in power demand.

According to CEA, the states' energy demand has increased by 10% year-over-year as of September 2023.

The state has been attracting growing interest from solar open access developers and consumers thanks to the state's robust incentive package.

There is also more clarity now on how captive power projects are defined in the state's solar policy. The policy mandates that a user who owns at least 26% of a captive power-generating project and utilizes a minimum of 51% of its electricity could be classified as a captive user.

The incentives include a 50% waiver on wheeling and transmission charges for captive and third-party consumers, applicable to open access projects exceeding 1 MW.

Consumers also get a ten-year exemption on electricity duty, with the privilege of 100% energy banking annually. The state has **decided** to waive stamp duty on land leases or purchases for such projects.

There is also a 50% exemption on wheeling and transmission charges for the intrastate sale of power to a third party or for captive use. Additionally, there is a 100% exemption on the cross-subsidy surcharge, wheeling charges, and transmission charges for intrastate transmission systems when purchasing solar power.

According to one developer, a significant increase in solar open access installations can be expected in the coming year, driven by favorable renewable energy policies.

"As a power-importing state, Uttar Pradesh's exemption on cross-subsidy surcharge and wheeling/transmission charges for intrastate solar power transmission systems is set to further elevate open access solar," he said.

Uttar Pradesh recorded a substantial growth of 174.5% in open access solar power additions in the second quarter of 2023, amounting to 58.6 MW, as compared to the 25 MW added in the previous quarter, according to the [Q2 2023 Mercom India Solar Open Access Market Report](#). The state had the fifth-highest cumulative capacity for open access solar installations, reaching 736.5 MW as of June 2023, representing 7.5% of the country's total solar capacity.

One of the pivotal factors driving the success of the open access model in the state is the high tariffs that industries currently pay for power provided by distribution companies (DISCOMs). For the commercial and industrial (C&I) segment, the prevailing retail electricity tariffs (FY24) in Uttar Pradesh range between ₹5.1 (\$0.073)/kWh and ₹8.3 (\$0.10)/kWh. This is higher than the tariff of other major open access states like Karnataka, Maharashtra, Tamil Nadu, and Rajasthan.

Estimates from developers suggest substantial savings for consumers. Industrial consumers could save approximately ₹1-₹1.5 (~\$0.012-\$0.018)/kWh, while commercial consumers may see savings ranging from ₹2.25-₹3.4 (~\$0.027-\$0.041)/kWh.

Challenges

However, several challenges must be addressed to ensure seamless growth of open access. "Uttar Pradesh, despite its transition into an industrial hub, is still predominantly an agrarian state with a significant portion of its land already dedicated to farming activities. Large, contiguous parcels of land suitable for solar projects are limited due to extensive agricultural use," said one developer.

The lack of available land has led to most projects being concentrated in only a few regions, such as Bundelkhand. In other areas, land acquisition processes have encountered issues with local authorities and landowners, leading to higher costs for developers and rendering projects financially unviable.

The developer suggested that the government establish solar parks to overcome these land acquisition challenges, providing developers with readily available land and simplifying the development process.

Another challenge involves the lack of provision for part commissioning of projects. This poses a higher risk for developers, particularly for larger projects exceeding 20 MW, where all project capacity must be tied up simultaneously. Obligated entities with renewable purchase obligations may struggle to fulfill their yearly targets if the entire project must be operational at once. Furthermore, developers who have secured loans could face increased interest expenses, as the extended waiting period for the entire capacity to become operational may lengthen the loan tenure— which, in turn, will affect the cash flow of the project.

"While the state offers 100% energy banking, the ground reality is different, with the state limiting energy banking to 25% of the injected energy for many projects," a developer said. "Any energy exceeding this benchmark is deemed purchased by the DISCOM at a lower rate of ₹2 (~\$0.024)/kWh. To encourage solar energy adoption and development, the state must consider raising the energy banking limit, offering more flexibility to consumers and developers for surplus energy utilization."

Uttar Pradesh has made significant strides in promoting open access solar, and to ensure the continued success of this model, the state must address these challenges immediately.

The [Q2 2023 Mercom India Solar Open Access Market Report](#) covers a detailed analysis of state policies and regulations related to solar open access. It covers vital information and data on the market.