



SMARTRE™
Grid Interactive Solution

- **Easy to Install**
- **Grid-Interactive Battery Back-Up**
- **UPS Quality Battery Back-Up**
- **Up to 6.0 kW of Solar**
- **Indoor and Outdoor Rated**
- **Wall or Pad Mountable**

SmartRE is the revolutionary Smart Renewable Energy solution from OutBack Power, bringing you simplified grid-tie solar with back-up power for residential and small commercial applications. Designed with an emphasis on ease of installation, a SmartRE solution installs and operates similarly to basic grid-tie solar inverters but with the unique additional benefit of providing UPS quality battery back-up during utility outages. An integrated ultra-fast AC transfer switch guarantees that even sensitive back-up loads, like computers, never know when a utility outage occurs. Recommended AGM batteries are maintained and charged by an innovative OutBack multi-stage charging process. This valuable feature assists in providing reliable back-up power and a battery life up to 10 years.

The SmartRE is a versatile product and can be installed both indoor and outdoors. Available in power levels up to 6kW

SmartRE is capable of providing as much as 69 kWh of storage during outages, there is a SmartRE solution for your application. With matching type 3R raintight power and electronics enclosures constructed of aluminum a SmartRE solution can be either wall or pad mounted making this the most versatile grid-tie with battery backup solution on the market. This solution is designed and manufactured by OutBack Power to ensure that a SmartRE solution works reliably for years to come. A standard 5-year warranty provides peace of mind.

Ease of installation, UPS quality battery back-up, and solutions as large as 6 kW along with proven OutBack engineering makes the SmartRE system the Smart choice for a premium Grid-Interactive solar power system.

OutBack
POWER



There are two common types of Grid-Tie renewable energy systems: Basic Grid-Tie and Grid-Tie with Battery Back-up, also known as Grid-Interactive.

Basic Grid-Tie System

A basic Grid-Tie solar system generates electricity when the sun is shining. It supplies this power to your house and sends any excess back to the utility. It does this by inverting the DC power produced from the solar array into grid compatible AC

power which is then sent to your main electrical panel to be used by your household appliances while any excess power is sold back to the utility. In the event of a utility power outage, your basic Grid-Tie inverter is automatically turned off and no power is produced, even when the sun is shining!

	System Type	
	Basic Grid-Tie	Grid-Interactive
Sells Power Back to the Grid	✓	✓
Lowers Utility Bill	✓	✓
Works During a Utility Power Outage		✓
Provides UPS Quality Backup Power		✓
Wind Turbine and Micro-Hydro Compatible		✓
Works with Multiple DC Sources		✓

Grid-Interactive

Just like a basic Grid-Tie system, a Grid-Interactive solar system such as the SmartRE generates electricity when the sun is shining and supplies this power to your house while sending any excess power back to the utility. It does this by inverting the DC power produced from the solar array into usable AC Power which is then sent to your main electrical panel to be used by your household appliances while any excess power is sold back to the utility. Where a Grid-Interactive system differs from a Grid-Tie system, is in its ability to charge batteries which are used as a back-up source when the power goes out. In the event of a grid power outage uninterrupted power is supplied to important household loads such as refrigerators, lights, and computers while your solar array continues to produce power and charge your batteries.

How does a SmartRE Grid-Interactive System work?

A SmartRE Grid-Interactive system uses battery storage in order to provide back-up power during utility outages. Here is how a system works: (see Figure 1)

1. Power from your solar array is run to a Maximum Power Point Tracking (MPPT) charge controller.
2. Power runs from the charge controller to your battery bank which is made up of sealed maintenance free AGM or Gel cell batteries.
3. The circuits that need to be backed up must be moved from the main panel to the standby load panel. Power runs from the battery through the inverter in the SmartRE where the DC power is inverted to AC power. AC power goes to both the main panel, where excess power can be sold back to the utility, and to a standby load panel which is backed up during a utility outage.

How long does it take to install a Grid-Interactive System?

Installation of a SmartRE Grid-Interactive system typically takes 2-3 hours. The most difficult part of most installations is moving the circuits which are to be backed up from the main panel to the sub panel, which can cause installation times to be longer.

How much run time on batteries should I expect?

