Energy Trust Shade Effect Evaluation Form	70° ┌		T						12h	-						
Job Name:	-	(c) Univ. of (Sponsor: Ene	ergy Trus	st		11h	2.6	3		3.0	13h	į				l AC outpu per year
Contractor: Date:	60°	Lat: 44.12; Lo (Solar) time Tilt: 45; Aspe	zone: -8		72.5 71.5		2	2.6	3.	.3	Ź	3.5				
Array Tilt:	-	Eugene, OR		10h	X /\$		\setminus			_ /			$\lambda^{14\mathrm{h}}$			
Array Orientation: Zip Code of Site:	-			-	X	1.7	1			\rightarrow	3.8	$+ \times$	+			
Zip code of Site:	-			/1.0/		(\$\frac{1}{2}\)		2.1	2.7	, [NIGO O		3.7			
The sun path chart to the right is for a solar electric system located in Eugene, Oregon tilted 45 degrees	50° - - -		9	0h 0	.8	1.3		5.1	۵.۱		3.0		3.9	15h		
with a 270 degree azimuthal orientation. The annual AC output for a system with these	e t			\ ₂ /\\		\setminus	60			130	_ /		\	\3 A		
characteristics is about 0.9 kWh/Watt DC per year.	9 400		-+		0.6	1 20		1.6	2.1	1 %	3	3.0	+	1		
	Elevation on the contraction of		8h /	04		X	0.9			2.			1	3.7	$\lambda^{16\mathrm{h}}$	
For comparison, annual production capacity per Watt of an optimally oriented system (30 degree tilt and 190 degree azimuth) is 1.14 kWh/Watt DC per year.			Ø.6/	0.4		0.5	600	12	1.4	OCX 2			2.9	\bigvee	B.3	
	Solar 30°	71:	0.3			X	0.7			1.5			\	3.4	$4\sqrt{\sqrt{17}}$	7h
Local Production Capacity = 1.14 kWh/Watt DC per year.	-			0.3	0.3	0.4)0.5	0.8	0.9	1.1	1.3	1.	.8	22	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	¥
At Eugene, a system oriented as in the sun path chart to the right will produce 79% of the annual electricity produced by an optimally oriented system.	20° -	6h //					Vec.			\$\J	(0.7)			\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	2.4	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\
	10°			$\langle \rangle$								0.8	1.1			1.3
	-	5h	$X \mid /$			/						0.2				1.2\\19h
Draw the horizon on the sun path chart and shade obstructed areas. To calculate the percent reduction	-				//								0.2	0.2	V (Ø.2
due to shading, enter the percentage of system		60°	90°	12	:0°	150		180		21			40°	2	70°	300°
power output shown on the sun path chart for areas		East < Solar Azimuth> West														
shaded by obstructions into the table on the right.		Period/Hr	5-6	6-7 7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	Period/Hr
For example, assume the percentage of system		May-Jun														Jun-Jul
power output from 7:00 to 8:00 between September		Apr-May														Jul-Aug
22 and October 21 is 0.4%, and 50% of that period		Mar-Apr														Aug-Sep
is shaded. Enter 0.2% in the column under 7-8 and		Feb-Mar														Sep-Oct
the row labeled Feb-Mar on one side and Sep-Oct		Jan-Feb														Oct-Nov

Nov-Dec

Sum of Hourly

Shading

Dec-Jan

Sum of

Hourly

Shading

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.

on the other. Enter zero for each box where there is

no shading. Note that hours are in solar time.

Percent Annual Shading: