Energy Trust Shade Effect Evaluation Form

Job Name: _____________________________
Contractor: ____________________________
Date: _____________
Array Tilt: _______________ 
Array Orientation: _______________
Zip Code of Site: _____________

The sun path chart to the right is for a solar electric system located in Hood River, Oregon tilted 45 degrees with a 180 degree azimuthal orientation. The annual AC output for a system with these characteristics is about 1.17 kWh/Watt DC per year.

For comparison, annual production capacity per Watt of an optimally oriented system (34 degree tilt and 178 degree azimuth) is 1.19 kWh/Watt DC per year.

Local Production Capacity = 1.19 kWh/Watt DC per year.

At Hood River, a system oriented as in the sun path chart to the right will produce 98% of the annual electricity produced by an optimally oriented system.

Draw the horizon on the sun path chart and shade obstructed areas. To calculate the percent reduction due to shading, enter the percentage of system power output shown on the sun path chart for areas shaded by obstructions into the table on the right.

For example, assume the percentage of system power output from 7:00 to 8:00 between September 22 and October 21 is 0.4%, and 50% of that period is shaded. Enter 0.2% in the column under 7-8 and the row labeled Feb-Mar on one side and Sep-Oct on the other. Enter zero for each box where there is no shading. Note that hours are in solar time.

Sum the shading values in each column and enter the total in the bottom row. Sum the bottom row to determine the percent annual shading.

Percent Annual Shading: ________