

NIWE selects GEONICA SEMS Solution for Solar Radiation Resource Assessment Network in India (SRRA) (Phase-1, Phase-2 and MEDA)

GEONICA was selected by NIWE to supply, install, commission and maintain a network of 125 (phase-1, 2 and MEDA) SEMS-3000 stations for Solar Radiation Resource Assessment in India.

The network will be used by **NIWE National Institute of Wind Energy**, (formerly C-WET) an autonomous R&D institution under the India Ministry of New and Renewable Energy of India (MNRE).

The purpose of the network is to generate the “solar map” of India. Solar maps, showing real data of yearly solar radiation levels, are used for design of solar power plants. Detailed historical data series are made available by NIWE as a commercial service.

The network continuously monitors and stores nationwide solar radiation plus weather parameters and communicates the information to a Data Receiving Center (**GEO-DRC**) with redundancy located at C-WET Headquarters in Chennai. Each SEMS-3000 station is equipped with high accuracy meteorological sensors. More specifically, every station includes a **METEODATA Datalogger / Controller**, a **SUNTRACKER 3000** and several solar radiation sensors, such as a Pyrheliometer mounted on the solar tracker, and two Pyranometers (one shaded for the measurement of Diffuse Radiation). Data is transferred via GPRS cellular network to the Data Receiving Center for analysis and final recording. In Phase-2 there are also four “Advanced” Stations measuring Albedo Irradiance, Far Infrared Irradiance (Pyrgometer) and AOD. Real-time data is also available in Internet by means of **GEONICA WEBTRANS Ubiquitas** Internet Platform.



Key to the selection of **GEONICA** over competitors was a combination of the following factors:

- Instruments with excellent technical specifications. These include a **SUNTRACKER 3000** working at very low power with **METEODATA** integrated on-board datalogging / transmission capabilities and real time data quality assurance, and solar sensors with excellent temperature dependence and zero offset.
- Proven quality and performance of **SUNTRACKER** and **METEODATA** equipment, **GEONICA Suite** management software package and **WEBTRANS Ubiquitas** Internet Platform installed in two **GEO-DRC** Data Receiving Centers working in a redundant configuration for a reliable and high-availability system.
- A competitive price, and cost-effective solution.

Installation and commissioning of the Phase-2 and MEDA was carried out on Sep. 2013-Feb.2014. Phase-1 was completed on Nov. 2011. New stations haven installed in 2015 and 2016, up to 125 in total.

Each Station of Phase-1 & Phase-2 (red icons in the map) is measuring:

- Global Horizontal Irradiance (GHI)
- Direct Normal Irradiance (DNI)
- Diffuse Horizontal Irradiance (DHI)
- Wind Speed and Direction
- Ambient Temperature and Relative Humidity
- Atmospheric Pressure

Each “Advanced” Radiation Station (blue icons in the map) is measuring the above parameters and the followings ones:

- Albedo Irradiance (Albedometer)
- Far Infrared Radiation (Pyrgeometer)
- AOD (Sunphotometer)



SEMS-3000 Station with
SUNTRACKER-3000 and
METEODATA datalogger / controller



NIWE - Solar Radiation Resource Assessment Network consisting of 125 SEMS-3000 Stations supplied by GEONICA (Phase 1, 2 and MEDA)

