AEE Solar

Pre-Configured Systems

Engineered Grid-Tie PV Systems

AEE Solar grid-tie PV power systems are designed for use on residential and small commercial buildings. They consist of high quality Evergreen or SolarWorld photovoltaic (PV) modules, a Fronius, SMA or Xantrex inverter, array wiring, DC and AC disconnects, Unirac mounting structures to secure modules on the roof, electrical drawings, data sheets, warranties and instructions.

Some Xantrex and SMA inverters have integrated DC disconnects. Systems that list "ST7000" as the inverter use the new SMA Sunny Tower 42 kW tower that consists of 6 SMA SB7000US inverters, pre-assembled on a stainless steel structure.

Wiring from the array to the DC disconnect, array ground wiring, and wiring from the AC disconnect to the main panel and all conduit must be supplied by professional installers (your specific installation or utility may require additional AC disconnects). Contact us to obtain these essential resources and expert advice on your system installation.

All components comply with the 2005 National Electrical Code (NEC-2005); IEEE Std 929-2000, Institute of Electrical and Electronics Engineers Recommended Practices for Utility Interface of Photovoltaic (PV) Systems; UL 1741-Underwriters Laboratories Standard for Safety; and the ICBO 2000 International Building Code. The arrays and inverters are matched for maximum efficiency.

These modular systems can be combined to form larger systems to meet your requirements. It is economical to put these systems together for use in 30 kilowatt or smaller systems. For larger systems, please ask us for a quote.

Select a pre-packaged system that meets your needs from the accompanying table. California Energy Commission bases rebates on the system CEC rating in column 4 of the table. CEC's calculation takes into account module output in normal operating conditions and inverter efficiency.

Solar module	Nameplate watts	Module qty	# of strings	CEC watts	Inverter model	Item code	Price
SolarWorld SW-175 mono (CEC=156.6W)	700	4	1	576	PVP1100EVR	**010-06246**	**$7,322**
	1050	6	1	879	IG2000	**010-06277**	**$9,451**
	1400	8	1	1171	IG2000	**010-06278**	**$11,710**
	2100	12	2	1757	IG2000	**010-06279**	**$16,175**
	3150	18	2	2692	SB3000US	**010-06255**	**$23,365**
	4200	24	3	3570	GT4.0	**010-06303**	**$30,311**
	5250	30	3	4487	GT5.0	**010-06307**	**$38,148**
	7000	40	4	5982	SB7000US	**010-06267**	**$50,256**
Evergreen ES-190 (CEC=168.8W)	1140	6	1	952	1501xi	**010-06204**	**$10,602**
	1520	8	1	1263	IG2000	**010-06206**	**$13,163**
	2280	12	1	1934	SB3000US	**010-06223**	**$18,240**
	3040	16	2	2539	IG3000	**010-06226**	**$21,630**
	3800	20	2	3190	GT3.3	**010-06238**	**$26,514**
	4560	24	2	3889	SB4000US	**010-06208**	**$32,167**
	5700	30	2	4836	GT5.0	**010-06244**	**$39,496**
	6840	36	3	5803	SB6000US	**010-06214**	**$47,829**
	7980	42	3	6806	SB7000US	**010-06217**	**$55,059**
Mitsubishi UD185MF5 (CEC=164.7W)	1110	6	1	929	1501xi	**010-07201**	**$9,990**
	1665	9	1	1386	IG2000	**010-07204**	**$13,927**
	2220	12	1	1887	SB3000US	**010-07207**	**$17,100**
	2960	16	2	2477	IG3000	**010-07210**	**$21,956**
	4070	22	2	3406	IG4000	**010-07213**	**$29,373**
	5180	28	2	4404	GT5.0	**010-07216**	**$37,640**
	5920	32	2	5033	SB6000US	**010-07219**	**$42,502**
	7770	42	3	6641	SB7000US	**010-07222**	**$55,167**
REC SCM-220 (CEC=194.0W)	1100	5	1	912	1501xi	**010-07241**	**$10,285**
	1760	8	1	1451	IG2000	**010-07244**	**$15,330**
	2200	10	1	1853	SB3000US	**010-07247**	**$17,710**
	3080	14	1	2607	SB4000US	**010-07250**	**$22,085**
	3960	18	2	3282	IG4000	**010-07253**	**$27,918**
	5280	24	2	4446	SB6000US	**010-07256**	**$37,540**
	6160	28	2	5188	SB6000US	**010-07259**	**$43,120**
	7260	33	3	6146	SB7000US	**010-07262**	**$50,820**

Suggested retail prices are subject to change; check with us for latest pricing.

