

Wind fencing for solar fields



Nevada, USA

- Protect from wind
- Minimize dust
- Protect panels from debris and wildlife
- Be the first one up and running after a storm
- Reduce cleaning of the panels
- Reduce water consumption
- Reduce structural cost
- Longer collecting time during windy days
- Security / perimeter fence integration



Alberta, Canada

California, USA



Dust

Even modest winds can pick up dust that deposits on the solar panels. Over 90% of dust that is transported stays close to the ground. A perimeter wind fence will filter out a lot of the dust. It will also cut the wind flow under the solar panels and therefore minimize the amount of dust that has settled between the panels being blown back onto the panels.

According to some panel manufacturers dust can decrease irradiance by up to 15%, so dust cannot be ignored. Windfences therefore cut cleaning and water consumption costs by increasing the time in between cleanings.

Debris

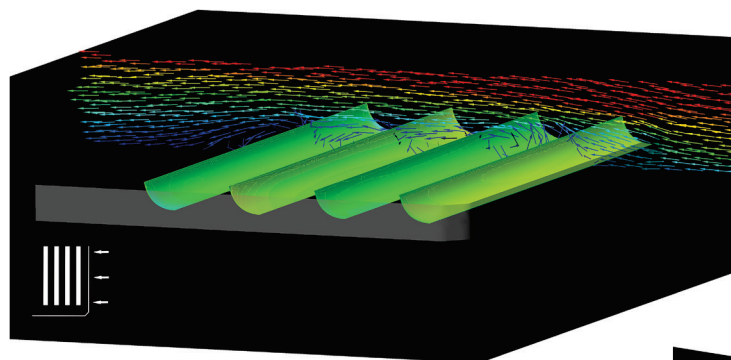
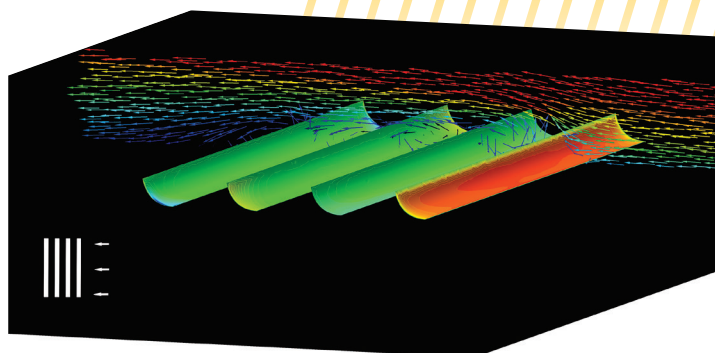
Security fences can be set up to catch debris; wind fences will do the same thing, but also catch the smaller debris such as sand which can damage even the most robust panels.

If a storm hits, with WeatherSolve wind fencing for your solar field you will be able to rest at night knowing that your panels are protected.

Wind fencing for solar fields



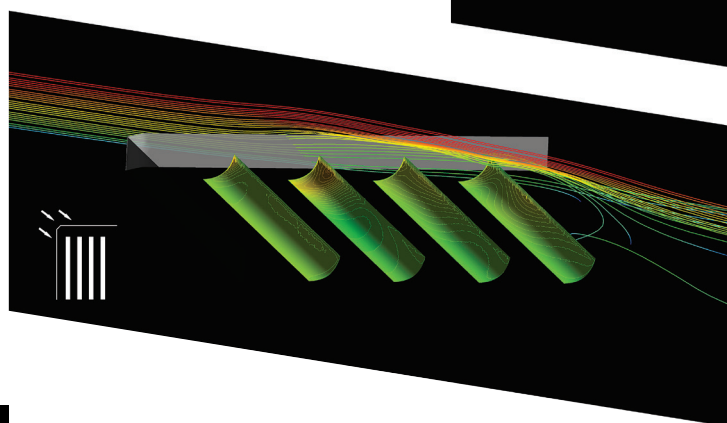
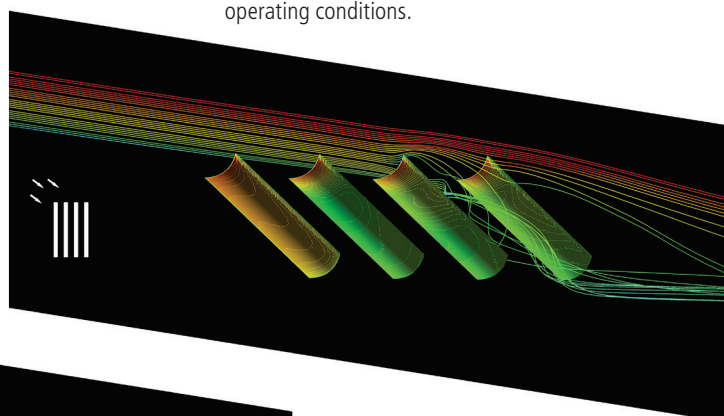
1 Wind loadings on the solar panels vary depending on their location. The outside panels are 2.25 times more heavily loaded than interior one as shown here



3 This image shows the effect when the wind runs at a 45° angle to the panels. In this case it can be seen that the ends are heavily loaded. In terms of panel operation this generally means that:

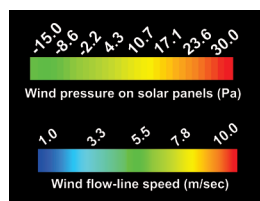
- A. The entire length needs to be stowed if the winds exceed the operating threshold.
- B. The ends need special design for both stowed and operating conditions.

2 If a wind fence is positioned to protect outside panels the loading drops to less than the internal panels. This means that the same design can be used for all panels thus saving costs.



4 Here a wind fence removes the worst of these conditions, thus increasing operating ranges and decreasing capital costs.

Key



Data provided by Midwest Research Institute Global for one set of solar panels, wind fence types and local topographical assumptions. Contact WeatherSolve Structures to arrange for MRI Global analyses specific to your situation.

