Problem Statement 1: Minimizing Soiling Losses in Cement Plants

We have installed significant solar capacities in cement plants, including those of Ultratech, NCL, and others. These plants experience year-on-year underperformance due to high soiling losses caused by cement dust. Currently, we address this issue using water and, occasionally, chemicals for cleaning. However, the process is highly manual and labor-intensive.
We are seeking a **technology-driven solution** to extract dust from solar panels efficiently, possibly using **electrostatic force or other innovative methodologies**.

- Soiling Loss % considered at 3%
- Targeted cleaning cycles annually – 36

Data shown from Apr-Dec'24

Cement Plants Case Studies:

1) NCL Kondapally (South Zone):

Soiling %	Generation Loss (in units)	Estimated Performance Ratio	Actual Performance Ratio	Revenue Loss (in Lakhs)
33.85%	1,22,730	61.31%	54.15%	4.5

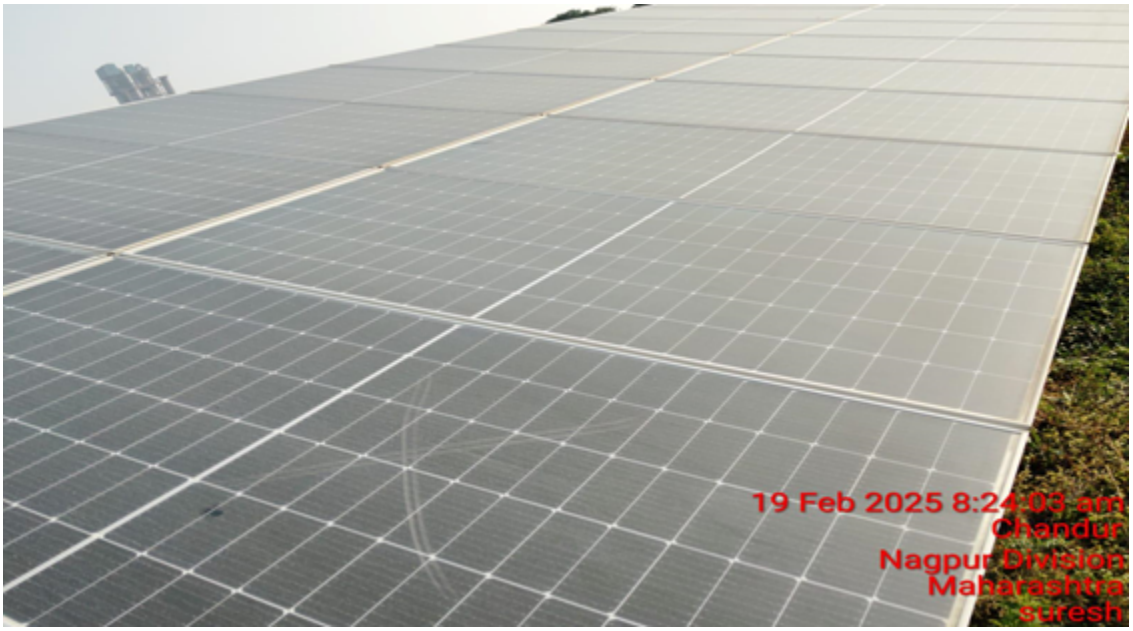
Before Cleaning

After Cleaning

2) UTCL Manikgarh (West Zone):

Soiling %	Generation Loss (in units)	Estimated Performance Ratio	Actual Performance Ratio	Revenue Loss (in Lakhs)
10.56%	4,64,306	74.39%	72.70%	13.27

Before Cleaning



After Cleaning

Case Study for Steel Plant - Shyam Metallics (East Zone):

Soiling %	Generation Loss (in units)	Estimated Performance Ratio	Actual Performance Ratio	Revenue Loss (in Rupees)
26.74%	51,773	65.37%	62.74%	2.32

Before Cleaning

After Cleaning