



Indian Renewable Energy Sector

Indian solar PV module manufacturing capacity to cross 60 GW by 2025 with improved backward integration

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Module manufacturing capacity in India is expected to scale up in the near to medium term along with backward integration led by the growing demand and strong policy support.

The PLI scheme is expected to enable addition of 48 GW integrated module manufacturing units with investment of over Rs. 1.0 lakh crore.



- ICRA expects the solar PV module manufacturing capacity in India to increase to over 60 GW by 2025 from the current level of ~37 GW, with improved backward integration into cell and wafer manufacturing. This is likely to further enhance closer to 100 GW as the capacity awarded under production-linked incentive (PLI) scheme comes on stream. This is led by the strong policy support and growing demand from domestic solar power installations.
- The policy support for the domestic solar manufacturers is through three major measures, [a] imposition of basic customs duty (BCD) on imported cells and modules from April 2022, [b] notification of Approved List of Models & Manufacturers (ALMM) comprising only domestic manufacturers and [c] PLI scheme for manufacturing of high-efficiency PV modules.
- The solar PV module supply chain is dominated by China, with over 80% share in manufacturing capacity across polysilicon, wafer, cell and modules. In comparison, the manufacturing capacity in India is relatively low and is largely restricted to the last manufacturing stage. As a result, the solar OEMs in India remain dependent on sourcing wafers and cells through imports. The PLI scheme is expected to change this, with integrated module units expected to come up in India over the next 2-3 years.
- The Government of India (GoI) has awarded incentives for setting module manufacturing capacity of 48 GW under two tranches of PLI scheme with aggregate incentive of over Rs. 18,000 crore. The capex outlay for setting up these integrated module capacities is estimated to be over Rs. 1.0 lakh crore. Timely commissioning of the capacities awarded under PLI remains important to reduce the import dependence for solar PV cells and modules.
- The Indian module manufacturers have benefited from the growing demand for modules from exports, mainly from the United States of America (US) as seen over the past 18 months. This is owing to the restrictions imposed by the US on module sourcing from China. However, the sustainability of this demand remains to be seen considering that a large scale-up in the module manufacturing capacity is expected in the US given the significant benefits available under the Inflation Reduction Act announced by the US Government.



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