

OASIS MONTANA INC., 436 Red Fox Lane, Stevensville, MT, USA, 59870 Main Web Page: www.oasismontana.com E-Mail: info@oasismontana.com 406-777-4321 or 4309, or fax 406-777-0830. Hours 8:30 to 4:00 MST, Mon.-Fri. Toll-free Order Lines 877-627-4768 or 877-627-4778 (877-OASISMT or 877-OASISPV) Fall Flier—2009



GREETINGS FROM OUR SOLAR POWERED OFFICE: What a summer it was! Too short, as always—but with some beneficial rains that helped with the forest fires. Then, we had unusually hot weather in September, and a nasty cold snap early in October. Still, the orchard and garden were very generous to us and our friends, with much cider, plums, potatoes, carrots and other produce to share.

For those of you who aren't "on line", or are beginning your project, we have an extremely **informative Product Catalog on disc for \$10** (\$18 out of country)—essential for your energy library! Products, system sizing, pricing, components, importance of energy efficient appliances, battery care, and wind turbines are just some of the topics covered. If you *are* on-line, you can see example systems (costs, components and power output) at www.oasismontana.com/systems.html

To assist your information input, we've tried to develop as much on-line information as we can. For solar water pumping, see www.PVsolarpumps.com; for utility-tied photovoltaic systems, visit www.grid-tie.com; for efficient AC appliances, DC 'fridges, coolers and freezers see www.eco-fridge.com; for natural and LP gas appliances, see www.LPappliances.com. Our main index page is www.oasismontana.com and we now offer composting toilets at www.eco-potty.com. Visit our web pages and stay a while!

30% FEDERAL TAX CREDIT —and reduced solar module pricing make this the ideal time to get your PV system up and running!

Solar modules have come down as much as 30% in the past year, so check our pricing page for what modules best suit your power project (or give us a call). Since the paperwork involving these incentives can be a little confusing, peruse these online sources for more information.

<http://www.dsireusa.org> for a state-by-state database of all incentives available to U.S. consumers.

http://www.energy.gov/media/HR_1424.pdf This link summarizes the energy tax incentives of the Emergency Economic Stabilization Act of 2008.

http://www.energystar.gov/index.cfm?c=tax_credits.tx_index This lists federal tax credits for energy efficiency.

http://www.awea.org/legislative/american_recovery_reinvestment_act.html This site summarizes grant programs and wind energy productions tax credits, as well as tax credits for advanced energy manufacturers.

And here's <http://www.irs.gov/pub/irs-pdf/f5695.pdf>, the form for the personal residential tax credit.



The Allure of Wind Power! Many people are enamored with the prospect of wind power generation—and unfortunately some make the investment before they have really ascertained that they have the resource for a wind system. Solar modules are so boring, they just sit there....but wind machines are a form of kinetic sculpture, and their spinning movement is quite entrancing! BUT, while folks are drawn to wind generation, photovoltaics are often a better approach (often because wind looks like it's doing something even when it isn't, while PV tends to be the opposite). And there are important issues with wind turbines; wind devices need proper siting to avoid turbulence, and most neighborhoods have tower restrictions. Wind generators should be mounted at least 30 ft. above anything else within 500 ft., and in an urban situation, usually your lot must be at least 1/2 half acre or larger in size. Permits, neighbors, variances....all are factors to be considered before spending money on a wind generator. The larger the blade span, the greater the swept wind area, so if you do have an excellent site for wind power, go big and high for the greatest power return.

If you have some idea of mounting a wind genny on your house....well, get over it. It's a *very* bad idea, and even smaller units have been known to vibrate a structure apart. Visit <http://www.wind-works.org/articles/RoofTopMounting.html> for an article about roof-mounted wind machines. And there's another site that works to dispel myths about urban wind generators at <http://www.urbanturbines.org> (there's some scary pictures here!). A pole stuck 10 ft. above your garage is not going to generate much; now I'm not saying you can't have a wind turbine in the city limits, but unless you have good clean wind, preferably mostly from one direction, with no obstacles to reduce the wind resource, it's not going to be a good investment.