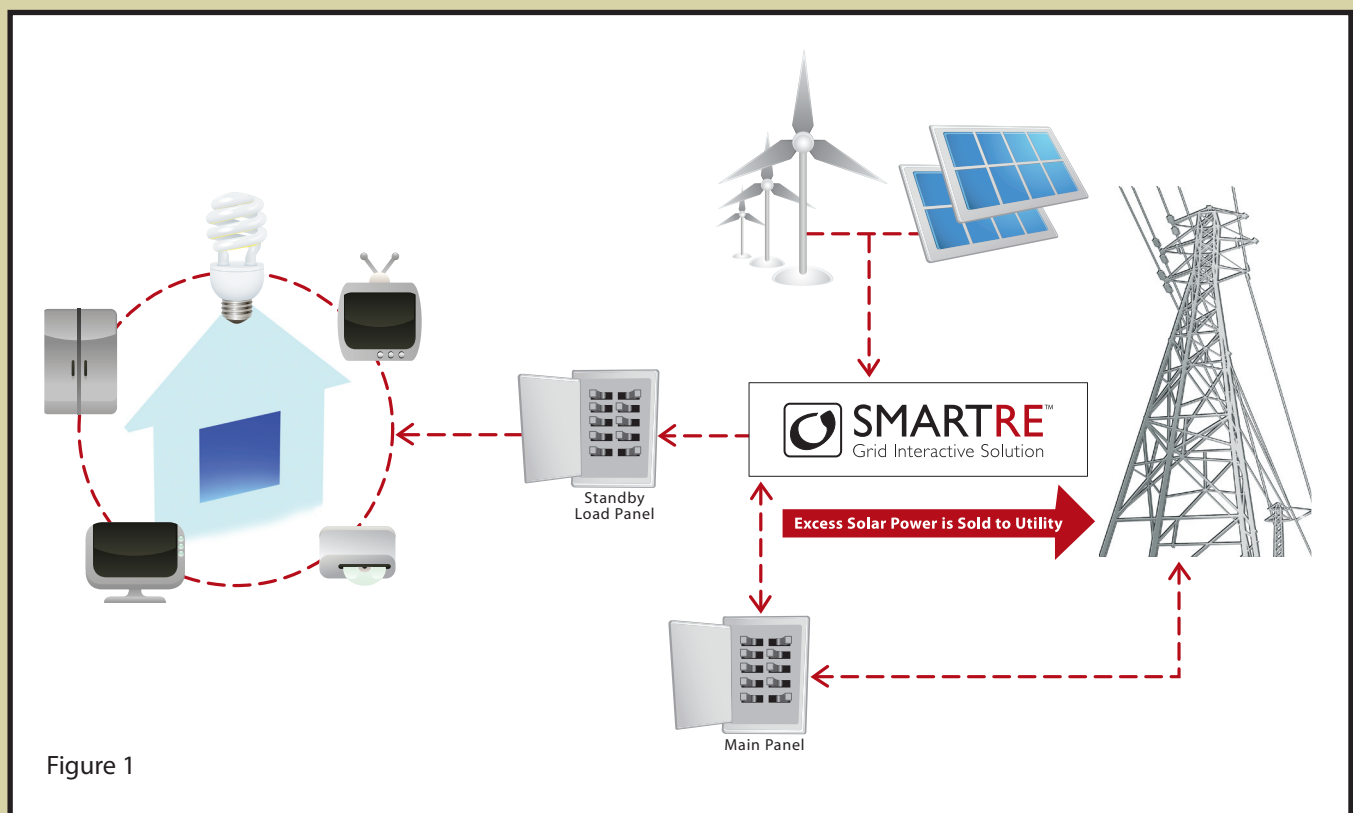
SmartRE battery enclosures are designed to support battery banks from 4kWh to 15kWh depending on the model and configuration of battery bank that you select.

How long will the batteries last and is there any maintenance required?

Sealed AGM and Gel batteries which are typically used in Grid-Interactive applications last from 5-10 years on average with no maintenance required. In applications that require more time to run without utility or solar power than your battery bank can supply. OutBack recommends using SmartRE products in conjunction with Honda EU generators.

Can I back up my whole house?

Unless you use very little power it typically does not make economic sense to provide back-up power for an entire home. Furthermore, there are specific loads such as heaters and large air conditioners which we do not recommend providing back up power for since they are often inefficient consumers of electricity. Spot coolers and some of the new energy efficient room air conditioners can be used. We recommend only backing up common loads such as lights, refrigerators/freezers, sump pumps and stereos or TVs to maximize runtime.