Engineered Grid-Tie PV Systems with Battery Backup

These full-service renewable energy systems give you all the benefits of utility interconnection and net metering plus energy independence. With these grid-tie systems, backup AC power is made available in the event of a utility outage, providing reliable power and peace of mind. An average conversion efficiency of 89% to 91% using the California Energy Commission (CEC) test protocol provides greater savings and a shorter time period for system payback than previous designs.

Battery-backup grid-tie systems come with modules, array wiring, combiner boxes, roof mounting structures, inverters/control systems with all required over-current protection and disconnects. (Your specific installation or utility may require additional AC disconnects, which we can supply as needed). They require a 48-volt battery bank to operate. The size of the battery determines the amount of backup power available during power failure. Use the worksheet on the page 11 to determine battery bank size. Battery backup systems qualify for the California Energy Commission incentives and the federal tax credit.

Grid-Tie Systems with Battery Backup (see table at bottom for batteries)

PV watts	Module quantity	Module brand & watts	Inverter Model	Backup watts	Output VAC	Item code	Price
570	3	Evergreen 190	OutBack FLEXware system with one GVFX3648	3600	120	**010-06724**	**$9,791**
2850	15	Evergreen 190	OutBack FLEXware system with one GVFX3648	3600	120	**010-06728**	**$24,392**
5700	30	Evergreen 190	OutBack FLEXware system with two GVFX3648	7200	120/240	**010-06732**	**$46,749**
2850	15	Evergreen 190	Xantrex XW4548 with 1 XW-MPPT60 Charge Controller	4500	120/240	**010-07015**	**$24,650**
4560	24	Evergreen 190	Xantrex XW4548 with 2 XW-MPPT60 Charge Controllers	4500	120/240	**010-07022**	**$36,518**
5700	30	Evergreen 190	Xantrex XW6048 with 2 XW-MPPT60 Charge Controllers	6000	120/240	**010-07027**	**$44,724**
660	3	REC SCM 220	OutBack FLEXware system with one GVFX3648	3600	120	**010-07031**	**$10,487**
2640	12	REC SCM 220	OutBack FLEXware system with one GVFX3648	3600	120	**010-07038**	**$23,721**
5280	24	REC SCM 220	OutBack FLEXware system with two GVFX3648	7200	120/240	**010-07045**	**$45,344**
3960	18	REC SCM 220	Xantrex XW4548 with 2 XW-MPPT60 Charge Controllers	4500	120/240	**010-07051**	**$33,606**
5280	24	REC SCM 220	Xantrex XW6048 with 2 XW-MPPT60 Charge Controllers	6000	120/240	**010-07056**	**$43,319**

Battery Packs for Systems above

Watt-hours storage to 80% discharge	Battery quantity	System amp-hours	Battery model	Battery rack	Item code	Price
7500	4	196	MK S31-SLD-G	MidNite MNBE-B	**010-07085**	**$1,445**
15000	8	392	MK S31-SLD-G	MidNite MNBE-B	**010-07088**	**$2,746**
22500	12	588	MK S31-SLD-G	MidNite MNBE-C	**010-07092**	**$4,053**

AEE Solar RPPS

Remote Photovoltaic Power Supply

- Remote Security
- Communications
- Satellite Communications
- Wireless Data
- Cathodic Protection

AEE Solar Remote Photovoltaic Power Supply (RPPS) systems are standalone PV power systems designed to supply a wide variety of remote power requirements. All RPPS systems are complete packaged systems consisting of photovoltaic modules, mounting structures, batteries, battery enclosure, wiring and necessary charge regulation circuitry. RPPS systems can be pole or ground mounted.