Of late we have been receiving requests to become dealers for several types of Vertical Axis Wind Turbines (VAWTs). These devices sort of look like egg-beaters, mounted on a vertical central pole and spinning like a top. In spite of their claims, the basic design is not suitable, at present, for high power production. And while they do look cool, no matter how high wind speeds are, the blades being turned are offset by an equal amount of wind hitting the opposing blades—so never more than 50% of the winds can be utilized to create rotation, no matter how efficient the blade design. The three bladed horizontal axis models still make the most power for their design. And so, if you WERE seriously considering a residential, battery-based, grid-tied wind generation system....it just might entail these components:

Outback GTFX2524 inverter (2500W continuous rating, 24V inverter)	Temp Sensor
Outback Power MATE controller (system programmer & monitor)	Midnight E-Panel, two 60A DC breakers
Pair 10' 4/0 inverter to battery cables	8 - 6V Batteries (no cost included for these)
XL1 Wind Generator	80 ft. tilt-up tower kit

So I have a total of \$8100 before freight, batteries & interconnects, site work, installation, wire runs, ground rod, those sorts of things. We have had XL.1 turbines in the field since 2002 with few problems, and you can view the installation manual for this tough turbine at <http://www.bergey.com>. How much power this will make at your site depends on your average wind speeds, local turbulence, and elevation. You can view maps of wind resources at these sites: <http://www.windpowermaps.org>, http://www.nrel.gov/wind/resource_assessment.html and http://www.windpoweringamerica.gov/wind_maps.asp. You may also want to consult with your local weather resources and airports—always good places to check for average wind speeds.

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406-777-4321 or 4309; fax 406-777-0830 Toll-free order lines: 877-627-4768 or 4778 (877-OASISMT or 877-OASISPV)

To design a power system for you, we need your power requirements (electrical load information). See our web page for system sizing information and examples of power systems, which are based on the part of the country you're in and how much sunlight you receive. We have design information on our web site, so please feel free to utilize this. Or, we also offer a product and design information CD for just \$10.00 (\$18 international)—filled with information for your energy library! We also have a paper catalog, which costs \$15 for U.S. residents.

SOLAR MODULE PRICING—call for availability, freight costs, and quantities (# of modules) on pallets for the best deal. You can't get less than a pallet quantity to get the pallet 'deal'. For larger modules, pallet quantity generally runs between 20 and 30 modules.

	Single module	Per Pallet
SHARP ND-224UIF, 224W	\$936	\$836 ea.
Sharp NT-175UI, 175W	\$876	\$820
Sharp NE-170UI, 170W SALE!	\$549 while supplies last.	
Sharp ND-130UJF, 130W	\$742	\$697
Sharp NE-80EJEA, 80W	\$479	\$435
SANYO HIT195, 195W	\$1085	\$954
Sanyo HIT190, 190W	\$1042	\$939
Sanyo HIT Double 195W	\$1289	\$1198
Sanyo 215N, 215W	\$1195	\$1055
MITSUBISHI UE125MF5N, 125W	\$758	\$699
Mitsubishi UD-175MF5, 175W	\$835	\$775
SUNTECH STP-175/24, 175W	\$669	\$615
Suntech 70 STP12, 70W	\$353	\$329
CANADIAN SOLAR 230W	\$799	\$749
Canadian Solar 200W	\$699	\$655
EVERGREEN 200W	\$709	\$648
Evergreen 195W	\$689	\$635
SOLARWORLD 230W	\$855	\$822
KYOCERA KD210GX, 210W	\$715	\$686
Kyocera KD205GX, 205W	\$665	\$642
Kyocera KD185GX, 185W	\$622	\$605
Kyocera KD180GX, 180W	\$604	\$588
Kyocera KD135GX, 135W	\$442	\$424
(Some Kyocera modules may have a ~3 month lead time)		
Kyocera KC130TM, 130W	\$515	\$494
Kyocera KC85T, 85W	\$460	\$414
Kyocera KC65T, 65W	\$365	\$339
Kyocera KC40T, 40W	\$245	\$225
Kyocera KS20, 20W	\$198	\$174
Kyocera KS10, 10W	\$119	\$105
Kyocera KS5, 5W	\$77	\$64
SOLTECH SOL-1012, 10W	\$109	--
GE-PVp 200M, 200W	\$675	\$653
SCHOTT 220W	\$809	\$775
YINGLI YL85, 85W	\$510	\$465

