

Solar Power System Design and Cost

Utility-Intertie

Utility-Intertie systems convert and deliver generated power directly to the utility-grid.

Complete the following "Utility-Intertie Solar System Questionnaire" and return it to us via mail, email or fax.

Upon receipt of the completed paperwork, Myers Energy Solutions will prepare a free system design & quote.

Myers Energy Solutions Email to: info@myersolar.com
PO Box 3163 Fax: 703-327-4474
Winchester, VA. 22604

First thing to know is that lowering consumption translates directly into lower system costs.

If your current electricity consumption is high, energy-efficiency is recommended.

After making your property energy-efficient, it becomes increasingly economical to invest in solar-generated electricity.

Below are some steps toward lowering your electrical consumption

☼ Use compact fluorescent lighting wherever possible. Dimmable bulbs are now available.

☼ Install dimmer switches wherever possible.

☼ Upgrade to top-of-the-line energy-efficient electric appliances or non-electric solutions to the traditional "heavy" energy users. Any appliance which uses electricity to generate heat (electric stove, electric hot water heating, space heating, or clothes dryer), or which has a sizable motor (refrigerator, etc.) should be replaced with a cost-effective alternative. This may involve the inclusion of oil, propane, or natural gas.

☼ Consider installing switched outlets or a switched power strip on anything which may be on for long periods of time. Leaving a DVD player, computer, power charger plugged in around the clock (even when not turned on) can draw enough power to add substantially to the installed cost of a Solar system.

Solar System Questionnaire: Utility Intertie

Name _____ Phone _____

Address _____ Email _____

_____ Preferred contact method _____

1. Provide 6 months of past utility bills or average KWH per month.

2. Property description

Age: new construction existing structure

Use pattern: year-round summer winter intermittent full-time

3. Site potential:

Elements: southern exposure windy location

Limitation: local climate/geographies which may limit available sun? (Valley location, Wooded area, etc.)

4. Heating system:

Methods: hot air hot water radiant floor wood other to be decided

Fuel: _____ BTU rating: _____ Blower / pump size: (H.P.,amps, and/or watts) _____

5. Appliances & major household loads

Stove: fuel _____ make/model _____

Refrigerator: size _____ (cu.ft.) KW/year _____ make/model _____

Water heater: fuel _____ Water pump: voltage _____ hp _____

6. Water supply

Existing: yes no Source(s): spring well other

Well data (available from well driller): depth _____ drawdown _____

static water level _____ recovery rate _____ flow rate _____

Existing pump? yes no

if yes > H.P. / volts AC or DC _____ type _____

7. Existing power

Sources: utility generator other: _____

If you own a generator, please describe: make _____ model _____

rated watts _____ fuel _____

8. Backup power

At any time (present or future), will you require backup power for critical loads?

yes no

9. Comments or questions:

Solar Power System Design and Cost Off-Grid

Off-grid systems are designed for those who are living or building beyond the power line.

Complete the following "Off-Grid Power System Questionnaire" appropriately and return it to us via mail or fax.

Upon receipt of the completed paperwork, Myers Energy Solutions will prepare a free system design & quote.

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In order to keep initial costs reasonable, we must design for a home which is highly efficient. Off-grid homes that utilize renewable power use only 10-15% of the power consumed by a typical utility-fed home.

Lowering consumption translates directly into lower system costs. Only after your property is very energy-efficient, is it economical to invest in off grid solar-generated electricity.

Below are simple steps toward lowering your electrical consumption

- ☼ Use compact fluorescent lighting wherever possible. Dimmable bulbs are now available.
- ☼ Install dimmer switches wherever possible.
- ☼ Upgrade to top-of-the-line energy-efficient electric appliances or non-electric solutions to the traditional "heavy" energy users. Any appliance which uses electricity to generate heat (electric stove, electric hot water heating, space heating, or clothes dryer), or which has a sizable motor (refrigerator, etc.) should be replaced with a cost-effective alternative. This may involve the inclusion of oil, propane, or natural gas.
- ☼ Consider installing switched outlets or a switched power strip on anything which may be on for long periods of time. Leaving a DVD player, computer, power charger plugged in around the clock (even when not turned on) can draw enough power to add substantially to the installed cost of a Solar system.
- ☼ Water pumping must be looked at closely (off-grid). Solar powered well pumps can be used with a water tank.

Well data (available from well driller): depth _____ drawdown _____

static water level _____ recovery rate _____ flow rate _____

Existing pump? yes no

if yes > H.P. / volts AC or DC _____ type _____

6. Existing power

Sources: utility generator other: _____

If you own a generator, please describe: make _____ model _____

rated watts _____ fuel _____

7. Is there a dry well ventilated area for the batteries?

8. Comments or questions:

Off-Grid Power Consumption Estimate

Complete the power consumption table below. Complete additional copies if more space is needed. Most appliances list a wattage or volts & amps on their nameplate. Enter this information in the table. Try to be realistic, and consider winter conditions in your load estimate. Remember to plan for use of efficient lighting & appliances and non-electric solutions to heavy loads. Myers Energy Solutions will be happy to help you in arriving at an accurate estimate.

Electrical Load	Volts x Amps = Watts	x	Quantity	=	Total Watts	x	Hours On/Day	x	Days On/Wk	+7 Days per wk.	x	1.1 (AC only)	=	Total Watt Hrs/Day
Example 1 <i>Kitchen Lights</i>	15	x	2	=	30	x	2	x	7	+7	x	1.1	=	66
Example 2 <i>Television</i>	70	x	1	=	70	x	1	x	5	+7	x	1.1	=	55
		x		=		x		x			x		=	
		x		=		x		x			x		=	
		x		=		x		x			x		=	
		x		=		x		x			x		=	
		x		=		x		x			x		=	
		x		=		x		x			x		=	
		x		=		x		x			x		=	
Totals:		x		=		x		x			x		=	