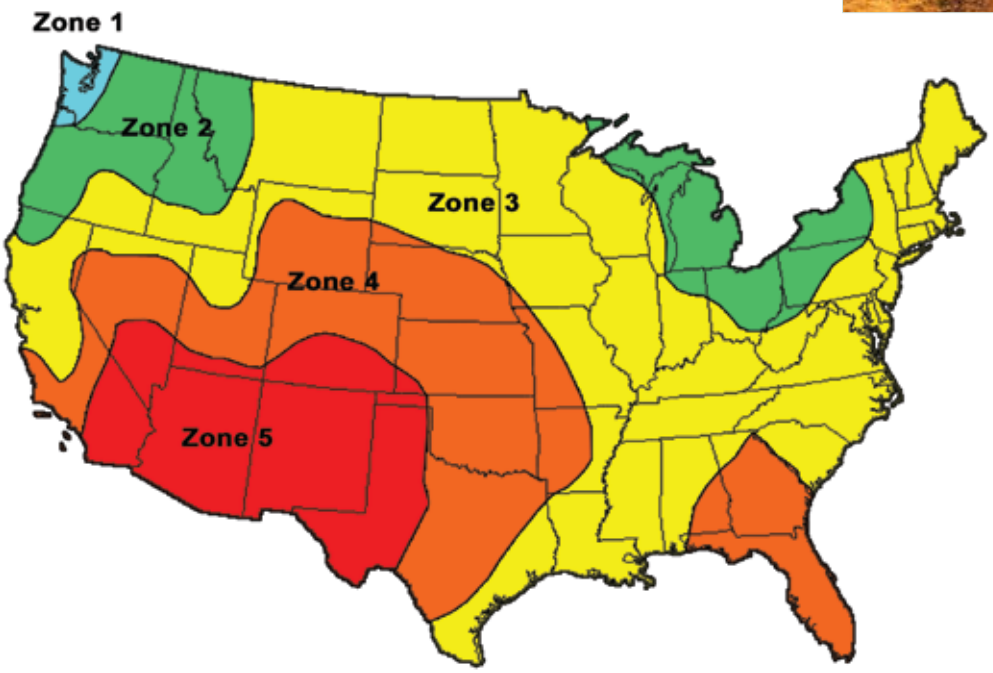
RPPS systems represent the highest standards of reliability. All components have passed rigorous testing and are suitable for use in the harshest of environments. All RPPS systems are individually tested at the AEE production facility, assuring years of trouble-free operation.

Suitable for powering lights, sensors, monitors, security cameras, illuminated signage, traffic signals, communications equipment and more, the DuraGEN solar engine is designed to perform in remote and industrial settings where durable construction and reliable operation are critical.

AEE Solar RPPS systems are built on years of experience designing reliable solar-powered equipment for telecommunications, signal, traffic, railroad and oil industry projects. They come pre-assembled, pre-wired, pre-tested and ready to install. All connections are clearly labeled and precise instructions are included to make installation quick and easy.

AEE Solar RPPS systems are designed to operate flawlessly in the most harsh environments. The lightweight powder-coated aluminum enclosure offers corrosion protection in most environments.

USA Solar Insolation Zones



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Designing Your RPPS System

Use the steps below to determine which system is best for your application.

1. Calculate your amp-hour per day (A-h/d) power requirements. This is the amp draw of the equipment to be powered, times the hours per day it will require power, times 1.2
2. Locate the zone in which your site is located on the map on the previous page.
3. The table below shows the amp-hours per day performance for each RPPS system in each of the solar insolation zones. Look at the insolation zone columns in the table below and find a value the meets or exceeds your design load requirements. That row represents the RPPS systems that will fully power your load requirements. The table shows systems to power 12-volt and 24-volt loads. Be sure to look in the appropriate voltage section for the load you are powering. Systems to power 36-volt and 48-volt DC and 120- or 230-volt AC are also available; please contact us for a quote.

