

Key actions in photovoltaic plant quality assurance



What are the advantages of investing properly in quality?

Background in India

The Government of India, specifically the Ministry of New and Renewable Energy (MNRE), has developed a plan to increase renewable energy facilities and chose us to carry out a study on underperforming rooftop photovoltaic plants. Our task as technical consulting and quality assurance leaders was to find out the causes and propose viable solutions for improvement.

Phase I of this project involved 40 rooftops distributed as follows: 15 in Delhi, 5 in the Andaman and Nicobar Islands, 10 in Pune and 10 in Surat.

The results obtained were very positively received, leading to a second phase launched in collaboration with GIZ (Deutsche Gesellschaft für Internationale Zusammenarbeit), in which we will study 60 new rooftop photovoltaic plants in the state of Gujarat and in southern states of the country.

Key actions taken in quality assurance

Having identified the evidence of poor performance on these rooftops, the issues can only be addressed properly through a comprehensive quality assurance programme. In fact, this should be applied throughout the sector to ensure long-term feasibility of new plants built in the country.

In this respect, PI Berlin carried out two key actions on behalf of the German National Metrology Institute, Physikalisch-Technische Bundesanstalt (PTB).

Review of SECI tenders

In order to reinforce quality requirements and reduce the number of deficiencies, the first action taken was to review the latest tenders issued by SECI (Solar Energy Corporation of India).

The importance of these tenders lies in the fact that they determine photovoltaic project quality

in relevant aspects such as design, construction and O&M from the very beginning.

It should be noted that sponsors and EPC specialists will develop and build the plants according to the specifications stated in the tender dossier. It is therefore essential that all the necessary items are included, as this is the best way to ensure downflow.

Reviewing these documents and proposing changes, as well as reinforcements, ensures that the most relevant and necessary information reaches all bidders in the tender.

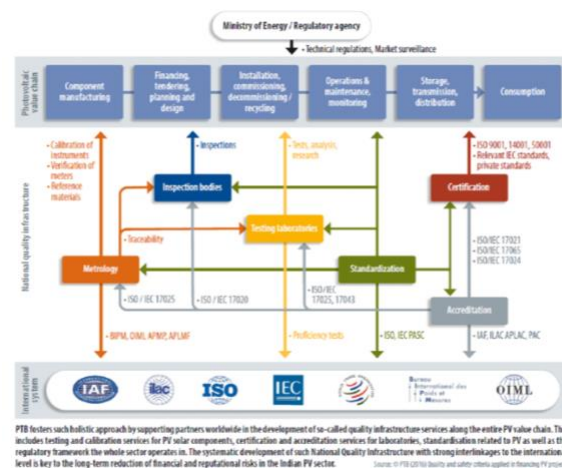


Image 1-1 Quality and safety criteria applied infancing PV projects.

Construction Monitoring Tool

The second action carried out was the creation of a checklist tool for IREDA (Indian Renewable Energy Development Agency Limited) and other financial institutions in the country to support photovoltaic plant assessment during the construction phase.

The 'Construction Monitoring Tool' is used by banks or their representatives to monitor construction quality on the projects they are financing. It comprises a scoring system divided into several phases in which different aspects are evaluated at each visit. Thus, the plant receives a

rating depending on its quality: AAA, AA, A, BB, B, C or D.

Each of these grades is associated with a risk factor. This aspect is critical for banks to determine their financing conditions.

Conclusions

Taking as a reference the advantages of proper quality assurance carried out on prevention and financial contingency, savings in operational expenses (OPEX) and bankability increase, the following question arises: Is it really expensive to invest in quality?

The truth is that investing properly in quality assurance reduces operational expenses (OPEX) and risks in the medium and long-term, which means obtaining better financing conditions by increasing the assets' bankability.

The increase in demand for PV projects in India requires laying the groundwork for a future that ensures predictability in power generation, investor confidence and the reputation of the Indian market worldwide.

[Find out how we can help you with your photovoltaic project. Click here!](#)