Solar Support

Role of EPC players in development

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The Indian solar energy market has gained momentum in the past two years. From 30 MW in 2010-11, the segment's installed capacity has reached over 1,000 MW. The central and state governments are committed to the growth of this market through the Jawaharlal Nehru National Solar Mission (JNNSM) and state solar policies. The incentives and subsidies provided under these programmes will continue to be the drivers for maintaining the segment's growth momentum. The capital costs have also witnessed a steep fall, which has enabled developers to provide solar energy at low rates.

However, steps need to be taken to encourage domestic funding at competitive rates; and to incentivise the growth of a quality indigenous manufacturing base. Incentives also need to be provided to system integrators and engineering, procurement and construction (EPC) contractors. We believe that the government is aware of this and is working towards these objectives.

Why EPC contractors?

System integration and project engineering are very important elements in solar power plant planning and implementation. The process of collecting energy from each module of the plant in an efficient manner through a network of cables is a very important component of system engineering. Equipment selection has to be done on the basis of its performance over the project life cycle while optimising plant layout. Since these basic issues are already addressed during the detailed engineering of a project, EPC contractors ensure optimal plant performance during the entire life cycle. EPC contractors also carry out periodic technical audits of the plant and take remedial measures for any decline in energy generation.

Some Indian EPC contractors have developed these soft skills through their own engineering capability, supplemented by collaboration with globally reputed companies. These skills will help them in the current scenario, where the time available for project execution is reducing. For instance, EPC contractors shortlist equipment suppliers at the pre-award stage, thereby saving time.

On the technology front, crystalline silicon cells and modules have a proven track record of over three decades, and the advanced thin-film modules based on cadmium telluride, copper-indium-gallium-selenide and micro-morph technologies also have two-five years of field experience. The outlook for thin-film technology is bright.

With respect to inverters, we have installed both string and central inverters. The final choice between these options is based on a cost-benefit analysis. String inverters are expensive as compared to central inverters and with falling solar tariffs, they are being ignored by Indian developers.

Looking at the large number of determinants for optimal plant performance, there is no ideal solution for Indian conditions. Therefore, the final solution has to be tailor-made, using the best quality equipment and best engineering practices.

Challenges

Proper planning and coordinated execution help in overcoming major challenges related to civil construction and project execution. The solar segment needs EPC companies that can work in any terrain, and the lack of such capabilities has been a major challenge for most EPC companies. An EPC company's experience helps in building confidence in the developers and makes it easier for them to award the contract to an EPC player.

Success of the JNNSM depends on project sustainability over the long life cycle of solar power plants. The government must enforce discipline on the state power utilities in terms of meeting their solar renewable purchase obligation (RPO) targets. Also, success of the renewable energy certificate scheme depends on managing the demand side of RPOs. Unless this is enforced, there will always be a risk factor for these projects in terms of financing.

The central and state governments have different policies for solar energy development. Various permissions are required and no defined standards have been implemented so far. The task of securing all permissions to start construction becomes a challenge. Most projects undergo design verification through third-party consultants, which is a major time-consuming process in the construction cycle. Apart from this, there are site-specific local problems. These can actually double the time taken to commission the project as compared to similar projects developed in other countries. These considerations have to be included in the project timeline.

Several initiatives have been taken by EPC contractors to make solar energy development an attractive proposition for developers and investors. The results of these are evident from the better-than-expected solar plant performance so far. ■