

A quick guide to

# Selar panel cleaning

## Why is cleaning solar panels important?

Over a period of time, dust and debris, also known as soiling, makes a thick layer on the solar panel, preventing sunlight from directly falling on its surface. This affects the performance of the solar panel and decreases the total power generated. To ensure your solar panels work efficiently and generate maximum power, regular cleaning is absolutely necessary.

In addition to solar panel cleaning, we at Fenice Energy also include technical inspection of the solar panels and other system components such as the inverter, ACDB etc. to diagnose problems early, and prevent safety hazards and abrupt system breakdowns.



Soiling: a major contributor to power generation loss in rooftop solar plants.

#### How to clean a solar panel?

Cleaning a solar panel can be easy or tricky depending on where the solar panel is installed, what equipment you are using and how dirty the panel is.

What is paramount is the safety of the person who is cleaning the solar panel. To avoid any injury while cleaning, we ensure our engineers follow all safety pecautions.



#### Water-based cleaning of solar panels

The most basic type of solar panel cleaning is water-based cleaning. It can be done by anyone if they have the right tools and if they follow the safety precautions.

Depending on the dust accumulated on the solar panels, water-based cleaning can take more or less time. Here is a small procedure to carry out solar panel cleaning.

#### **Tools required:**



Pressure hose/ Pressure water gun





Ladder



Wiper



Cleaning brush

Water pump

We advise you to take necessary precautions to avoid any mishappening while cleaning the solar panel by yourself.

To ensure safety while cleaning the solar panels we equip our engineers with a helmet, protective eye gear, gloves, shoes, safety jacket and a safety harness.

### Basic procedure to clean solar panels

- 1. Pour water on panels either by using a hose pipe or pressure water gun.
- 2. Use a brush to clean the dirt.
- 3. Use pressured water to remove any dirt left.
- 4. Use a wiper to wipe away the wet dirt and water from the solar panels.
- 5. Make sure the edges of the panel are cleaned as well and no dirt is left in the corners.



#### Do's

- 1. Always take necessary safety precautions while cleaning.
- 2. Remember that plain water works best in 99% of cases.
- 3. Use gentle linear motion to clean solar panels.

#### Safety precautions

- 1. Always wear required safety gear including gloves, helmet, non-slippery hard shoes, and face mask.
- 2. Don't clean solar panels during bad weather i.e. strong windstorm or heavy rain.
- 3. Avoid grabbing solar panels as a way to secure your position on the roof.
- 4. Make sure your roof is dry and non-slippery on the day you do the cleaning.
- 5. The roof must be strong enough to bear your weight.
- 6. A tilted roof increases the chance of your slipping and getting injured. Use a safety harness.

### Don'ts



- 1. Do not use abrasive or hard bristle brushes on the panel surface.
- 2. Do not step on the panel surface.
- 3. Do not spray pressurized water directly at the sealed interfaces of the module (junction box, edge seal and connectors).
- 4. Do not brush or clean the backside of the module. This may cause accidental stress to lead wires and junction box.
- 5. Do not keep anything on the modules other than wiper or cleaning material.
- 6. Do not use excessive force in removal of tough dirt; this may crack the solar panel glass.
- 7. Never use acidic or alcoholic solutions as this can corrode the modules.
- 8. Never submerge the panel into water. Clean only the top glass surface with water.
- 9. When the modules are dry, do not scrub the dirt, as this may lead to scratches and cracks on the solar panel glass.

### Effect of cleaning on power generation

Power generation of the plant declines depending on how dense the soiling is. Soiling accumulation varies based on the location, surrounding environment, tilt of the solar panels etc. If panels are left uncleaned for 1 month, approximately 12%-15% generation loss is observed. Low power generation raises your electricity bill.

This can be avoided by cleaning the plant regularly: we recommend at least once in two weeks.



#### "This is so easy! Why do I need a professional from Fenice Energy to clean my solar panels?"

- 1. Our engineers are trained to clean solar panels with the right procedure and tools to avoid any damage.
- 2. We don't want you to get injured someday. Our engineers are equipped with safety tools such as harness, helmet and non-slippery boots .
- 3. Only cleaning solar panels is not enough. Our engineers also inspect the site for any defect such as rusting, loosening of bolts, wire cut etc.
- 4. Our engineers visually inspect possible malfunctioning of other component of your solar power system such as inverter, ACDB etc.
- 5. After every cleaning visit we send you a report, which includes inspection checkpoints and before- and- after images of your solar panel and other components.

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