



What data is contained in the first release of solar and meteorological data?

The solar and meteorological data contained in this first release was based on the 1993 NASA /World Climate Research Program Version 1.1 Surface Radiation Budget (SRB) science data and TIROS Operational Vertical Sounder (TOVS) data from the International Satellite Cloud Climatology Project (ISCCP).

What is NASA's Earth science research program?

National Aeronautics and Space Administration(NASA),through its Earth Science research program,has long supported satellite systems and research providing data important to the study of climate and climate processes. These data include long-term climatologically averaged estimates of meteorological quantities and surface solar energy fluxes.

What is power solar data based on?

The POWER solar data is based upon satellite observations from which surface insolation values are inferred. The meteorological parameters are based upon the MERRA-2 assimilation model. This section provides a summary of the estimated uncertainty associated with the data underlying the solar and meteorological parameters available through POWER.

What is NASA's goal in Earth Science?

Read FAQs NASA's goal in Earth science is to observe,understand,and model the Earth systemto discover how it is changing,to better predict change,and to understand the consequences for life on Earth.

What are the different types of solar parameters?

Parameters fall under 11 categories including: Solar cooking, solar thermal applications, solar geometry, tilted solar panels, energy storage systems, surplus product storage systems, cloud information, temperature, wind, other meteorological factors, and supporting information.

What are the meteorological data/parameters in Power Release 8?

The meteorological data/parameters in POWER Release 8 were based upon the Goddard's Global Modeling and Assimilation Office (GMAO) Modern Era Retrospective-Analysis for Research and Applications (MERRA-2) assimilation model products and GMAO Forward Processing - Instrument Teams (FP-IT) GEOS

## 5.12.4 near-real time products.



NASA Surface meteorology and Solar Energy: Global/Regional Data. Options: Choose a different month and/or data type [in the form below]. Select new region. Choose a month & data type, then Jan : Feb : Mar : Apr : May : Jun : Jul : Aug : Sep : Oct : Nov : Dec : Parameters for Solar Systems Insolation (kWh/m<sup>2</sup>/day)



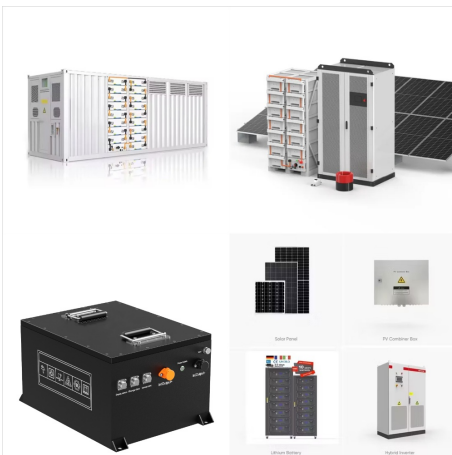
NASA's Prediction of Worldwide Energy Resource (POWER) Project is developing data sets from Earth Science Enterprise climate research to support renewable energy industries. The Surface meteorology and Solar Energy (SSE) data set contains solar parameters principally derived from satellite observations and meteorology parameters from an



Surface Meteorology and Solar Energy (SSE) data set is a 22-year time series of solar insolation and over 200 meteorological parameters relevant to designing and assessing Initial results show that NASA solar radiation measurements were highly correlated with ground observations on flat terrain in temperate regions [Yang et al., 2007].



This article presents the latest parameters and delivery methods that provide global solar energy and meteorological resources on the Internet. Over the past several years the number of parameters in the Surface meteorology and Solar Energy Data Set has tripled. The newest parameters include solar geometry, a suite of wind speed and wind direction data, ???



NASA Surface meteorology and Solar Energy -  
Choices Select parameters and press Submit  
(Default is ALL types) Submit Reset Geometry  
Latitude and longitude (center and boundaries)  
Parameters for Solar Cooking Average insolation  
Midday insolation Clear sky insolation



The ASDC is in the Science Directorate located at the NASA Langley Research Center (LaRC), in Hampton, Virginia. The Science Directorate's Climate Science Branch, Atmospheric Composition Branch, and Chemistry and Dynamics Branch work with ASDC to study changes in the Earth and its atmosphere. The Aerosol Cloud meTeorology Interactions oVer



NASA responded to the DoE need and the NASA Surface Meteorology and Solar Energy (SSE) Project was born. The initial focus was on publishing the same Surface Radiation Budget data that scientists were using to construct and refine global climate models. The SSE Project painstakingly synthesized previously released data sets from NOAA's



NASA Surface Meteorology and Solar Energy - Available Tables - Free download as PDF File (.pdf), Text File (.txt) or read online for free. This document provides solar resource data for a location near latitude -7.769 and longitude 110.378. It includes monthly average values over a 22-year period for insolation on horizontal and tilted surfaces, direct normal radiation, diffuse ???