RPPS model	System voltage	PV array power	PV array current	Battery capacity 100 hr rate	System performance (amp-hours per day)					Item code	RPPS system
					Zone 1	Zone 2	Zone 3	Zone 4	Zone 5		
	volts	watts	amps	amp-hrs	A-hr/d	A-hr/d	A-hr/d	A-hr/d	A-hr/d		List price
12-Volt Systems											
1A10-1J31/12V	12	10	0.65	38	0.59	1.2	1.8	2.3	2.9	**032-02011**	**$1,180.80**
1A20-1J31/12V	12	20	1.19	38	1.1	2.1	3.2	4.3	5.4	**032-02014**	**$1,364.40**
1A30-1J50/12V	12	30	1.78	56	1.6	3.2	4.8	6.4	8	**032-02017**	**$1,324.80**
1A50-1J92/12V	12	50	2.97	98	2.7	5.3	8	10.7	13.4	**032-02020**	**$1,872.00**
1A80-1J92/12V	12	80	4.55	98	4.1	8.2	12.3	16.3	N/A	**032-02023**	**$2,023.20**
1A80-2J92/12V	12	80	4.55	196	4.1	8.2	12.3	16.3	20.5	**032-02026**	**$2,343.60**
2A50-2J92/12V	12	100	5.94	196	5.3	10.7	16	21.4	26.7	**032-02029**	**$2,894.40**
2A80-2J92/12V	12	160	9.1	196	8.2	16.3	24.6	32.8	N/A	**032-02032**	**$3,147.60**
2A80-4J92/12V	12	160	9.1	396	8.2	16.3	24.6	32.8	41.0	**032-02035**	**$3,685.20**
4A50-4J92/12V	12	200	11.88	392	10.7	21.4	32.1	42.8	53.5	**032-02038**	**$4,482.00**
3A80-4J92/12V	12	240	13.65	392	12.3	24.6	36.8	49.1	61.4	**032-02041**	**$4,308.00**
4A80-4J92/12V	12	320	18.2	392	16.3	32.8	49.1	65.6	N/A	**032-02044**	**$5,181.60**
4A80-6J92/12V	12	320	18.2	588	16.3	32.8	49.1	65.6	81.9	**032-02047**	**$5,719.20**
5A80-4J180/12V*	12	400	22.75	840	20.5	41.0	61.4	81.9	102.4	**032-02050**	**$7,143.60**
6A80-4J225/12V*	12	480	27.3	1060	24.6	49.1	73.7	98.2	122.9	**032-02053**	**$8,299.20**
24-Volt Systems											
2A5-2J17/24V	24	10	0.3	20	0.27	0.54	0.81	1.1	1.4	**032-02110**	**$1,336.80**
2A10-2J31/24V	24	20	0.65	38	0.59	1.2	1.8	2.3	2.9	**032-02113**	**$1,711.20**
2A20-2J31/24V	24	40	1.19	38	1.1	2.1	3.2	4.3	5.4	**032-02116**	**$2,002.80**
2A30-2J50/24V	24	60	1.78	56	1.6	3.2	4.8	6.4	8	**032-02119**	**$2,422.80**
2A50-2J92/24V	24	100	2.97	98	2.7	5.3	8	10.7	13.4	**032-02122**	**$2,860.80**
2A80-2J92/24V	24	160	4.55	98	4.1	8.2	12.3	16.3	20.5	**032-02125**	**$3,126.00**
2A80-4J92/24V	24	160	4.55	196	4.1	8.2	12.3	16.3	N/A	**032-02128**	**$3,663.60**
4A50-4J92/24V	24	200	5.94	196	5.3	10.7	16	21.4	26.7	**032-02131**	**$4,468.80**
4A80-6J92/24V	24	320	9.1	294	8.2	16.3	24.6	32.8	41.0	**032-02134**	**$5,518.80**
6A80-6J92/24V	24	480	13.65	294	12.3	24.6	36.8	49.1	N/A	**032-02137**	**$6,706.80**
6A80-4J180/24V	24	480	13.65	420	12.3	24.6	36.8	49.1	61.4	**032-02140**	**$7,792.80**
8A80-4J225/24V	24	640	18.2	530	16.3	32.8	49.1	65.6	81.9	**032-02143**	**$9,512.40**
10A80-6J225/24V*	24	800	22.75	795	20.5	41.0	61.4	81.9	102.4	**032-02146**	**$12,313.20**
12A80-6J225/24V*	24	960	27.3	1060	24.6	49.1	73.7	98.2	122.9	**032-02149**	**$15,069.60**

Systems with * after part number have a 6 week lead time.

Solar module specifications subject to change.