We offer a variety of mounts to suit your project, including A-frame roof or ground mounts, top and side of pole mounts, flush mounts, tilt mounts, RV racks, as well as Zomeworks or Wattsun Trackers. Call for your cost, availability and freight. At this writing, some racks may have a 6 week lead time.

NOTE: the small print — prices subject to change without notice (sometimes for the better!)

CHARGE CONTROLLERS—call for information! We offer most models, including those made by Morningstar, Blue Sky Energy, Apollo Solar, Xantrex, Outback Power, SCI and Stacca.

GAS APPLIANCES: Propane refrigerators, freezers, ranges, cooktops - www.LPappliances.com for information.

Servel propane refrigerator, 8 cu.ft. capacity	\$1275
Crystal Cold 12 cu.ft. capacity propane 'fridge	\$1749
Crystal Cold 15 cu.ft. capacity	\$1999
Crystal Cold 18 cu.ft. capacity	\$2199
Stainless 18 cu.ft. capacity (w/ black textured sides)	\$2349
NEW 21 cu.ft. capacity White Crystal Cold 'Fridge	\$2399

(it's *the* biggest propane refrigerator manufactured! Also available as a special order is a 19 cu.ft. black model for \$2299)

Blizzard 10 cu.ft. capacity LP chest freezer	\$2150
Blizzard 15 cu.ft. capacity upright freezer SPECIAL!	\$1999
Blizzard 18 cu.ft. capacity upright freezer	\$2599
Blizzard 22 cu.ft. capacity upright freezer	\$2849

The Servel propane refrigerator can be converted to use natural gas for \$200 (includes re-crating). The Crystal Cold refrigerators and Blizzard 10 - 15 cu.ft. freezers can be converted to natural gas for \$50; the Blizzard 18 and 22 cu.ft. freezers can be converted to natural gas for \$100 (more costly as these have *two* gas absorption units on them).

Peerless Premier gas ranges are available in 20", 24", 30" and 36" widths, with model colors ranging from white, bisque, black and stainless. Even the electronic ignition models will work without power (you can light the burners and oven with a match) -- there's no glow bar in the ovens on these mechanically simple, American-made stoves. All ranges are set up for natural gas but LP conversion kits are included for every model at no extra cost (and you don't have to be Mr. Wizard to figure it out). **No power is no problem** with these gas 'fridges, freezers and stoves!

We also offer propane & natural gas **cooktops**, Italian-made by *Verona*; these professional cooking appliances are available in a wide variety of finishes (stainless, black, bisque and white or black glass), with two, four and five burner models. www.LPappliances.com for pictures and specifications.

Outback Power Components Pricing

Sealed inverters: FX2012T, 2524T, 3048T \$2099

Vented inverters: VFX2812, 3524, 3648 \$2279

Grid-tie, mobile, marine and export versions available on most of these sine wave inverters.

MATE system display & controller \$270

PSX240 Transformer \$498

Communications Manager HUB-4, \$185; HUB-10 \$350

FLEXmax60 MPPT 60A Charge Controller \$658

FLEXmax80 MPPT 80A Controller \$699

There are *way* more Outback Power products than we have room to list....call or e-mail for more information. info@oasismontana.com

or visit their web page at www.outbackpower.com They've

got a nice product catalog there you can download too, at

<http://www.outbackpower.com/catalog.htm>.

