

Interview Transcript 6: Participant P6 (Plant Supervisor, Noida)

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

P6: I oversee a sizable solar power facility in Noida as the Plant Supervisor. I've been managing the daily operations and making sure the facility functions well for around eight years now.

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

P6: I have eight years of experience operating solar power plants, all of which have been with this facility.

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

P6: The biggest obstacles are dust buildup and shadowing. Noida has a very dusty atmosphere, and we also have problems with buildings close by providing shade.

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

P6: Especially during the dry season, dust might cause an efficiency reduction of up to 10%. The panels are a constant struggle to keep clean.

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

P6: Shading can reduce power output by up to 70%, especially if it covers a sizable percentage of the panels. To reduce this, we've had to make many changes, such as relocating some panels and pruning some vegetation.

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

P6: Twice a week, we use an automated cleaning system. To avoid shadowing the plant, we also have a crew that comes in on a regular basis to check on it and cut the surrounding foliage.

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

P6: The panels are cleaned twice a week by the automatic system, and we perform manual checks once a month.

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

P6: Yes, performance usually improves by 10–12% right away following cleaning.

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

P6: Warm weather lowers productivity, particularly in the hottest summer months. Cleaning is made more difficult by humidity, which makes dust stickier. While wind can occasionally be helpful in clearing away dust, it can also introduce additional material.

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

P6: Yes, we have some plans like we have installed colling systems and we changed our schedule seasonally.

Interviewer: What tactics, in your opinion, might be used to raise the solar power plant's efficiency even further?

P6: I think using automatic cleaning technology more often could be beneficial. To find problems more rapidly, we're also looking at the prospect of employing drones for aerial inspections.

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

P6: Predictive maintenance systems powered by AI has great potential. They would enable us to use real-time data to optimize maintenance schedules.

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

P6: We employ a sophisticated monitoring system that continuously measures temperature, shading effects, and power production.

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

P6: Indeed, we have noticed that environmental conditions cause efficiency to decline more quickly in some parts of the plant. This has made it easier for us to focus our maintenance efforts.

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

P6: It's only that constant progress is essential. We're constantly searching for innovative techniques and technologies to improve the productivity of our plant.

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

P6: I believe it would be highly advantageous to conduct additional research on the long-term impacts of environmental factors on panel longevity.