Zhang, T., P. W. Stackhouse, W. S. Chandler, and D. J. Westberg, 2014: Application of a global-to-beam irradiance model to the NASA GEWEX SRB dataset: An extension of the NASA Surface meteorology and Solar Energy datasets.



# NASA SURFACE METEOROLOGY AND SOLAR ENERGY



Application of a global-to-beam irradiance model to the NASA GEWEX SRB dataset: An extension of the NASA Surface meteorology and Solar Energy datasets. Sol. Energy, 110, 117-131. ??(C).  
Ineichen, P., 2008. Comparison and validation of three global-to-beam irradiance models against ground measurements. Sol. Energy, 82, 501-512. ??(C)



long-term estimates of meteorological quantities and surface solar energy fluxes such as datasets from the NASA/GEWEX Surface Radiation Budget project. Within the last 10 years, it was found that these data could potentially benefit the energy-sector related systems design by providing environmental and climate data. This data is



For example, development of the Surface Meteorological and Solar Energy (SSE) climatological resource database needed by the photovoltaic and renewable energy industries, was especially targeted



Stackhouse, P.W. Jr., J. Barnett, M. Tisdale, B. Tisdale, W. Chandler, D. Westberg, J. Hoell, and B. Quam, 2015: A First Version of the GIS-Enabled NASA Surface meteorology and Solar Energy (SSE) Web Site With Expanded Data Accessibility and Analysis Functionality for the Renewable Energy and Other Applications. American Geophysical Union



Download scientific diagram | NASA Surface Meteorology and Solar Energy: RETScreen Data Ethiopia, Latitude 8, Longitude 38 and Altitude 2324 m. from publication: Study Solar Energy Usage and



The NASA/GEWEX Surface Radiation Budget Release 4-IP data sets contain global 3-hourly, daily, monthly/3-hourly, and monthly averages of surface and top-of atmosphere (TOA) longwave and shortwave radiative flux parameters on a 1°x1° grid. Model inputs of cloud amounts and other atmospheric state parameters are also available in the ancillary data set.

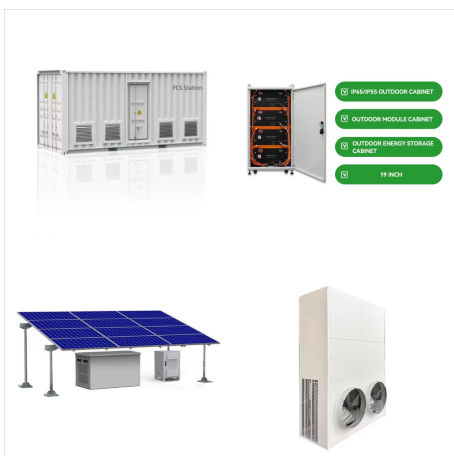
# NASA SURFACE METEOROLOGY AND SOLAR ENERGY



NASA Surface meteorology and Solar Energy:  
Global/Regional Data. Options: Choose a different  
month and/or data type [in the form below]. Select  
new region. Choose a month & data type, then Jan :  
Feb : Mar : Apr : May : Jun : Jul : Aug ???



The Release 5.1 Surface meteorology and Solar  
Energy (SSE) data contains parameters formulated  
for assessing and designing renewable energy  
systems. Parameters fall under 11 categories  
including: Solar cooking, solar thermal applications,  
solar geometry, tilted solar panels, energy storage  
systems, surplus product storage systems, cloud  
information, ???



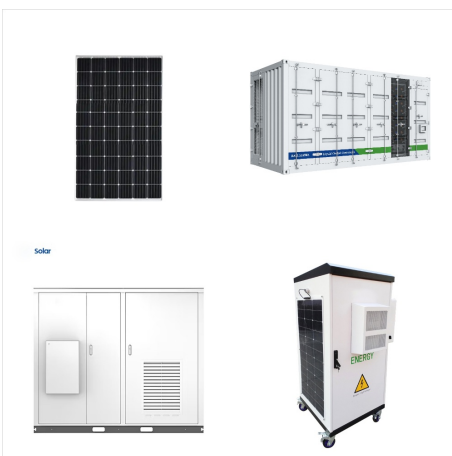
NASA Surface meteorology and Solar Energy\_  
RETScreen Data - Free download as PDF File  
(.pdf), Text File (.txt) or read online for free. This  
document summarizes climate data for a location  
with latitude 20.642 N and longitude -97.46 W,  
including average monthly temperatures, humidity,  
solar radiation, and degree days for heating and  
cooling.



