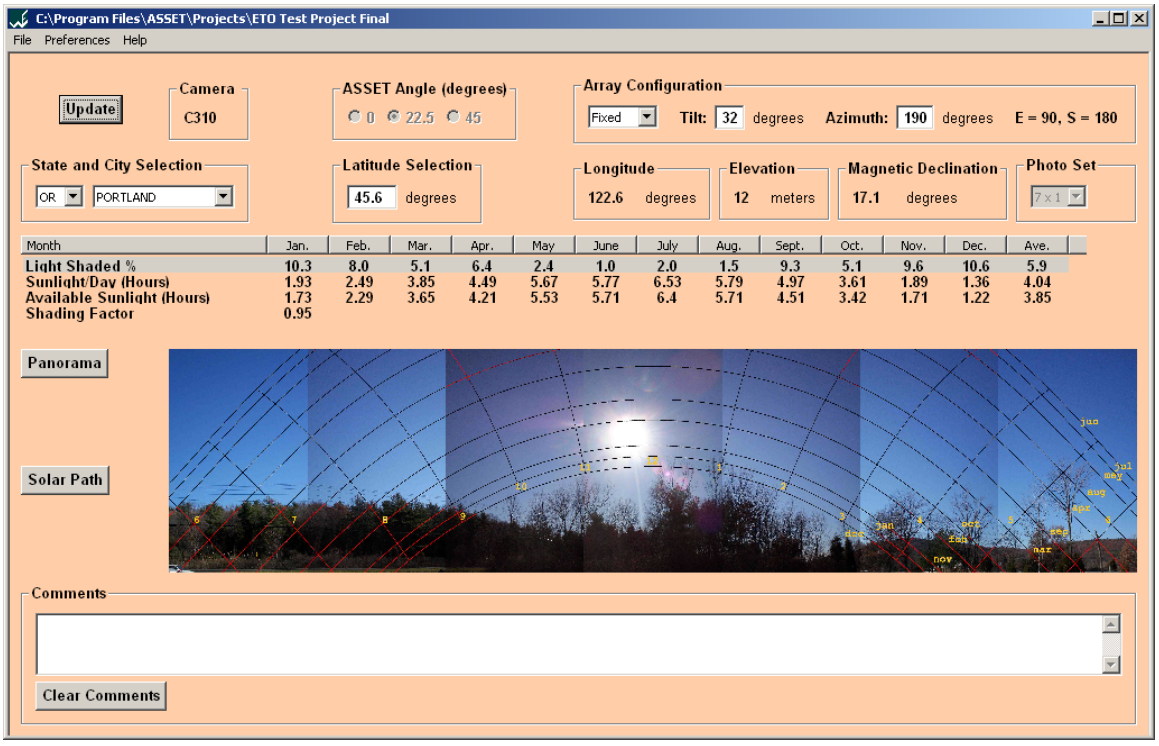
Description of the Wiley Asset Shading Analysis Tool

Relevant Data:

The Wiley Asset tool and accompanying software is approved for use in generating sun charts, and calculating Tilt and Orientation Factor (TOF), and Total Solar Resource Factor (TSRF) for Energy Trust of Oregon incentives. The Asset provides an Oregon-specific report in its latest spreadsheet template. Users can visit **http://www.we-llc.com/ASSET.html** and download and replace the "spreadsheet3.xls" file (usually found in the C:\Program Files\Asset\ directory) in order to obtain the template the Energy Trust of Oregon needs to process applications.

NOTE: To avoid file corruption, it is suggested that users first download "spreadsheet3.xls" to a separate location, and then copy the saved file over the existing file in the Asset directory.



Manual:

The manual is available for viewing as an HTML document on the company website **http://www.we-llc.com/ASSET.html**.

Notes:

Operation of the Asset presents little difficulty, but care must be taken to be sure the accompanying camera is at the correct angle and placement for image taking.

The Asset requires a stable physical platform, such as a tripod, to make sure that the device is level before taking the series of required photos. The Asset has a threaded mount for a camera tripod.

Follow the Asset manual's instructions for editing the panoramas or spreadsheets to simulate addition or removal of obstructions to create various 'what if' scenarios if needed.

Energy Trust of Oregon Requirements:

You do not need a manually-drawn sun chart if using the Asset. Instead, submit the following 3 documents to Energy Trust of Oregon as a part of your application.

1. A print-out of the 'calculations' worksheet from the spreadsheet.xls file.

spreadsheet

	A	B	C	D	E	F	G
1							
2	**system DC rating**	(W)	5280				
3	**DC to AC derate factor**		0.800	Note: Derating factor must be 0.8 for Oregon			
4	**system AC rating**	(W)	4224				
5	**NREL station**	PORTLAND	OR				
6	**latitude**	(degrees)	45.60				
7	**array type**	fixed array tilt (degrees)	32				
8	**azimuth**	(degrees)	190				
9							
10	**Correct for deciduous trees?**	FALSE					
11	**Month**	**light shaded (%)**	**sunlight/day (hours)**	**available sunlight (hours)**		**Estimated Local Production Estimate (kWh/Watt DC)**	
12	January	10.6	1.93	1.73		0.043	
13	February	7.9	2.49	2.29		0.050	
14	March	5.2	3.85	3.65		0.087	
15	April	6.4	4.49	4.20		0.098	
16	May	2.5	5.67	5.53		0.129	
17	June	1.0	5.77	5.71		0.126	
18	July	2.0	6.53	6.40		0.143	
19	August	1.5	5.79	5.71		0.128	
20	September	9.3	4.97	4.51		0.099	
21	October	5.2	3.61	3.42		0.080	
22	November	9.5	1.89	1.71		0.038	
23	December	10.5	1.36	1.22		0.028	
24	***average***	6.0	4.04	**3.85**	***total***	**1.050**	
25							
26							
27		SF	Shading Factor	**0.95**			
28		x TOF	Tilt and Orientation Factor	**1.00**			
29		= TSRF	Total Solar Resource Fraction	**0.96**			
30							
31	**system energy capture per year**	**(kWh)**	**5542**				
32							
33							
34							
35	copyright 2006-2008, Wiley Electronics LLC						
36							
37							

