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## Energy Management Service

<b>Ver. 1</b>				<b>Tilted Array Worksheet</b>		<a href="#">See Instructions.</a>			
<b>Step 1: Enter home's annual kilowatt hour (kWh) usage:</b>				11,000		Utility Grid Offset (Default=50 %)			
<i>Annual Kilowatt Hours are calculated on your utility bill audit. Max = 15000.</i>						50			
<b>Step 2: Enter the other variables needed to determine array size.</b>						Click <b>Resources</b> tab below for help.			
Daily Peak Sun Hours		4.65		Derate Factor		0.77			
<i>May be a general value for the region or a measured one based on the array's azimuth/tilt angles and shading.</i>				<i>Derate percentage accounts for wire losses, soiling, etc. A default of 0.77 is provided.</i>		<b>4208</b>			
<b>Step 3: Determine how many modules should fit your array space(s) without shading between rows.</b>						<b>Use inches only.</b> For a landscape orientation, enter Module Length as Module Width, and vice versa. A default of 65" length and 40" width is provided.			
Module Length		65.0		Module Width				40.0	
<b>Dimensions (inches)</b>		<b>Array #1</b>		<b>Array #2 (optional)</b>				<b>Array #3 (optional)</b>	
Array Area Length		434.0							
Array Area Width		262.5							
Site's latitude (e.g. 38.5)		40.0		<b>Inches Needed Between Rows</b>				30°	
Array Tilt Angle (max.)		30.0						35°	
If racking extends beyond module length, add inches								40°	
				<b>97.50</b>				45°	
<b>Rows possible</b>		<b>2</b>						50°	
						<b>6 X Module Height</b>			
						<b>Module Base</b>			
						<b>56.3 inches</b>			
						<b>Total Modules</b>			
						<b>20</b>			
<i>Array #1 column, latitude &amp; tilt angle fields must be completed. The formulas in the yellow chart are used in the "Inches Needed Between Rows" calculation. For arrays with different azimuths, tilts, shading or module specs, use a separate worksheet for each. If you are mounting modules flush with your roof, use the normal <b>Array Sizing Worksheet</b> instead of this form.</i>									
<b>Step 4: Calculate how many modules you'll need to produce the total DC Watts of all arrays by entering an STC or nameplate size (in watts) available from module suppliers.</b>									
<b>Module Watt Size (e.g. 240)</b>		240		<b>Modules Needed</b>		<b>18</b>			
						<b>Is there enough space?</b>			
						<b>Yes</b>			
<i>If "Module Count" in Step 3 is not equal to or larger than "Modules Needed" in Step 4, try a different sized module or adding more array area. Also be sure to factor in any shading over your array that may decrease the "Daily Peak Sun Hours" value.</i>									