

Progress Report
 (week four)

This Monday, February 28th is the beginning of week four of my thirteen week timeline. According to that timeline (see attached page), I should be done with *“Brainstorming & initial calculations of available power. Estimates of system size & desired output.”* and beginning my weeks four to seven project of, *“Thorough research of design & materials constraints.”*

Based on this timeline, I am right on schedule. I visited the Barn last weekend and took all the measurements I needed. I also noted materials used to construct that Barn that I will have to deal with when mounting my system. A simple load list of desired loads is visible in Table 1. I have consulted with Doug Livingston several times. He is proving to be an excellent resource.

I also made a trip to the Real Goods Solar Living Institute in Hopland, CA where I purchased the 12th edition of the Solar Living Source Book and a book on solar electric houses. With the help of these texts, I have figured out the desired angle to mount the panels at.

I have not come up with an exact system size and this limits my ability to give an accurate budget. However, I can give a general idea: solar panels tend to run at around \$5.00 per Watt. I am unsure yet whether I will need 100W of solar panels or 200W and that is a \$500 difference. On top of that, a system on only one 100W panel does not need the same size inverter of that on with 200W. However, the price difference between lower and higher wattage inverters is not as significant as that of solar panels. At the end of weeks four to seven, I intend to have the system design complete and to begin simulating it in some computer electronic lab of some sort.

Load	watts	hrs/day	days/week	ave wh/d
5x20 w CFs	100	3	7	300
1x50w flood	50	3	7	150
power tools	1000	0.5	1	71
clock radio	5	24	7	120
Timer	3	24	7	72
Motion sensor	3	24	7	72
Inverter circuits	10	24	7	240
total wh/d consumed				1025
pv "wh/d"				1465
pv amp hr / day @12v				122
pv amps in winter sun				41
pv watts @17 v				692
number of 120w pv				6
				\$
cost used (250)				1,500.00
				\$
cost new (500)				3,000.00
peak watts (inverter rating)	1171			

Table 1: Load list analysis of desired loads.