



PV SOLAR OWNER'S MANUAL



TABLE OF CONTENTS

IMPORTANT INFORMATION.....	3
OPERATING SAFETY INSTRUCTIONS.....	4
SYSTEM DESCRIPTION.....	5
GENERAL MAINTENANCE.....	7
SYSTEM MONITORING & TROUBLESHOOTING	8
FREQUENTLY ASKED QUESTIONS.....	10
GEOSCAPE LIMITED WARRANTY.....	11
HOW TO GET WARRANTY SERVICE.....	12




Important Information

Congratulations on your decision to produce clean, renewable energy with a Geoscape Solar Energy System! Your solar panels and components are designed to provide clean, efficient solar energy to reduce your utility energy consumption for decades to come, and are virtually maintenance free. Other than occasionally cleaning your solar panels and keeping them free of debris that can hinder performance, there are no user serviceable parts inside any of the system components. We ask you to review the contents of this guide to ensure that you are familiar with your system, know how to monitor it, check for potential maintenance issues and contact Geoscape Solar for any repair or warranty issues that may arise.

Geoscape Solar Contact Information	
Tel #	973-535-GEO1 (4361)
Fax #	973-944-7539
Email	customerservice@geoscapecsolar.com
Address	Geoscape Solar 160 South Livingston Ave. Suite 113 Livingston, NJ 07039

Summary of Key Components	
System Size (DC)	
PV Module Make & Model	
# of Modules	
Inverter Manufacturer & Model	
# of Inverters	
Permission to Operate:	

Key System Information	
	<p>As your system comes online, Geoscape Solar will provide the following information. Please record the registration numbers below for your records.</p>
SRP Registration #	
New Jersey Certification #	
Locus Monitoring Login <small>(secure.deckmonitoring.com)</small>	Datareadings.com
Locus Monitoring Username	Your e-mail
Locus Monitoring Password	Welcome

Operating Safety Instructions

Geoscape Solar practices and recommends the highest national standards regarding Health, Safety and the Environment.

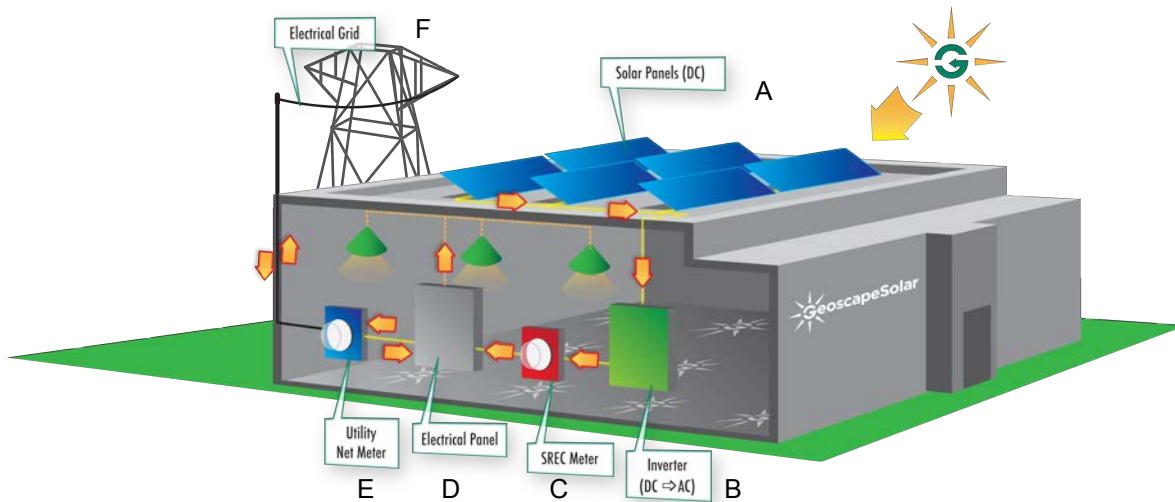
- Solar products supplied by Geoscape Solar are designed to meet all applicable standards and codes.
- All service work must be done in strict accordance with local and national electric codes and any other pertinent safety standards.
- Review and follow all safety instructions and all other instructions supplied with all the materials and components provided with the Geoscape Solar system before any service work begins.
- Avoid service activity in wet or damp conditions.
- Do not attempt to service the system unless you are fully qualified to do so and have prepared the site properly.
- **Please pay attention to all safety messages in the guide which are designated by the Caution Icon seen below:**



For questions or concerns regarding your system check the Troubleshooting Guide.

Disclaimer of Liability: Geoscape Solar does not assume responsibility and expressly disclaims liability for loss, damage, or expense that is not the result of Geoscape Solar providing defective components or faulty installation (examples include, but are not limited to, lightning, storms, vandalism, falling or thrown objects or your misuse and/or intentional damage of the System).

System Description



This drawing is for illustrative purposes only.
It is not to scale and may not accurately represent equipment installed on your property.