Winter is an etching, spring a watercolor, summer an oil painting and autumn a mosaic of them all. —Stanley Horowitz

From time to time we at Oasis Montana hear of these supposed marvelous 'energy saving devices' which will magically reduce the amount of power we are using...and purchasing. Well, here's an article written by the Association of Energy Engineers which addresses the sales pitches for these so-called energy devices:

http://www.plantservices.com/wp_downloads/pdf/0903_Power_Quality.pdf. As quoted: "The problem is that some of these solution providers have significantly overstated the savings and the customers are deceived. They often provide very little, if any, energy savings."

WHO WE ARE and ORDERING INFORMATION: Chris Daum, owner and manager of Oasis Montana, has been in the renewable energy field for 20 years, and Mark Dickson, our technical sales fellow, has been in the field of hydrology and RE systems for 8 years. Our new sales tech, Brad Stevens, lives off-grid in his self-built straw bale home. And our new enthusiastic administrative helper is Kathy Luedtke. Our staff offers experience, personalized service, quality components and good pricing. We are happy to work with your installer, electrician, or contractor, and locally we can install your power system. We provide detailed wiring diagrams with the systems we sell. **TO PLACE AN ORDER:** E-mail or call us for your freight; if you have any questions about your system or product, please contact us. E-mail is easiest and fastest (but we know that you aren't all on line). We accept **Visa/Mastercard** (personal and business checks are fine). For our international customers, we accept bank transfers—e-mail or call us for our banking information. Our hours are 8:30 am to 4:00 pm Mountain Daylight Savings Time, Mon. - Fri. If we're on another line when you call, please leave us a message, and we'll get back to you as soon as we can, but you may have to leave a message if we're with a customer or on one of the other lines. 406-777-4321 or 4309 or e-mail us at info@oasismontana.com — for tech support on renewable energy systems, e-mail mark@oasismontana.com or brad@oasismontana.com. We'd be very happy to help you with your power project — send an e-mail or give us a call!

GREAT GIFT IDEA!

Still \$29 each
or two for \$56



Buy 2 and get one for
a friend or student!

Kill A Watt Meter:

The Electricity Detector and Monitor can educate you about your monthly electric bill and help you save a lot of money. You can now be a 'detective' and ascertain what appliances are actually worth keeping plugged in. Simply plug in the Kill A Watt meter, connect your appliances to it and Kill a Watt will assess how efficient it really is, showing you the instantaneous power used, and also cumulative energy or kilowatt-hours used.

Kill a Watt, with large LCD display, will count consumption by the kilowatt-hour, same as your local utility. With the help of Kill a Watt you can figure out your electrical expenses by the day, week, month or year on a given device. Kill a Watt can check the quality of your power by monitoring Voltage, Line Frequency, and Power Factor. **Still just \$29.**

Now you'll know if it is time to install a power strip on your entertainment center instead of feeding those ghosts loads while you are sleeping or away from home. Or, is that laptop *really* cheaper to power than a desktop PC?

Operating Voltage: 115VAC Max Voltage: 125VAC
Max Current: 15A Max Power: 1875W
Dimensions: 5 1/8" x 1 5/8" x 2 3/8"

The CHINOOK 200 Wind Turbine is here! If you have modest power requirements, good average wind speeds and are looking for a small wind generator to help keep your batteries full (especially in the cold, dark days of winter), consider the Chinook turbine. Its maximum output is 250W and it's rated at 200W, at either 12V or 24V output. It is made and tested in one of Montana's windiest location (near Great Falls). At an average wind speed of 12 mph you will get about 40 kilowatt-hours per month (depending on your elevation and constancy of wind).

