

Frequently Asked Questions



SMARTFLOWER

Q: Why is the Smartflower more efficient than other forms of solar PV generation?

A: For three reasons.

First, the Smartflower tracks the sun from dawn to dusk, ensuring that its solar panels are always at a 90-degree angle to the sun, optimizing the radiation it receives, unlike most other solar setups. Smartflower does this through a specially designed algorithm using the specific longitude and latitude of the site where it is installed. This precise tracking can increase productivity by as much as 40%.

Second, the Smartflower's unique design allows for natural cooling of its solar panels. Rather than positioning the panels close to a roof or the ground, Smartflower's panels are elevated and naturally cooled by the air that passes behind each of its panels throughout the day. This natural cooling can increase each panel's productivity by as much as 10%, depending on the region in which the Smartflower is installed.

Third, the Smartflower automatically self-cleans its panels every morning and every evening. Each panel cleans the panel beneath it whenever the Smartflower opens or closes using a long brush on its outer under edge. This allows the Smartflower to avoid the loss in production that typically occurs with other solar PV devices, which naturally become dirty over time. This automatic cleaning feature improves productivity by another 1-2%.

Q: How much electricity does the Smartflower produce?

A: The best measurement of productivity is the kilowatt hour, usually shown as kWh. Smartflower typically produces anywhere from 4,000 to over 6,200 kWh per year depending on where it is located. Particularly sunny climates, like the Arizona desert cities, will produce at the top of the range. More temperate climates with fewer sunny days like in the Midwest or Northeast will most likely produce in the lower half of that range.

Q: Is the electricity from the Smartflower enough to power a home or business?

A: In the United States and Canada, most homes consume more electricity in a year than can be produced by one Smartflower or the typical rooftop system. The same is certainly true for most American and Canadian businesses. For most homes and businesses, which are already connected to the grid, a solar system serves to reduce, not eliminate, the customer's reliance on the grid. For those customers who are focused on entirely meeting their electricity requirements from a renewable source they control, the best approach is to use several Smartflowers or to pair Smartflower with other renewable energy generators, like a wind turbine, geothermal energy, or even rooftop or groundmounted solar panels. One Smartflower may, however, provide more than enough energy to power a cabin, cottage, or a tiny house.

One Smartflower may well also provide enough electricity to power a remote agricultural watering station, a highway rest stop, an electric bike recharger, or a myriad other uses that do not have heavy energy needs. For all these customers, their limited energy requirements can be fully satisfied by the Smartflower.

Q: How does the owner know how much energy the Smartflower is producing?

A: At the moment, energy production is determined by reviewing the information provided by the control box inside the Smartflower. Within the next few months, all Smartflowers will be upgraded to allow for remote monitoring. This means that the owner and/or the dealer may determine the energy production and whether there are any problems from virtually anywhere in the world through their smartphone or tablet.

Q: Can the customer install the Smartflower?

A: Installation requires a certified technician. The Smartflower is already fully assembled before it reaches the installation location and, thus, is very simple to install. However, placement of the Smartflower requires a crane or large forklift, and connection to the building's power grid by law requires a licensed electrician. Additionally, to ensure proper setup of the Smartflower, it is very important that the initial operational programming be performed by a Smartflower certified technician. We do require that a certified technician handles the installation in order for the warranty to be valid.

Q: Does installation of the Smartflower require any special permit or other government approval?

A: There is no general rule on what, if any, permit or other approval may be needed for installation, as the applicable governmental requirements vary from location to location and site to site. For most jurisdictions in the United States, it is likely that some form of permit will be required, and setback requirements need to be satisfied. Unless the customer wishes to do it themselves, the authorized Smartflower reseller will research and obtain any necessary permitting for your location.

Q: How much area is needed for the Smartflower to operate effectively and safely?

A: Effective operation will be determined by your installer. They will perform a site assessment that includes a shading analysis, which is key to determining whether nearby trees or buildings might cast shade on the Smartflower at some point during the day. Since each site is different, there is no definitive answer, but of course the more unblocked or unshaded access to the sunlight, the better. At a minimum, for installation and safety, the Smartflower must have a clear area of 17 feet (5.18 m) around it.

Q: What happens to the Smartflower in extreme weather conditions, such as hail, heavy snow and cold, or desert heat?

A: The Smartflower has been tested to operate fully at temperatures as hot as 104 degrees Fahrenheit (40 degrees Celsius) and as cold as -4 degrees Fahrenheit (-20 degrees Celsius). At extreme temperatures outside of that wide range, the Smartflower may have some diminished operation but should not be permanently harmed.

The Smartflower has been tested under significant hail conditions and has proven to meet the industry standards for solar panel durability under these conditions.

In heavy wind conditions, the Smartflower is designed to protect itself before there is a problem. If sustained winds of 5 seconds or longer reach 32 mph, the Smartflower panels move automatically into a horizontal position (Safety Position 1) to allow the wind to pass over and under the panels but remain open to continue producing energy. If winds increase to 39 mph or higher the panels automatically fold up and move down into a secure position (Safety Position 2). As long as the Smartflower has been properly installed, it should remain secure in its closed position, even in hurricane-level winds.

The Smartflower's tracking movement over the course of the day and self-cleaning gives it the special advantage of automatically removing snow before it builds up. If very heavy snow builds up during the night while the Smartflower is closed, it may be necessary to remove the snow in front of the closed unit before the panels begin to open in the morning.

Q: What maintenance is required for the Smartflower and can the customer do it?

A: Maintenance is required every two years—this is mandatory to preserve the warranty from Smartflower. It typically involves no more than lubrication of certain moving parts, checking to ensure all connections are secure, and upgrading the system software as necessary. The maintenance should be performed by a certified technician.

Q: What are the warranties on the Smartflower?

A: Smartflower offers a 2-year warranty. In addition, Smartflower passes along to the customer the limited warranties provided by the manufacturers of the key components. That includes a 5-year limited warranty on the tracking device, a 10-year limited warranty on the inverter and a 25-year limited performance warranty on the solar panels. The specific terms of these warranties are available upon request.