- A. Solar Panels & Solar Array
- B. Inverters
- C. Production (SREC) Meter
- D. Electrical Service Panel
- E. Utility Net Meter
- F. Electric Grid



By law, any solar system without batteries is not allowed to run during a utility outage. Therefore, your system will automatically shut down during an outage and restart when the utility power has resumed. **This means you will not have any power during a blackout - neither from the utility, nor from your solar system.**

The major elements included in the Geoscape Solar system are described below:

A. Solar Panels & Solar Array

Solar modules convert the sunlight into direct current (DC) electricity. Your Solar Array is comprised of all the solar modules installed, wired together in an efficient sequence to maximize electrical output of the entire system.

B. Inverters

The inverter converts direct current (DC) to alternating current (AC) – the same as the electricity you purchase from your local utility. The inverters are the interface between your solar array and your home's electric systems. The inverters will report production data to a web-based display for your system performance. The web-based monitoring solution will be determined by the specific inverter(s) used on your system.

C. Production (SREC) Meter

Geoscape Solar installs a separate, ANSI C.12 compliant meter to accurately track your solar system's production. Unlike the utility meter, which is consumption-focused, the production meter reports ONLY what your solar system is producing. In essence, this meter acts as your solar "odometer," tracking aggregate solar production over time.

D. Electrical Service Panel

The electricity generated from your solar system will feed your property through the existing electric service panel, which controls and protects the flow of electricity throughout your home. Geoscape Solar wires the system according to NEC code to ensure a safe and effective connection to your property's electrical equipment.

E. Utility Net Meter

Your utility company will "swap out" your existing meter and replace it with a new net meter after installation of your system is complete. A utility meter tracks net power usage, spinning forward when electricity is being drawn from the grid, and backwards, generating a credit, when your system is producing more electricity than is being used.

F. Electric Grid

The electricity provided by the utility company flows through the electric grid. The grid acts as your property's backup electricity source when solar production alone is not sufficient to meet your electrical needs.




General Maintenance

A Geoscape Solar system is characterized as “ultra low maintenance,” partly due to having no moving parts or user serviceable components. However, the system does require consistent monitoring and maintenance in order to maximize the long-term efficiency, safety and reliability of your solar investment.



Tips & Warnings

It is recommended that you do periodic visual inspections of your solar system throughout the year. Here are some quick tips to keep in mind:

-  Because of the potential danger of falling off a roof, we recommend you do not go on the roof for any reason. Only an OSHA trained, Geoscape Solar professional with proper ladders and personal protection equipment should perform cleaning, maintenance or repairs on your solar system.
-  Do not attempt to clean or otherwise come in contact with the surface of a solar module with a broken glass face; this could result in a dangerous electrical shock.
- If a broken module, wire or other component is detected, contact Geoscape Solar immediately.
- If there is a build-up of bird droppings, it may be necessary to arrange for a Geoscape Solar professional to make an additional service visit to hand clean the panels with a sponge and soapy water. Additional fees may apply.
-  Do not use abrasive cleaners or cloths on solar modules, as this may scratch the glass face

System Monitoring & Troubleshooting

Your Geoscape Solar system has been installed with Web-based monitoring that reports the performance of your solar system. The monitoring equipment collects data from the inverters and reports out to a Web portal, allowing you and Geoscape Solar to monitor your system's performance through a variety of metrics. Consistent monitoring will determine whether your system is performing at maximum efficiency or requires service.

Once your system is Online, you will be provided with the Web portal address and login information.

NOTE: These troubleshooting tips provided below are a *basic guide to system issues*.
Contact Geoscape Solar if the problem is of a more serious nature.

- **Problem: Not producing as much electricity as expected.**

If under-performance is suspected, check the following:

PROBLEM	SOLUTION
Parts of the array are covered with dirt, debris or snow	Clear the debris, if possible
Shading from trees (with or without leaves) or other objects	Remove shade obstructions, if possible
It is raining, snowing, cloudy or hazy	Wait for better weather
The sun is very low in they sky (early in the morning or late in the afternoon)?	Wait for the sun to move higher into the sky
The outside energy is very hot	Re-check when the temperature cools
Your system's circuit breaker tripped	Reset the breaker. <i>If it continues to trip, contact Geoscape Solar.</i>
Your inverter is displaying any kind of error code	Contact Geoscape Solar
There has been a loss of utility power to your building	Wait for resumption of utility service
I don't see system performance on the Web portal	Check your internet connection. Check your router for any setting changes. Check for power to the monitor.
System Performance is consistently below expectations	Contact Geoscape Solar

- **Problem: Your utility bill is higher than expected.**

Possible causes of higher than expected utility bills can be due to:

- 1) Your electricity consumption has been higher than normal.
 - Have you used more A/C due to hotter temperatures?
 - Have you used more heat due to colder temperatures?
 - Do you have a higher usage of electricity due to new appliances, computers, TVs, etc?
- 2) Your system is producing less than expected (see above for possible causes).
- 3) Your utility new meter is malfunctioning.