Technical specifications: rotor diameter is one meter (39"); rated wind velocity is 28 mph; cut-in rpm 350. At 14 lbs. it is easy to mount on any 1.5" (48.4mm) schedule 40 steel pipe (commonly available in most hardware or plumbing stores) and it carries a three year limited manufacturer's warranty. Other features:

- > Only two moving parts and sealed for life bearings
- > Proprietary 3-phase axial PMA utilizing neodymium iron boron technology
- > Suitable for domestic or marine applications
- > Quiet operation with low TSR motor
- > Excellent performance at low wind speeds
- > Injection molded blades
- > Lightweight but heavy duty
- > Microcontroller based control system
- > 'Plug & Play' charge controller with built-in dump load
- > Ideal for supplementing solar electric power systems!

The DL300 Series controller is designed to prevent your batteries from overcharging; it's compact and easy to install, and incorporates a 300W resistor/heater and controller in a stout 18 gauge powder-coated steel enclosure.

If you have been considering the addition of wind to your PV system—or you are planning to add a wind generator to your sail-boat or catamaran, now is the time to try a Chinook! The turbine and controller is \$675 plus freight. The next batch in production should be ready to ship just before Thanksgiving. We have specs and a copy of the manual we can e-mail, if you want more information!



WATCH OUT FOR ENERGY SCAMMERS..... While it is wonderful that our federal government has finally stepped up to the plate with its renewable tax incentives, there are always unscrupulous persons waiting to take advantage of people's interest in these kinds of power systems. There was an article in AARP's last newsletter about the dangers of scammers, and how you can avoid them at http://bulletin.aarp.org/yourmoney/scamalert/articles/scam_alert_watch_out_for_energy_saving_schemes.html. There are other scammers out there too; of late there've been many e-mails about 'making your own solar modules' with claims of 'powering your home for a \$200 investment'. While there *are* kits to build your own modules, they are better suited for the student or hobby endeavor. We are getting calls from folks wanting to sell power back to their utility with their home-made solar modules or wind generators. Unfortunately most people are clueless as to the input requirement for these grid-tie inverters, and it's a rude awakening when they are told that only UL approved components are legal and National Electric Code safe for grid-tie systems. And if you think that \$200 of home-made PV panels will power the average home, there's a bridge somewhere that's for sale cheap too....



SOLAR HEATED STOCK WATERERS! Our customers in northern climates have sought ways to keep their animals watered in below freezing conditions—and we finally have something for you. The SUNTANK (25 gallon model pictured at right) will keep your water freeze-free to wind chill of 20 degrees below zero, and the 42 gallon unit will work to -50 degrees F. These can be filled from the top with a hose or you can have a direct line attached with auto-fill and shut-off float to keep full. The Sun-

tank 25 is \$449, and the Suntank 42 is \$619, plus truck freight costs. Other features include:

- > Durable! Units used and tested for 18 years are still going strong.
- > No freeze-ups, never rusts.
- > No fuel or electricity needed, so it can be placed anywhere in unobscured sunlight.
- > No risk of electrical shock to livestock, with a shatter-proof passive solar collector.
- > No costly fuel or electricity; uses energy from the sun, still absorbs UV on cloudy days.
- > SAVES time and money, so it pays for itself faster.
- > Will NOT freeze even when livestock don't drink. Easy accessible water for livestock, even in ice and snow conditions.

There's no minimum number of livestock needed, and this also keeps water cool and algae-free in summer. Closed system helps stop West Nile Virus and other diseases. You may have to fence out the collector side to avoid shading from stock. The 42 gallon unit is guaranteed to -50F degrees below zero, and the 25 gallon unit guaranteed to -20 degrees below zero -- during winter conditions with wind chill factor included. **MADE IN THE U.S.A.**



