India's Solar Cell Manufacturing Set for Significant Expansion, Targeting 42 GW by 2026

India's domestic solar cell manufacturing capacity is projected to reach an impressive 42 Gigawatts (GW) by 2026, marking a substantial increase from its current levels. This ambitious growth is a crucial component of the nation's broader strategy to enhance energy security, reduce reliance on imports, and position itself as a key player in the global renewable energy landscape.

The rapid expansion is primarily fueled by robust government support through various policy initiatives. The Production-Linked Incentive (PLI) scheme for High-Efficiency Solar PV Modules has been instrumental, providing financial incentives to manufacturers for establishing integrated solar manufacturing units. This scheme aims to foster cutting-edge technology adoption and promote an ecosystem for sourcing local materials, aligning with the "Atmanirbhar Bharat" (self-reliant India) initiative.

Additionally, the extension of the Approved List of Models and Manufacturers (ALMM) to solar cells, effective June 1, 2026, will significantly accelerate domestic production. This mandate requires government projects to procure solar cells exclusively from listed domestic suppliers, thereby creating a captive market and encouraging local investment. These policies, coupled with Basic Customs Duties (BCD) on imported solar cells and modules, are designed to level the playing field for Indian manufacturers against cheaper foreign alternatives, particularly from China.

Industry reports suggest that this capacity surge will necessitate significant capital expenditure, estimated to be in the range of ₹28,000-30,000 crore (approximately $3.19-$3.42 billion) by fiscal year 2027. While initial domestic cell production may be 80-90% pricier than imported cells due to factors like economies of scale, the long-term vision is to achieve cost competitiveness through increased volumes and technological advancements. As a result, the proportion of domestically manufactured modules supported by Indian-made cells is expected to climb from less than 15% in fiscal 2024 to over 50%.

While the projected growth is substantial, challenges such as the availability of critical raw materials (like polysilicon and wafers, largely imported), access to advanced technology, and the need for skilled labor remain. However, the government's steadfast commitment, coupled with the rising global demand for clean energy, provides a strong impetus for India's solar cell manufacturing sector. The successful realization of this 42 GW target by 2026 will be a pivotal step in India's journey towards energy independence and a greener future.