

Need to upskill the workforce entering the fast-expanding solar sector

The government target to achieve zero carbon emissions can be met by investment in training programmes and workforce upskilling to meet future needs

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Shehwaaz Khan | Posted July 10, 2024 09:00 AM



India's goal to reach net zero carbon emissions by 2070 and use 50% renewable energy by 2030 has significantly increased job opportunities and demand for skilled workers in the solar power industry. India's solar sector engaged 2,82,000 workers in both on-grid and off-grid systems in 2022, which is expected to grow significantly in the coming years, according to a report by the International Renewable Energy Agency.

With the increase in job opportunities across sub-sectors in the solar industry, there is a need to leverage a skilled workforce and enhance training programmes to meet future requirements as India takes the lead in renewable capacity.

Arpit Sharma, chief operating officer, Skill Council For Green Jobs under the Ministry of New and Renewable Energy, highlights the possibility of creating more than 2 million jobs in the solar rooftop sector and utility projects in the next six years. "The government's target of achieving 500 GW of renewable energy by 2030 is substantial. We need increased investment and funding for training programmes and workforce upskilling to meet such future needs. The industry, which requires a mammoth workforce to meet the target, has not been investing enough in the training of technicians," says Sharma.

The Council has trained around 1,25,000 technicians consisting of graduates from ITI and Polytechnic colleges in the last five years. This has fulfilled the demand for blue-collared roles as training has been offered to skill the solar helpers, electricians, maintenance workers, operation personnel, and solar financing experts. "There is also a need to enhance the soft skills of those employed in the solar sector. It is extremely important that our technicians who are employed in big projects know how to interact with customers, communicate effectively, and possess digital literacy," says Sharma.

Akshat Jain, chief executive officer of the solar firm KLK India, says that finding a skilled workforce becomes a challenge, which affects the growth of solar projects. "While the demand for solar professionals is high, finding candidates with the necessary technical skills and experience remains a significant challenge. This shortage can hinder the growth of solar initiatives and projects, highlighting the need for targeted efforts to train and develop a more skilled workforce capable of meeting industry demands," says Jain, who has hired 400 technicians in the last five years.

Need for degree qualifications

While government initiatives like the Suryamitra Skill Development Programme are conducting training to prepare technicians who work on the ground in the industry, there is a need for qualifications to prepare individuals for specialised jobs in project management, designing, costing evaluation, and consulting. Only a few institutes in the country offer exclusive degree courses in Solar Energy; the discipline is also a part of various courses focusing on Renewable Energy.

Ravi Keshwar Kumar, a professor at Jamia Millia Islamia's Department of Physics, which offers BVoc in Solar Energy, says that degree courses in the subject prepare students to become employable in manufacturing and designing roles that need specialised education in the sector. "These courses provide a comprehensive understanding of the solar industry, including its allied disciplines such as electrical, electronics, and design. Students learn not only about technical skills like installation and operation of solar panels but also software like AutoCAD and PVWatts," says Kumar, adding that almost 50% of students at JMI get placed at organisations such as SAEL Limited, Loom Solar, Solar Monkey, among others, after completing the course, where they are hired as technical engineers and in designing roles.

"There is an urgent need for more comprehensive courses in solar energy. However, setting up advanced solar labs and facilities requires a lot of money, so there is always a funding crunch. With proper labs and technologies, we may also be able to compete with China, which has developed advanced drone technology for the maintenance and operation of solar units," says Kumar.

Rahul Nainwal, director at the School of Business, UPES which offers an MBA in Power Management, emphasises the growing need for diverse roles in the solar sector beyond entry-level technician positions. "Managerial, academic, and consulting roles are crucial because they provide expertise in strategy, policy, and project and market analysis, aiding businesses in navigating the complex renewable energy landscape. However, to meet the growing demand, there is a need for specialised courses. Achieving global sustainability targets also requires a well-educated workforce in renewable energy, including the solar sector. Besides, more academic programmes can drive research and innovation," he says.

Fostering entrepreneurship

In February 2024, the government launched PM Surya Ghar Muft Bijli Yojana, which encourages people to install 3 kilo-watt (KW) solar panels on their rooftops by providing them subsidies. "This initiative is targeted at rural and semi-urban populations. Almost 30% of technicians that we train become entrepreneurs who run small businesses installing and running solar panels. The number will increase in the coming time to have more entrepreneurs and dealers to expand the reach of solar energy," says Sharma.

State-wise push in solar industry

The states including Rajasthan, Gujarat, Tamil Nadu, Andhra Pradesh, and Telangana, followed by Haryana and Punjab are most proactive in tapping solar energy. "These states are leading in solar power capacity due to radiation potential that decides the amount and quality of sunshine. Moreover, there is also a state-level push from these states in terms of policies and schemes," says Sharma, who adds that land availability in these states could also be one of the reasons.

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