

# Unlocking Solar Potential – Uttar Pradesh’s Journey Towards establishing Solar Cities

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Uttar Pradesh is embarking on a transformative journey towards a sustainable future powered by renewable energy. With an ambitious target of producing 16,000 megawatts (MW) of renewable power by 2026-27, the state government has set its sights on developing 20 cities as ‘solar cities,’ comprising 10 lakh households equipped with solar rooftop installations over the next five years.

The draft Solar Energy Policy-2022 reflects the state’s commitment to harnessing solar energy as a key component of its energy portfolio. One of the cornerstones of the policy is the designation of 20 cities as ‘solar cities.’ These include major urban centers such as Lucknow, Kanpur, Agra, and Varanasi, among others. Through net metering facilities, residential consumers can sell excess power generated by their solar installations to the distribution company, fostering a culture of energy self-sufficiency and decentralization.

Furthermore, the policy underscores the importance of solarizing public institutions, including schools, colleges, and government buildings. With plans to equip 21,000 un-electrified primary schools with solar rooftop installations and promote solar energy in institutions across the state, UP is laying the foundation for a sustainable education infrastructure powered by clean energy.

In addition to rooftop installations, UPNEDA is spearheading efforts to utilize barren and uncultivable lands for solar projects, particularly in the Bundelkhand region. Off-grid solar systems, including solar power plants, street lights, and pumps, are set to transform rural landscapes, providing clean energy solutions to remote communities.

The proposed policy incentivises solar investment through various measures, including 100% exemption on stamp duty for land used in solar projects and capital interest subsidies for utility-scale projects. By offering government land for solar development and providing financial support, the state aims to attract investment and stimulate economic growth in the renewable energy sector.

Solar cold storages emerge as a critical component of the policy, enhancing the shelf life of agricultural produce and boosting farmers’ income. By integrating solar solutions into agricultural infrastructure, UP is addressing food security challenges and promoting sustainable farming practices.

The **Uttar Pradesh** Power Corporation Limited (UPPCL) is mandated to purchase solar energy as per the renewable purchase obligation (RPO), ensuring a market for solar producers and driving demand for clean energy sources. With a focus on decentralized and rooftop-scale projects, the state is democratizing energy production and fostering a culture of energy entrepreneurship.

## ILLUMINATING AYODHYA: THE RISE OF INDIA'S FIRST SOLAR CITY

The sacred city of Ayodhya is undergoing a transformation unlike any other in the country. Ayodhya, renowned for its rich cultural heritage and spiritual significance, is now poised to become a beacon of sustainability and innovation as it embarks on a groundbreaking initiative to establish itself as India’s first solar city.

Ayodhya is being developed as a model solar city with components like solar rooftop, solar high mast, solar street lights, solar trees, solar cold storage, and solar boats. The project also includes the installation of a solar park, solar water kiosks, and solar energization of pump stations. The Uttar Pradesh Government has sanctioned a separate amount for this groundbreaking initiative, with over 2,500 solar lights already installed in Ayodhya. Expanding on this success, 17 other municipal corporations and Noida have also been included in the Solar City program, receiving similar solar initiatives to promote sustainable energy solutions.

The Ayodhya Solar City project is a great undertaking led by the Uttar Pradesh New and Renewable Energy Department Agency (UPNEDA). With a timeline spanning five years, from 2023 to 2028, the project aims to harness the abundant solar energy potential of the region while serving as a blueprint for future sustainable urban development initiatives across the state and beyond.

At the helm of this ambitious endeavor is Anupam Shukla, Director of UPNEDA, who envisions Ayodhya as a model for solar-centric urban planning. “The plan is to develop Ayodhya as the model for the solar city project and use the learnings in the implementation of solar policies in other proposed cities,” He asserts, underscoring the project’s broader implications for **Uttar Pradesh**’s renewable energy landscape.

The first phase of the Ayodhya Solar City project is well underway, with a slew of initiatives completed by January 2024. Among the key highlights of this phase are the installation of groundmounted and rooftop solar panels, solar street lights, solar charging stations, and innovative solar trees that combine form and function to provide shade while generating clean energy.

One of the flagship projects within Ayodhya Solar City is the development of a 40 MW solar park along the banks of the Saryu River, a symbolic gesture that underscores the city’s commitment to harnessing renewable energy sources. Furthermore, the integration of solar-powered boats and streetlights along the riverfront serves as a testament to Ayodhya’s transition towards a sustainable future.

The momentum extends beyond public infrastructure, with the state government spearheading efforts to solarize government buildings and incentivize residents to embrace rooftop solar installations through subsidies and incentives. Notable installations include rooftop solar plants at educational institutions, government offices, and public spaces, totaling a cumulative capacity of 2.5 MW.

Ayodhya’s streets are also undergoing a transformation, with the installation of solar smart streetlights along the iconic Ram Path. These innovative streetlights, equipped with integrated batteries and solar panels, symbolize the city’s commitment to blending tradition with technology in its quest for sustainability.

In addition to streetlights, Ayodhya will soon be adorned with solar trees, architectural marvels that harness solar energy while providing shelter and comfort to residents and visitors alike. These futuristic installations will adorn small drinking water kiosks and benches, further enhancing the city’s aesthetic appeal while reducing its carbon footprint.

Beyond aesthetics, Ayodhya’s commitment to clean energy extends to transportation and agriculture, with plans underway to establish solarpowered EV charging stations and cold storage facilities for farmers. These initiatives not only promote the adoption of electric vehicles but also empower local farmers to preserve their produce sustainably.

Indeed, Ayodhya’s transformation serves as a testament to the power of collective vision and collaboration in driving positive change. As Uttar Pradesh leads India’s clean energy transition, the radiant glow of Ayodhya’s solar city illuminates a path towards a brighter, more sustainable future for generations to come.

## WAY AHEAD

The significance of solar energy in India’s energy landscape cannot be overstated. With limited conventional reserves and growing environmental concerns, solar photovoltaic technology offers a sustainable and cost-effective alternative. Uttar Pradesh’s commitment to achieving 10,700 MW of solar capacity by 2022 underscores its role as a pioneer in the renewable energy transition.

In conclusion, Uttar Pradesh’s vision of solar cities exemplifies its commitment to sustainable development and energy independence. By leveraging solar resources, the state is not only reducing its carbon footprint but also creating new opportunities for economic growth and social progress. As **Uttar Pradesh** paves the way towards a solar-powered future, it sets a precedent for other states to follow, ushering in a new era of clean energy innovation and prosperity.