SolarRay's "RENEGADE PLUS" System: Example Uses

Appliance	Qty.	Run Watts	Hours /Day	Days /Week	W-hours /Day	Percent of Total	NOTES
Fluorescent Lights	4	20	6	7	480.0	36.8%	
Blender	1	350	0.1	2	10.0	0.8%	
Microwave Oven	1	900	0.25	7	225.0	17.2%	
Toaster	1	600	0.08	7	48.0	3.7%	
Coffee Maker	1	800	0.1	7	80.0	6.1%	Carafe style, no hot plate
17" LCD Television	1	40	4	7	160.0	12.3%	turned off with powerstrip
VCR or DVD player	1	30	2	1	8.6	0.7%	when not in use
DC Radio	1	5	5	7	25.0	1.9%	
Laptop Computer	1	25	3	7	75.0	5.7%	
Small Power Tool	1	450	0.25	2	32.1	2.5%	JigSaw or Drill, etc.
Sewing Machine	1	80	0.25	1	2.9	0.2%	
Small Vacuum Cleaner	1	650	0.5	1	46.4	3.6%	
DC Pressure Pump	1	150	0.75	7	112.5	8.6%	150Gal/ day from cistern
	Total Daily Average Watt-hrs				1305.5		

The "Renegade Plus" System can run many normal household appliances, but only for short periods of time. The Coffee Maker, TV, Lights, and Computer are all specially chosen high efficiency models. They are unplugged or turned off with a powerstrip when not in use. Some appliances like the Radio are still 12 volt DC to allow the inverter to be in sleep mode most of the time.

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PV System Worksheet		Customer:	Renegade Plus Example			**Solar Ray**
© 1999 by Dankoff Solar Products		Date:	Oct. 31, 2005			**PO Box 2228**
See Instruction File		Prepared by:	Ray			**Taos, NM 87571**
Version 2.0 8/99 adapted by SolarRay						**(505) 737-9553**
	Yellow boxes are for your changes & input					
			TOTAL			
			LOAD =	**1305**	**Watt-Hours per Day**	
EFFICIENCY ESTIMATES		Battery Average Efficiency		**88%**	1484	
(See Instruction File)		Inverter Average Efficiency		**92%**	1613	
		Wiring & Distribution Efficiency		**98%**	1645	
				Energy to Be Generated	**1645**	**Watt-Hours/Day**
DC System Voltage	**12**		Season of max. energy use		**Winter**	
Avg. Peak Sun Hrs/Day	**6**		PV:Battery mismatch + loss factor		**91%**	
Solar Tracker Gain ?	**0**		**PV Array Required**		**301**	**Watts (peak rating)**
PV ARRAY - Select size & quantity of PV modules						
Full Array would be	**4**	**80**	**- Watt Modules =**		**320**	Watts
Proposed Array of	**4**	**Modules = total rated - - -**			**320**	Watts
Array voltage	**12**	Module voltage	**12**			
BATTERY BANK						
Days of Energy Storage	**5**		At Maximum Depth of Discharge		**100%**	
			Batt Capacity at Low-Temp		**90%**	of 77°F standard rating
			Requires Battery Bank of		**762**	**Amp-Hours**
Battery amp-hr rating	**250**	Required number of batteries =			**6.1**	
Battery nom. Voltage	**6**	Proposed number of batteries =			**8**	
		for a Battery Bank of			**1000**	**Amp-Hours**
		Proposed Days of Storage			**6.6**	