

Key Challenges in EPC Sector for Solar Power



Over the last few years India has emerged as a potentially huge market for solar energy. Robust policy initiatives and the urgency for an alternate source of power have led to the creation of a solar manufacturing industry, with a capacity of 2,000 megawatt (MW) for modules and 1,000 MW for cells (cells are made into modules). The country has witnessed the emergence of a large engineering, procurement and construction (EPC) industry, with a number of companies engaged in the business of building solar power projects for others. Solar for social use is also creating mass awareness that small, inexpensive solar projects can electrify villages. The country is realizing the transformative role of these projects, particularly with respect to educating and empowering the surroundings.

EPC (Engineering, Procurement & Construction) is a prominent form of contracting agreement in the construction industry. EPC industry are companies which are involved in executing projects involving multiple engineering disciplines with overall responsibility for the performance of a 'unit' or the whole plant, where also scope of work include engineering, supplies, construction management, as also commissioning and providing performance. India's EPC market has come under the global scanner. The sector has witnessed consistent changes over the past few years, with increasing project sizes, scale and market maturity. Riding on India's infrastructure requirements over the next five years, the EPC sector is likely to make major advances. The sector is also attracting an increased interest from global majors, Indian conglomerates, as well as infrastructure developers. India's economy is expected to expand by 8.5 percent this year and some estimates show that growth may exceed 10 percent in the next few years.

India is a country that has tremendous solar energy potential. As the nation is facing an increasing demand - supply gap in energy, it is important to tap the solar potential to meet the energy needs. This article analyzes the Indian Solar industry, its major growth drivers, the challenges it faces and the various policy initiatives taken by the government. The article also tries to identify the various actions required to promote the growth and development of the industry, enabling India to meet the rising energy demands of the future.

Generating clean renewable electricity is crucial for India where nearly 300 million people—about a quarter of its population—live without access to electricity. Today, India is one of the lowest per capita consumers of electricity in the world; even when people are connected to the



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electricity grid, they face frequent disruptions. Add to that the projected economic growth and the increase in population, and the demand for energy in India is expected to double by 2040.

The solar industry in India is still in its nascent stage and faces many challenges such as high costs of solar power generation. In India, cost of solar electricity produced on-grid is around Rs. 4.5/unit. Solar projects are capital intensive, and the lack of an effective financing infrastructure for these projects is another major factor impeding growth in this sector. Another challenge faced today is the disparity in solar potential across states.

SOLAR POWER ENERGY: In the event of an increasing demand for power by nations and the emergence of an enhanced ecological consciousness, the non-conventional energy sources are obtaining prominence. Among them is solar photo-voltaic: an emerging and promising power sector in the Indian power industry. PV is becoming gradually inexpensive. In contrast, the prices for electricity from conventional power are climbing. This is helping to become solar industry segment progressively more lucrative. PV solar offers a profitable, long-term investment with comparatively low risk. The solar industry is thriving and solar EPC firms support is remarkable. Simultaneously, the challenges are also increasing some of them being:-

- **Availability of Land:** This is not just faced by developers but also by EPC companies since solar power plants require huge parcels of land. Moreover, finding a suitable land, which must be non-agricultural and unused land with good solar irradiance, is challenging. Also, the land must be free of undulations and trees. Once a suitable land is identified, its acquisition becomes the next headache. The land is generally segmented and records might not be properly available.
- **Power Evacuation:** Utility sub-station and evacuation systems must be properly set-up for transmitting the electricity generated in the power plant. Power grid must be in the proximity of the site. Many regions in some states don't have required power grid. Even when the grid is accessible, it is responsible for very high Aggregate Technical and Commercial losses.
- **Sourcing and Logistics:** Generally free-filed grid-connect (Grid Connected) projects are situated in the remote areas where road, rail, ship & airports are hundreds of kilometer away from the site. The major equipment has to be (are mostly) sourced from outside the country (of India). Air and sea transportation modes call high cost & time respectively.

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