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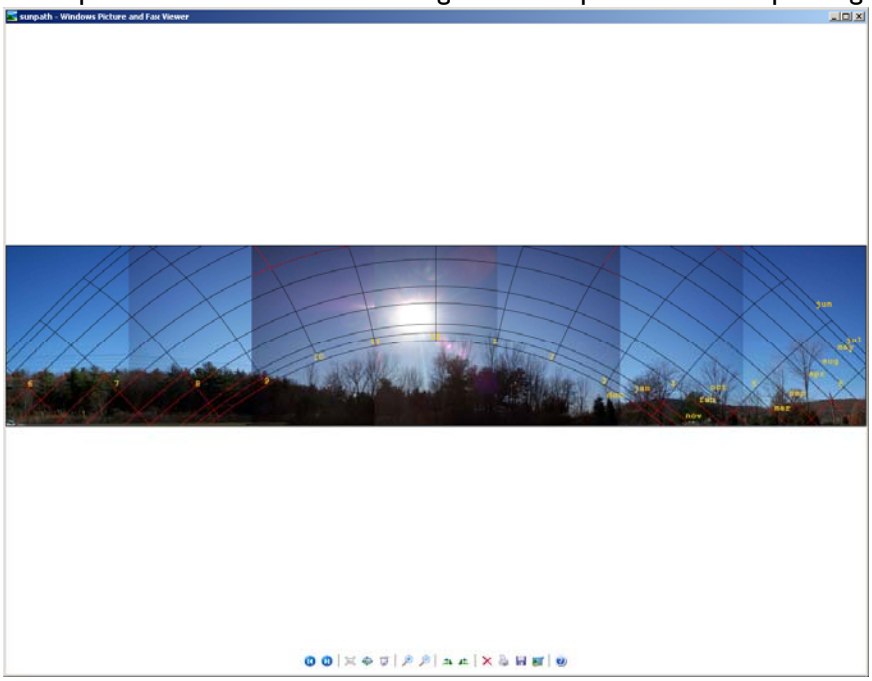
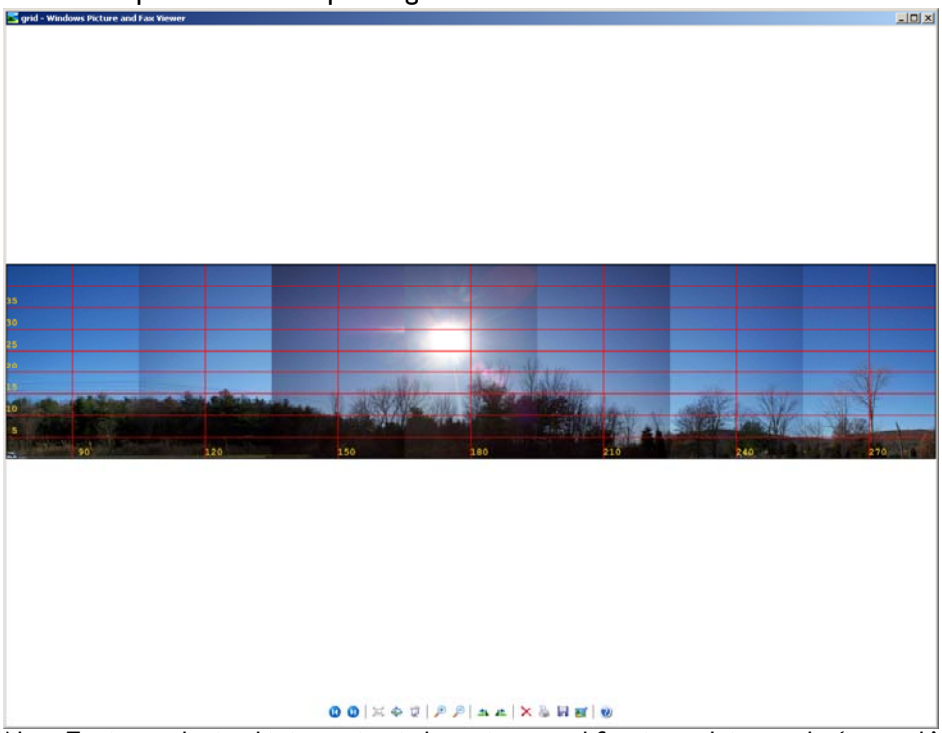
Ready

2. A print-out of the 'Sun Path' image – landscape-oriented for printing.



Note: from the ASSET application, press the 'Solar Path' button to view/print this image.

3. A print-out of the 'grid' image (which shows obstruction/shading elevations) – landscape-oriented for printing.



Note: To view and print this image in windows picture and fax viewer, bring up the 'sun path' image first, then press one time on the 'forward arrow' to view the next image in the directory. You can also find this image in the project directory under your ASSET installation folder, and print from there.