The monthly average ratio of the solar energy reflected by the surface of the earth to monthly average solar energy incident on the surface of the earth for a given month, averaged for that month over the 24-year period (Jan 1984 - Dec 2007). (i.e. Fraction of insolation reflected by the surface of the earth.) Units dimensionless



On June 13, 2018 the NASA's Surface meteorology and Solar Energy (SSE) Data Archive web site was replaced with the new data web portal at <https://power.larc.nasa.gov> which contains improved solar and meteorology data and greatly enhanced capabilities to facilitate access to NASA's solar insolation and meteorological data parameters.



The NASA surface meteorology and solar energy (SSE) data set consists of resource parameters formulated for assessing and designing renewable energy systems. This new release updates estimates of resource parameters and includes meteorological parameters requested by the renewable energy industry. The data set is formulated from NASA satellite

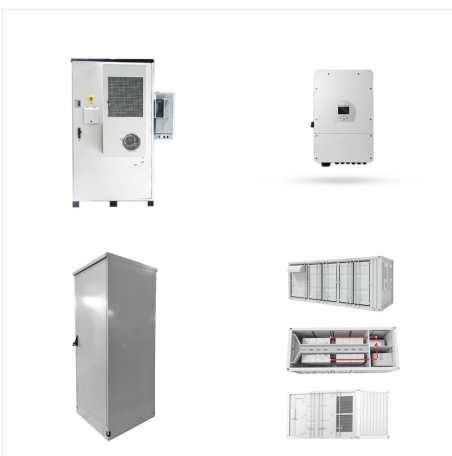




Surface meteorology and Solar Energy (SSE) dataset promotes commercial use of NASA global solar and meteorological data for photovoltaic and renewable energy system design needs. NASA, through its Science Mission Directorate, has long supported satellite systems and research providing data important to the study of climate and climate processes



This webinar will provide information about how NASA's Atmospheric Science Data Center, in partnership with the Surface meteorology and Solar Energy Project is addressing these growing user demands through geospatial technologies. A demonstration of the new responsively designed SSE web mapping application, ArcGIS Image Services and additional



Energy Fluxes Data Overview? Global SW Solar Insolation & LW Radiative Flux?. The surface shortwave (SW) radiation (or solar insolation) and the longwave (LW) radiation (or thermal radiation) available from the POWER data archives are based upon observational data from satellites. The basic observational data is the amount of radiative energy emerging from the ???

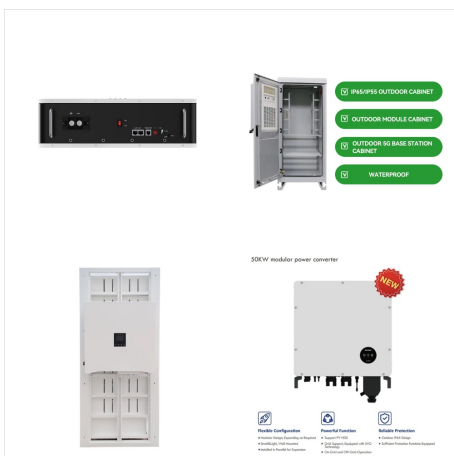
# NASA SURFACE METEOROLOGY AND SOLAR ENERGY



NASA's Surface Meteorology and Solar Energy (SSE) Project compiled these data--collected from July 1983 to June 1993--into a 10-year average for that period. Such images are particularly useful to engineers and entrepreneurs who develop new technologies for converting solar energy into electricity. To attain best results, most devices for



Zhang, Taiping, Paul W. Stackhouse, Jr., William Chandler, Stephen J. Cox, and David J. Westberg, 2014: Application of a global-to-beam irradiance model to the NASA GEWEX SRB dataset: An extension of the NASA Surface meteorology and Solar Energy datasets. Solar Energy, 110, 117-131. Zhang, Taiping, Paul W. Stackhouse, Jr., Shashi K. Gupta



Nasapower is an R package providing functionality to interface with the NASA POWER API for reproducible data retrieval using R and three functions, `get_power()`, `create_met()` and `create_icasa()` are provided. nasapower is an R (R Core Team, 2018) package providing functionality to interface with the NASA POWER API (Stackhouse et al., 2018) for ???