Indian Renewable Energy Sector

Consolidation of players likely in solar module manufacturing industry; vertically integrated entities expected to benefit in long run

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Highlights

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Overcapacity in solar module manufacturing in India with capacity expected to cross 165 GW by March 2027. Cell manufacturing capacity is likely to increase to 100 GW by December 2027 based on plans announced by key players.

The profitability for solar OEMs is likely to moderate in the module segment due to competitive pressures; while the ability to achieve timely stabilisation after commissioning remains critical for the cell line segment.

- The solar photovoltaic (PV) module manufacturing capacity in India increased to over 109 GW as on September 2025 from less than 20 GW in 2022. This benefitted from the strong policy support in the form of approved list of models and manufacturers (ALMM), which effectively barred the direct import of modules. The module manufacturing capacity in India is likely to cross 165 GW by March 2027, led by the capacity expansion plans of leading original equipment manufacturers (OEMs).

- The implementation of ALMM for solar PV cells from June 2026 has also fast tracked the expansion of cell manufacturing capacity in India, which is likely to increase to about 100 GW by December 2027 from 17.9 GW currently under ALMM. While this is positive for solar OEMs, the cost of domestic modules using cells from domestic OEMs is likely to exceed the cost of modules using imported cells by 3-4 cents/watt.

- The annual solar module production is expected to be higher than the projected annual solar capacity installation of 45-50 gigawatt direct current (GWdc). Further, the recent imposition of US tariffs has redirected modules from the export market to the domestic market. Hence, the overcapacity in module production will likely lead to consolidation of smaller/pureplay module players. However, the vertically integrated manufacturers will benefit over the long term due to greater control over the supply chain.

- The overall progress towards wafer and polysilicon capacity addition under the production linked incentive (PLI) scheme remains slow despite plans announced by the big players. Hence, policy support through ALMM order implementation for wafers remains important to improve backward integration in the solar module manufacturing space in India. Also, given the dependency on China, any potential geopolitical restrictions on supply of technology/machinery required in the backward integration for OEMs remains a key risk.

- The solar PV module supply chain is dominated by China, with over 90% share in global manufacturing capacity across polysilicon and wafer, over 85% share in cell and around 80% share in modules. The global module manufacturing capacity is estimated to rise to over 1,400 GW in 2025 from about 600 GW in 2022, leading to an oversupply in the market and low module prices. This in turn has lowered the profitability of leading Chinese OEMs. A sustained period of low profits could lead to a consolidation in the industry.

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