SMARTRE Specifications

Models		SMARTRE 2500		SMARTRE 3000		SMARTRE 5000	SMARTRE 6000
Continuous Power Rating		2500VA		3000VA		5000VA	6000VA
Part Numbers		SRE2500-120-NA	SRE2500-120/240-NA	SRE3000-120-NA	SRE3000-120/240-NA	SRE5000-120/240-NA	SRE6000-120/240-NA
AC SPECIFICATIONS							
Nominal Output Voltage	Sell Invert	120VAC 120VAC	120VAC 120VAC / 240VAC	120VAC 120VAC	120VAC 120VAC / 240VAC	120VAC / 240VAC 120VAC / 240VAC	120VAC / 240VAC 120VAC / 240VAC
Nominal Frequency Output		60hz					
Maximum AC Current	Peak (1 millisecond) RMS (100 millisecond)	70A at 120VAC 50A at 120VAC	70A at 120VAC/35A at 240VAC 50A at 120VAC/25A at 240VAC	70A at 120VAC 50A at 120VAC	70A at 120VAC/35A at 240VAC 50A at 120VAC/25A at 240VAC	70A at 120VAC/70A at 240VAC 50A at 120VAC/50A at 240VAC	70A at 120VAC/70A at 240VAC 50A at 120VAC/50A at 240VAC
AC Overload Capability	Surge	6000VA		6000VA		12000VA	12000VA
	5 Seconds	4800VA		4800VA		9600VA	9600VA
	30 Minutes	3000VA		3200VA		6000VA	6400VA
AC Output Current		20.8A at 120VAC	20.8A at 120 VAC / 10.4A at 240 VAC	25.0A at 120VAC	25.0 A at 120 VAC / 12.5 A at 240 VAC	20.8A at 120VAC/20.8A at 240VAC	25.0A at 120VAC/25.0A at 240VAC
Total Harmonic Distortion	Sell	<5%					
	Invert	2%					
AC Inputs		Two 60A 120VAC AC Inputs [Grid / Generator]				Two 60A 120/240VAC AC Inputs [Grid / Generator]	
AC Transfer Switch Speed		<16 milliseconds					
Anti-Islanding Protection		UL1741-2005 / IEEE1547 Compliant					
Output Waveform		True Sine Wave					
DC SPECIFICATIONS							
Maximum PV Array Wattage - STC/Nameplate		3125 W DC STC	3125 W DC STC	3750 W DC STC	3750 W DC STC	6250 W DC STC	7500 W DC STC
MPPT Input Voltage Range		50-150 VDC					
MPPT Operating Voltage Range		50-145 VDC					
Maximum Open Circuit Voltage		150VDC					
Maximum PV Short Circuit Current		64A				128A (Two at 64 A DC)	
Ground Fault Protection		80A DC Breaker (Detection >1A)				(2) 80A DC Breakers (Detection >1A)	
Electronic Overcurrent Protection		Yes					
Separate PV MPPT Inputs		1				2	
Maximum Battery Charger Output	AC Source (Grid or Gen.)	35A AC	35A AC	45A AC	45A AC	70A AC	90A AC
	DC Source (PV Array)	80A DC	80A DC	80A DC	80A DC	160A DC	160A DC
Battery Voltage	Nominal	48 VDC					
	Operating Range	40-60 VDC					
Recommended Minimum Battery Capacity		100 Amp hours at 48VDC / ~ 4kWH				200 Amp hours at 48VDC / ~ 8kWH	
Temperature Compensated Battery Charging		Yes					
SOLUTION SPECIFICATIONS							
Inverter Efficiency		Up to 93%					
Nighttime Consumption		0 W AC					
AC Input and Output Terminals		Accepts #2 to #14 AWG SET/Screw Type Compression Terminals					
Information Display		Battery State of Charge, PV Active, Inverter Output, Grid Active, Generator Active					
Integrated Communications		Included MATE 2 for Remote System Information					
Operating Temperature Range		-40° C to 60° C (power derated above 25° C)					
Batteries		Not Included					
Recommended Batteries		Group 27, Group 31 and Tall Group 31 AGM or Gel Cell Batteries (Please see documentation for list of compatible models)					
Enclosure Rating		Type 3R / Outdoor Raintight					
Enclosure Materials		Aluminum					
Electronics Enclosure Mounting Options		Wall Mount (Bracket Included), Ground Mount, Concrete Pad Mount					
Enclosure Dimensions (HxWxD)		42x19x19"(107x48x48 cms)			2 Enclosures 42x19x19"(107x48x48 cms)		
Weight		128 lbs. (58 kgs.)			2 Enclosures 167 lbs. (76 kgs.) / 60 lbs. (27 kgs.)		
Certifications		Pending listing to UL1741, UL1778					
Warranty		5 Year Limited Warranty Standard/Optional 10 Year Warranty					
Options		Matching Battery Enclosure, Battery Enclosure Paralleling Kit, Enclosure Concrete Pad Mounting Kit					

Preliminary Specifications. All specifications subject to change without notice.

For product and purchase inquiries contact:



www.ecodirect.com



www.outbackpower.com

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