

Interview Transcript 3: Participant P3 (Operations Technician, Ghaziabad)

Interviewer: Can you share a little bit about your current job? What experience do you have in the solar power area?

P3: In Ghaziabad, I am employed as an operations technician at a small solar power facility. I've been doing daily maintenance and performance monitoring in this capacity for around five years.

Interviewer: How long have you been looking after solar power plants?

P3: I have worked at this specific plant for the entire five years that I have been in this capacity.

Interviewer: What obstacles have you faced while maintaining the efficiency of your solar power plant?

P3: One of the biggest problems is dust collection, particularly in the arid months. Our productivity is also impacted by adjacent trees' and buildings' shadows, especially in the morning and evening.

Interviewer: In your experience, do you think dust on the panels affects how well they work?

P3: About 11–14% of efficiency can be lost due to dust. Regular cleaning of the panels is necessary to prevent a major decline in output.

Interviewer: How does shadow impact the plant's ability to produce electricity?

P3: In the affected areas, shading might result in a loss of power production of up to 80%. To reduce this impact, we've had to remove some trees and move some panels.

Interviewer: What upkeep procedures are in place now to deal with problems like dust buildup and shade?

P3: To avoid shade, we have a crew that constantly trims the surrounding vegetation, and we do hand cleaning twice a week.

Interviewer: How frequently do you maintain or clean the solar panels? Which techniques do you employ?

P3: Every two weeks, we manually clean the panels. Although that's not the most effective approach, our budget permits it.

Interviewer: Have you seen any adjustments in performance following maintenance or cleaning tasks?

P3: Yes, we often observe a 7–10% increase in power output following cleaning.

Interviewer: What impact do weather conditions like wind, humidity, and temperature have on solar panel performance?

P3: Efficiency is decreased by temperature, particularly in the summer. In certain conditions, wind can either deliver more dust or clean the panels.

Interviewer: Have you put any plans in place to lessen these environmental factors' detrimental effects?

P3: To combat the sticky dust, we've started cleaning more regularly throughout the monsoon season. We are also considering installing various cooling equipment to address the temperature problem.

Interviewer: What tactics, in your opinion, might be used to raise the efficiency of the solar power plant?

P3: Regular cleaning would be beneficial, particularly in the dry season. Using automated cleaning equipment could also lower labor expenses and boost productivity.

Interviewer: Do you think any cutting-edge methods or technologies could be implemented to improve performance?

P3: I think Artificial intelligence is better for maintenance as it would enable us to foresee problems before they turn into significant ones.

Interviewer: How do you keep an eye on the solar panels' performance? Which metrics are you monitoring?

P3: We measure panel temperatures and power output using simple monitoring instruments. Every week, we review these numbers.

Interviewer: Have you seen any trends in the performance data that point to certain areas that need work?

P3: It's true that efficiency decreases noticeably following a dust storm, which is why we're thinking of cleaning more frequently following such incidents.

Interviewer: Would you like to add anything more about the efficiency of solar power plants or the difficulties you encounter?

P3: The implementation of some of the more modern technology that could aid improve efficiency is hampered by budgetary restrictions.

Interviewer: Do you have any suggestions for additional study or areas that require more investigation?

P3: Further study into reasonably priced cleaning agents for smaller plants would be beneficial.