

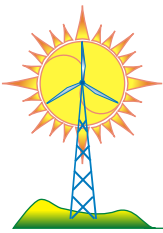
Solar Wind Works

Renewable Energy Power Systems

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PHOTOVOLTAIC SYSTEM SIZING WORKSHEET

Electric Load Estimation													
AC Load	Qty	x	Volts	x	Amps	=	Watts	x	Use (hrs/day)	x	Use (days/wk)	÷ 7 d =	Watt hours per Day
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
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		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
AC Total Connected Watts								AC Average Daily Load					
DC Load	Qty	x	Volts	x	Amps	=	Watts	x	Use (hrs/day)	x	Use (days/wk)	÷ 7 d =	Watt hours per Day
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
		x		x		=		x		x		÷ 7 =	
DC Total Connected Watts								DC Average Daily Load					



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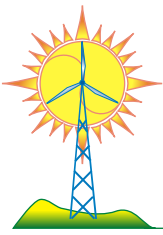
PHOTOVOLTAIC SYSTEM SIZING WORKSHEET — PAGE 2

Battery Sizing								
AC Average Daily Load	÷	Inverter Efficiency	+	DC Average Daily Load	÷	DC System Voltage	=	Average Amp-hours/Day
	÷		+		÷		=	
Average Amp-hours/Day	x	Days of Autonomy	÷	Discharge Limit	÷	Battery Amp-hour Capacity	=	Batteries in Parallel
	x		÷		÷		=	
DC System Voltage	÷	Battery Voltage	=	Batteries in Series	x	Batteries in Parallel	=	TOTAL Batteries
	÷		=		x		=	
Battery	Make			Model			Quantity	

Array Sizing								
Average Amp-hours/Day	÷	Battery Efficiency	÷	Peak Sun Hours/Day		=	Array Peak Amps	
	÷		÷			=		
Array Peak Amps	÷	Peak Amps/Module	=	Modules in Parallel			Module Short Circuit Current	
	÷		=					
DC System Voltage	÷	Nominal Module Voltage	=	Modules in Series	x	Modules in Parallel	=	TOTAL Modules
	÷		=		x		=	
Module	Make			Model			Quantity	

Controller Specification								
Module Short Circuit Current	x	Modules in Parallel	x	1.25	=	Array Short Circuit Amps	Controller Array Amps	Listed Desired Features
	x		x	1.25	=			
DC Total Connected Watts	÷	DC System Voltage	=	Maximum DC Load Amps		Controller Load Amps		
	÷		=					
Controller	Make			Model			Quantity	

Inverter Specification						
AC Total Connected Watts	÷	DC System Voltage	=	Maximum DC Amps Continuous	Estimated Surge Watts	Listed Desired Features
	÷		=			
Inverter	Make			Model		
					Quantity	



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PHOTOVOLTAIC SYSTEM SIZING WORKSHEET — PAGE 3

System Wire Sizing						
Wire Run	Volts	Amps	Wire Length (one way)	Volt Loss (%)	AWG #	Type
Array to Battery		Array Peak Amps x 1.562				
Battery to DC Load Center		Max DC Load Amps x 1.25				
DC Branch Circuits	A	Max DC Circuit Amps x 1.25				
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
Battery to Inverter						
Inverter to AC Load Center						
AC Branch Circuits	A					
	B					
	C					
	D					
	E					
	F					
	G					
	H					
	I					
	J					
	K					
Equipment Ground						
Electrical Ground						
Array Interconnect Cables	Quantity		AWG #		Type	
Battery Interconnect Cables	Quantity		AWG #		Type	