

Challenge

Fluctuations in a PV plant's output are inherent and caused by various reasons. Without a quick and adequate reaction, plant operators lose time and money. In addition, underperformance of PV plants may lead to penalties.

Solution

Calculate real-time performance using premium sensors to measure irradiance, module temperature, and other environmental parameters such as air temperature, wind speed and direction, and precipitation.

Benefits

Performance monitoring based on reliable weather information is key to understand plant behavior. It helps to identify the best spot for the panels, to troubleshoot output fluctuation, and, finally, to maximize profit.

Weather Station for Solar PV

For large PV installations, even small relative fluctuations in performance can make a huge difference to overall productivity. That's why meteorological monitoring is key to determine whether variations in output are due to the weather, or indicative of more serious hardware malfunction.

Meteorological monitoring is relevant in every stage of a PV plant's life cycle, for **site assessment** as well as during operation for **solar resource monitoring**.

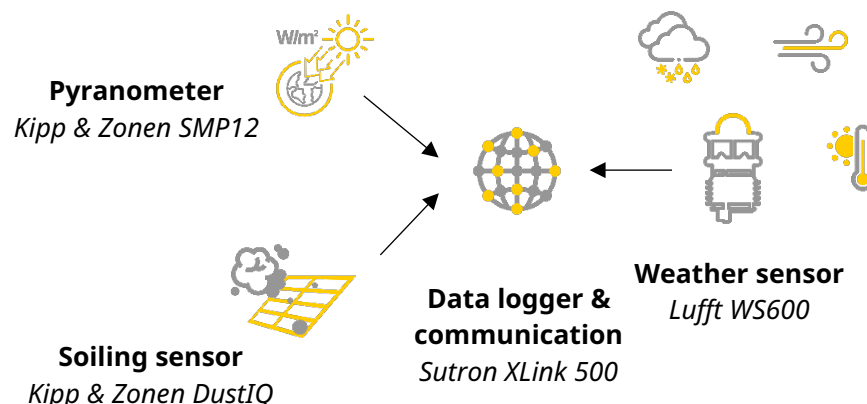
- Premium suite of instruments from leading brands *Kipp & Zonen* and *Lufft*
- Easy integration to SCADA thanks to synced portfolio and open protocols
- Optionally solar powered for autonomous operation during site assessment
- Fully compliant with IEC 61724-1:2021



Fully compliant with
IEC 61724

Weather Station on a solar energy plant in the U.S. with a pyranometer, albedometer, and a compact weather sensor.

Schematic Setup with product suggestions



Lufft **KIPP & ZONEN**
OTT HydroMet brands

Further information

[Blog Article: Building an Effective Weather Station for Solar PV](#)

Contact

[Questions? Ask them!](#)



Station Components



Pyranometer

The new [Kipp & Zonen SMP12](#) is our most innovative pyranometer so far. It is a fast response spectrally flat Class A pyranometer with integrated heating and ready for measuring GHI, PoA irradiance, and albedo.



All-in-one Weather Sensor

The [Lufft WS600](#) is a compact all-in-one weather station with measurement: of temperature; relative humidity; dew point; type, intensity and amount of precipitation; air pressure; and direction and speed of wind.



Soiling Monitoring System

The [Kipp & Zonen DustIQ](#) is an optical soiling sensor to monitor the loss of light transmission caused by dust on PV panels. It has no moving parts and it does not need sunlight to make its measurements.



Sun Tracker

The [Kipp & Zonen SOLYS2](#) is the most widely used sun tracker around the world in solar energy and meteorological applications. Trusted choice for new PV projects during the site assessment stage.



Data Logger

The [Sutron XLink](#) is a multi-sensor input logger with digital and analog, along with 4G LTE cellular data transmission. Easily connect all instruments to the XLink, that forwards the data to any SCADA system.



Power Source

During the site assessment stage, usually no power supply is available. Thanks to power-efficient instruments, the weather station can operate continuously on solar panels and a rechargeable battery.