Solar Wind Works
Renewable Energy Power Systems
P.O. Box 2511 • Truckee, CA 96160 • 1-877-682-4503 • Fax: 530-582-4603

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	=	
		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	=	

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	=	

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 Volatge	÷	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 Volatge	÷	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**	

** Design based with permission on original by Mark McCray, Ph.D.*