There is increasing use of grid connected solar power plants (300KW and above). These solar plants require an economical solution to monitor performance of the solar plant, data logging, net metering, telemetry system and reports.

Following information is required from the solar plant:

i) Local SCADA for the solar plant
ii) Remote monitoring of the solar plant operation to reduce cost
iii) Operating hours for the solar plant.
iv) Solar plant grid interface parameters and quality of power being injected in the grid.
v) Electrical energy generated by the solar plant inverters.
vi) Performance parameters for the solar plant.
vii) Net import/ export of energy to the grid.
viii) Weather monitoring and estimation of energy generation
ix) Data logging
x) String Level Monitoring

SOLAR PLANT MONITORING

In solar plants above 300KW, the automation becomes essential to ensure optimal performance of the solar plant and monitor the same to ensure high returns for the investor.

We offer complete solution for monitoring and control of the solar plant to meet the above stated objectives. Solar plant monitoring and control is done using Motorola RTU system, SATEC intelligent Multi-function meters and SCADA software. Refer to figure-1 on next page.

Motorola RTU System shall be installed at Solar Plant to monitor and collect required parameters and status information of Inverters and weather Station, IED’s, relays, MFM etc. All these parameters will be displayed via local SCADA HMI pages. All SCADA HMI pages are also available to remote clients via web log-in.

Function performed by Solar Plant Monitoring and Control System:

- Motorola RTU System will communicate with all protection and control relays used in the plant via IEC-61850 protocol.
- Communicate with all MFM and collect required parameters from the same.
- Monitor transformer parameters
- Monitor digital status via optically isolated digital inputs.
- Provide control commands via relays or digital outputs.
- Monitor time stamped (one msec. resolution) SOE
- Provide required time stamped parameters and SOE to local and remote SCADA
Function performed by Solar Plant Monitoring and Control System (cont.):

- Local SCADA system provides display of all parameters from the solar plant.
- Provide required reports and performance analysis.
- Provide reports and alarm event alerts via emails.
- Motorola RTU system shall also provide required telemetry System: Communicate with remote SLDC and provide required real time parameters to SLDC.
- Communicate with SLDC can be via any available means of communication - like GPRS, Leased lined, PLCC, V-SAT, and Radio etc..
- Redundant telemetry communication links and communication with multiple SCADA centers can be provided.

E xpertpower service can be subscribed for minimum twelve months. Subscription charges are based on number of solar plants and number of users.

**SATEC POWER QUALITY MONITOR: PM175**

As per CEA guidelines—quality of power being injected in the grid has to be monitored and compliance reports for the same has to be prepared. SATEC power quality monitor PM175 shall be used to monitor electrical parameters and quality of power being injected in the grid. PM175 is packed with the following features:

- 6 channel waveform recording
- Harmonics & inter-harmonics according to IEC 61000-4-7
- Directional power harmonics
- Flicker according to IEC 61000-4-15
- Power quality event/data logging with time stamps

For further details on the application, please contact us with your plant details.