

Solar Measurement Tools

Renewable NRG Systems' solar measurement products deliver the data you need to plan and successfully operate your utility-scale photovoltaic project—from pre-construction resource assessment to operational monitoring and forecasting.

Measure your project's potential seamlessly

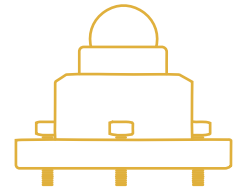
Our sensors, instruments, and turnkey systems are designed to work together for unrivaled ease-of-use—from installation to redeployment.

Reduce uncertainty with bankable data

With your choice of pyranometers and a standardized design, our systems provide precise, site-specific measurements in any terrain.

Rely on our industry-leading customer service

All Renewable NRG Systems solar products are backed by our logistics, expert technical services, and two-year warranty.



"As a key meteorological equipment vendor, Renewable NRG Systems provides top-notch products that are critical to our development efforts. Their SRA System was a cost-effective tool to improve our solar resource understanding and give comfort to our customers and financiers

- Eric Spigelman
Engineering Manager
Lincoln Renewable Energy



Solar Resource
Assessment



Solar
Monitoring



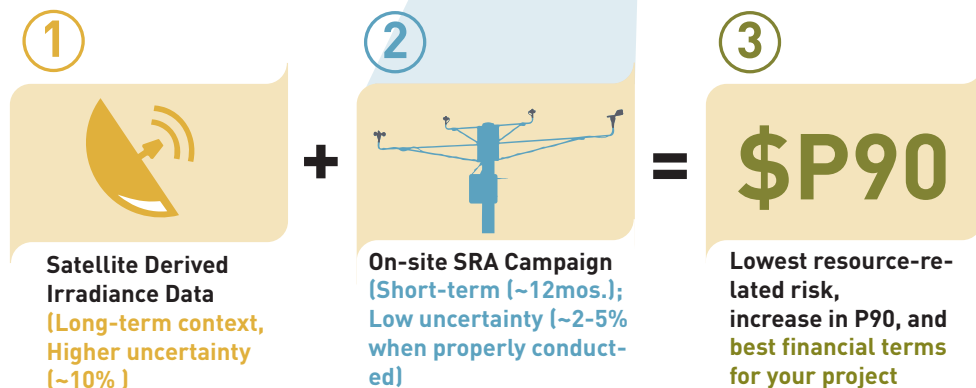
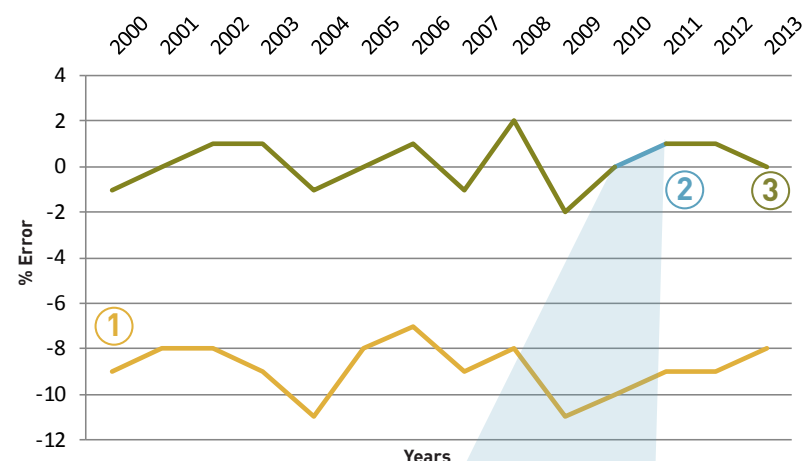
Solar Resource Assessment

SRA System

The Renewable NRG Systems SRA System is a turnkey measurement system for the prospecting and formal resource assessment of utility-scale photovoltaic projects. Available with thermopile or photodiode pyranometers, this integrated system ships as a complete kit for easy installation and precise data collection.

Why Measure?

When properly installed and maintained, site-specific solar resource assessment campaigns provide an accurate context to correct long-term satellite derived irradiance data.



For strongest project ratings, Fitch Ratings advises¹: Multiple years of actual, valid, onsite ground data correlated to the most relevant long-term ground or satellite data.

1. Fitch Ratings, "Rating Criteria for Solar Power Projects"

Data Logger/Communications/Power Supply

- **SymphoniePRO™ Data Logger** – An advanced, user-friendly data logger purpose-built for renewable energy
 - o High-resolution, high-accuracy analog measurements via 16-bit ADC and differential inputs
 - o User-selectable averaging interval including 1-minute option
 - o Compatible with thermistor sensors for pyranometer case temperature measurements
 - o 1 Hz sample data storage enables advanced studies (e.g. “ramp studies”)
- **Symphonie iPackGPS communications and autonomous power module**
 - o Options: Cellular (GSM/GPRS or CDMA) or SCADA integration



Solar Sensors

Redundant Global Horizontal Irradiance

GHI

Optional Diffuse/Sunshine Duration

OR

DIF/SUN DUR



Li-Cor
LI-200R

Photodiode



Hukseflux
LP02

Second
Class



Hukseflux
SR11

First
Class



Hukseflux
SR20

Secondary
Standard



Delta-T SPN1
Sunshine
Pyranometer*

ISO-9060

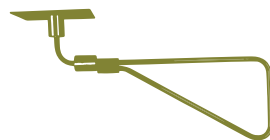
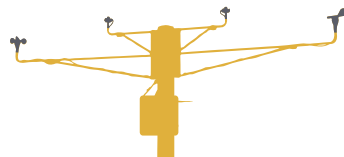
INCREASING ACCURACY

* Providing global, diffuse, and sunshine duration



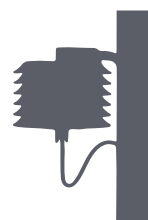
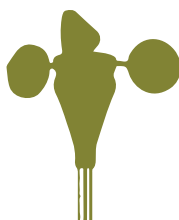
Tower

- 2.2m tower height:
 - o Top-mounted pyranometers prevent tower reflections and shadows
 - o Solar sensors remain within a step ladder's reach for easy routine maintenance
- Tubular tower breaks down for easy transportation
- Tilt-up design enables quick installation in less than one day
- Optional plane-of-array (POA) mounting booms are adjustable to any angle and compatible with all industry-standard pyranometers
 - o Angle finder included with each system



Meteorological Sensors

- Wind speed
- Wind direction
- Temperature
- Precipitation
- Relative humidity
- Barometric pressure



Solar Monitoring/ Forecasting

Renewable NRG Systems' weather stations provide the data you need to maximize the performance of your project.

Solar Weather Station:

- SCADA-enabled SymphoniePLUS®3 data logger delivers real-time meteorological data for monitoring and forecasting
- Statistical data available simultaneously through MODBUS and email
- ISO-9060 Secondary Standard Pyranometers



Sensors for OEM Applications

Renewable NRG Systems' sensors provide a low-cost, reliable way to deliver inputs to your PV tracker controller.

- Wind speed for PV tracker control
- Various signal outputs available

About

Renewable NRG Systems is an independently owned company that designs and manufactures decision support tools for the global renewable energy industry. The company's expertise spans solar resource assessment, solar monitoring, wind resource assessment, and wind turbine optimization. Found on every continent in more than 150 countries, Renewable NRG Systems' comprehensive product line includes turnkey measurement systems, data loggers, sensors, Lidar, and turbine condition monitoring systems.

Learn more at www.renewablenrgsystems.com



Worldwide Shipping

- Short lead times
- UPS shippable
- 2 Year Warranty**

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