

WebClient

fig 1

Date	AVF	Performance Ratio	POA Irradiance	Horizontal Irradiance	Ambient Temp	Backsheet Temp	Wind Speed
09/23/10 05:40	0.000	0.000	0.0	0.2	71.8	88.4	4.2
09/23/10 05:50	0.000	0.000	0.0	0.7	71.8	88.5	4.7
09/23/10 06:00	0.000	0.000	0.0	3.7	71.7	88.6	4.6
09/23/10 06:10	0.000	0.000	1.5	2.1	71.8	88.5	4.3
09/23/10 06:20	0.000	0.000	2.9	3.8	71.5	88.4	3.0
09/23/10 06:30	0.021	0.000	0.3	6.5	71.6	88.4	4.6
09/23/10 06:40	0.003	0.000	8.6	10.3	71.8	88.8	4.6
09/23/10 06:50	0.005	0.000	12.9	15.0	71.6	88.9	4.0
09/23/10 06:55	0.005	0.000	14.2	18.0	71.6	89.0	4.0
09/23/10 07:00	0.000	0.000	23.5	25.7	71.7	89.3	3.0
09/23/10 07:05	0.011	0.000	29.5	31.2	71.7	89.6	4.4
09/23/10 07:10	0.007	0.000	67.3	47.0	71.8	79.4	4.3
09/23/10 07:15	0.004	0.000	104.6	69.6	72.0	71.5	3.8
09/23/10 07:20	0.017	0.000	134.8	76.7	72.3	72.5	4.0
09/23/10 07:25	0.041	0.000	165.0	89.6	72.4	72.9	3.5
09/23/10 07:30	0.110	0.012	193.3	103.0	72.8	76.8	3.4
09/23/10 07:35	0.100	0.000	221.7	117.0	72.8	76.1	3.0
09/23/10 07:40	0.164	0.011	262.8	130.5	73.1	80.3	4.6
09/23/10 07:45	0.180	0.002	289.2	144.7	73.5	83.5	2.8
09/23/10 07:50	0.200	0.040	345.3	159.5	73.8	80.7	4.1
09/23/10 07:55	0.237	0.101	383.0	174.4	74.0	88.7	2.8
09/23/10 08:00	0.281	0.189	449.8	189.2	74.3	89.5	2.0
09/23/10 08:05	0.344	0.313	493.3	208.0	74.7	91.0	3.2
09/23/10 08:10	0.424	0.463	561.0	230.2	74.7	91.0	3.4

fig 2

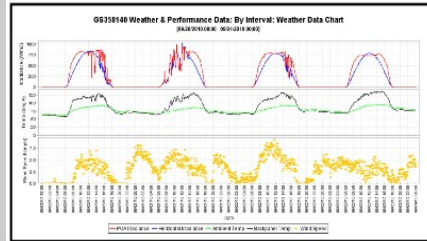
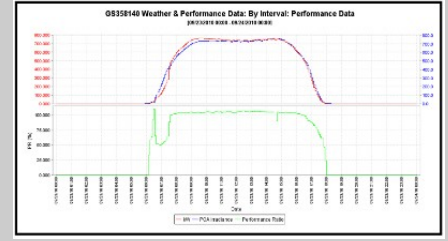


fig 3



For basic O&M monitoring requirements, the Trimark *WebClient* is a browser-based reporting tool where historical generation, weather and performance ratio data is available for on-demand querying and export to Microsoft Excel for offline analysis. (fig 1) The *WebClient* receives a data feed on a daily/hourly basis containing generation and weather data from the monitored facility and presents that data in a graphical format. (fig 2)

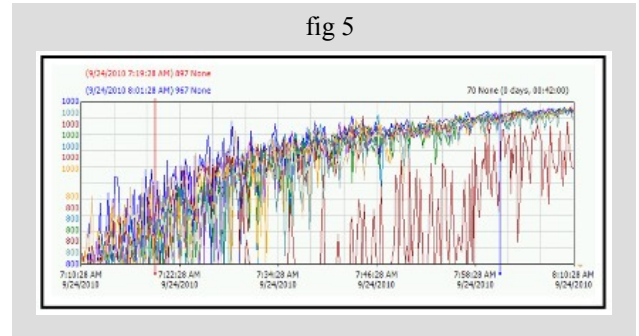
Using the site data, Trimark can perform a *Performance Ratio* calculation. (fig 3) We compare actual generation versus the expected generation, including temperature compensation and derate factors for inverter, transformer and wiring efficiency.

fig 4

AVE Mode Control

	Alert	Alert	Alert	Alert	Alert	Alert	Alert	Alert	Alert	
DC Input Voltage (V)	485.0	802.0	483.0	403.0	477.0	474.8	913.0	921.0	190.0	423.0
DC Input Current (A)	115.0	58.0	112.0	108.0	107.0	110.0	190.0	91.0	58.0	121.0
DC Input Power (kW)	97.8	48.0	82.6	42.4	91.0	96.3	64.0	83.1	48.1	90.8
DC Output Power (kW)	90.6	48.0	82.1	42.9	48.0	66.8	64.8	91.7	48.2	91.2
Line Power Factor	0.991	0.983	0.930	0.903	0.910	0.909	0.991	0.989	0.936	0.989

fig 5



Each night, the previous day's data is analyzed for the following conditions and alerts are flagged visually for the viewer: (fig 4 & fig 5)

- ◇ System Not Generating / Data Not Available
- ◇ Underperforming System (Based Upon Customer-Defined Low Performance Ratio Threshold)
- ◇ Overperforming System (May Be An Indicator of Other System Problems)



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