Your inverter(s) and monitoring equipment will indicate how much electricity your system is producing. A solar system generates electricity in proportion to the amount of sunlight on the solar array and generates no electricity at night. Peak power generation is on a clear day when the sun is directly above the solar array. With time and experience you will become familiar with the normal operating performance, which is a function of time of day, season, temperature, cloud cover, array soiling and shading. Maximum power is achieved under cool temperatures when the sun is high and both the sky and the solar panels are clear. With time and experience, you will become familiar with the normal operating performance, which is a function of time of day, season, temperature, cloud cover, array soiling and shading.



Geoscape Solar strongly recommends that property owners do not explore the wiring systems or components beyond the level at which they interact with their usual commercial power systems and appliances. Please do not touch the interior wiring of any conduits, breakers, disconnects or switches. Tampering with any of the components or wiring of your System may void your warranties.



FREQUENTLY ASKED QUESTIONS

MONITORING:

How do I know whether my system is functioning properly?

From the Web portal, you will be able to see system performance. Any errors will trigger alerts on the portal that we will be able to troubleshoot.

What if I don't see system performance on the Web portal?

If your system is not reporting properly with the Web monitor, this may indicate either a network communication issue or a power line communication issue causing data transfer problems. This does not necessarily mean that your system is not producing power. The inverters and monitoring equipment have memory to store data for the times when the monitor is not reporting properly. Once proper communication is restored, the stored data will be uploaded to the Web portal and the performance history will be accurate.

DATA AND NETWORKING:

Do I need a broadband Internet connection to use monitoring? Can't I just use dial-up?

A broadband connection is required for monitoring support. Also, in situations where the installer would like troubleshooting assistance from the monitoring company, a broadband connection is required in order to perform the troubleshooting.

Do I need to have any special software installed on my home computer?

No. All monitoring user-interface elements are accessed via a common, Internet web-browser.



Geoscape Solar Limited Warranty

Geoscape Solar warrants your Solar System as follows:

1. **Installation Warranty**. The System shall be free from workmanship defects for a period of five (5) years from the date of commissioning the System. During the warranty period, excluding items covered in (2) below, Geoscape Solar will repair or replace any defective part, material or component or correct any defective workmanship, at no cost or expense to you (including all labor costs), when you submit a valid claim to us. Geoscape Solar will use new parts (identical to, equivalent to or better than the original parts) when making such repairs or replacements.
2. **System Components Warranty**. The following components of your System carry separate manufacturer warranties: (i) Solar Panels; (ii) Inverters; (iii) Racking; and (iv) Solar Production Monitors. In the event of a warranty claim with respect to any of these four components, Geoscape Solar will work on your behalf with the manufacturer to achieve performance under the applicable warranty. Geoscape Solar assumes no liability or responsibility for any costs associated with the repair and/or replacement of these components, including (but not limited to) removal, installation and/or shipping of faulty and/or replacement equipment.
3. **Roof Warranty**. When we penetrate your roof during a System installation, we will warrant roof areas that are within a three (3) inch radius of our roof penetrations. This roof warranty will run for a period of ten (10) years from the date of commissioning the System.

This warranty does not apply to:

1. Defects or malfunctions resulting from failure to properly operate the System in accordance with the printed instructions provided;
2. Internet communication hardware and/or software (e.g. routers, networking hubs, etc.);
3. Any part(s) of the System that have been subject to accident, unauthorized repair or alteration, misuse, or abuse, fire, flood, lightning or the like;
4. Indirect, incidental or consequential damage to property or persons.

To make a valid warranty claim, you must:

1. Notify Geoscape Solar in writing within ten (10) days of the first knowledge of the defect; and
2. Give Geoscape Solar the first opportunity to make any repairs, replacements or corrections to the System.

PLEASE NOTE THAT THIS WARRANTY IS THE ONLY WARRANTY MADE BY GEOSCAPE SOLAR AND THAT THERE ARE NO OTHER REPRESENTATIONS OR WARRANTIES, EXPRESS OR IMPLIED, AS TO THE MERCHANTABILITY, FITNESS FOR ANY PURPOSE, CONDITION, DESIGN, CAPACITY, SUITABILITY OR PERFORMANCE OF THE SYSTEM OR ITS INSTALLATION. WE MAKE NO WARRANTY WHATSOEVER, EXPRESS OR IMPLIED, EXCEPT AS EXPRESSLY PROVIDED IN THE GEOSCAPE LIMITED WARRANTY DELIVERED TO YOU WITH THE SYSTEM. ANY REPAIR OR OTHER COSTS NOT COVERED BY THE MANUFACTURER LIMITED WARRANTY OR THE GEOSCAPE LIMITED WARRANTY SHALL BE YOUR SOLE RESPONSIBILITY.



How to Get Warranty Service:

If your system is not performing as you expect, please review the troubleshooting section of this guide. After reviewing the guide, if you determine your system is not working, please contact Geoscape Solar at 973-535-4361. We will help you troubleshoot the system and arrange for service if necessary. If the issue is covered by the full warranty, the system will be repaired at no cost to you.

Warranty information and coverage for your specific solar panels and inverters can be found on the Geoscape Solar flash drive included with this manual. Please feel free to contact us should you have any additional questions or concerns.

Welcome to Geoscape Solar!