Renewable Energy and Alternative News Bites: Kudos to U.S. Senator Sherrod Brown for introducing the "Investments for Manufacturing Progress and Clean Technology (IMPACT) Act of 2009." The **IMPACT Act** would provide resources for small- and medium-sized manufacturers through a 2-year, \$30 billion manufacturing revolving loan fund, which will provide much needed liquidity for domestic manufacturers to improve processes, to retool and expand production of clean energy products. The Apollo Alliance estimates that, once enacted, the bill will create 680,000 direct manufacturing jobs and 2 million indirect jobs over 5 years. <http://www.renewableenergyworld.com/rea/news/article/2009/06/us-senator-introduces-bill-to-help-manufacturers-retool-for-clean-energy-economy>

Nuclear Power Too Cheap To Meter? ...not really! There's little hype or spin in this article by energy policy analyst Matthew Johnson from Texas at <http://www.mysanantonio.com/opinion/commentary/50063697.html>; and you can find more information about the very high costs of nuclear-generated electricity at <http://www.ipnews.net/news.asp?idnews=47906>

Pee fuel...it could make beer drinking even more important! http://www.msnbc.msn.com/id/31805166/ns/technology_and_science-innovation/

Visit <http://www.grist.org/article/2009-09-22-fossil-fuel-subsidies-dwarf-clean-energy-subsidies-obama-wants/> for an article on fossil fuel subsidies far outweighing funds for renewable technologies—and how that will change in the near future.

Decisions, decisions... should you subsidize your utility company's photovoltaic project, or is it more cost-effective to renovate your own home with PV? <http://www.emagazine.com/view/?4802>, and scroll down for some perspectives and answers.

We all know what BP stands for... Back to Petroleum: http://news.bbc.co.uk/1/hi/in_depth/sci_tech/green_room/8040468.stm for a sad article about BP turning from green, back to its polluted oily future.....

Intermittency Not a Problem for Wind Power, Say European Studies: http://www.edie.net/news/news_story.asp?src=nl&id=16703; reports published in the past month by the National Grid, and other energy consultancies, all come to the same conclusion - that large scale deployment of wind energy does away with the problems of variable wind. The NGO report, "Managing Variability," published by WWF, RSPB, Greenpeace and Friends of the Earth, also claims that breakdowns in coal and gas plants generally pose more of a threat to the stability of utility networks than the relatively benign variations in the output of wind plant.

Vegi-car? <http://www.gizmag.com/formula-3-racing-car-powered-by-chocolate-and-steered-by-carrots-seriously/11625/> for an article on a Formula 3 racing car powered by carrots and...chocolate? Seriously! At \$227K it's a little pricey, but check out the video footage (and it's not made by GM!).

New Economic Data Released on Clean Energy Legislation: <http://www.nrdc.org/media/2009/090917.asp> Under the American Clean Energy and Security Act, there will be more jobs, less global warming pollution and greater security, all for less than the cost of a postage stamp a day (per American household), according to "A Clean Energy Bargain" analysis. The report found that ACES will drive investments in clean energy and energy efficiency of more than \$300 billion by 2030.

Imagine if our asphalt surfaces could make solar power: <http://www.solarroadways.com/Introduction.htm> ...

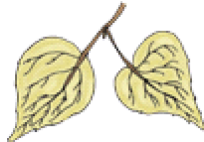


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Main Web Page: www.oasismontana.com
Utility Tie Systems: www.grid-tie.com
Efficient Appliances: www.eco-fridge.com
Gas Appliances: www.LPappliances.com
Solar Modules: www.PVsolarmodules.com
Water Pumping: www.PVsolarpumps.com
Toll Free: 877-627-4768 or 877-627-4778
Fax: 406-777-0830



**Renewable
Energy
Newsletter!**
Fall 2009



QUOTABLE QUOTES:

"Everybody needs beauty as well as bread, places to play in and pray in, where nature may heal and give strength to body and soul." —John Muir

"If you look at the science about what is happening on earth and aren't pessimistic, you don't understand data. But if you meet the people who are working to restore this earth and the lives of the poor, and you aren't optimistic, you haven't got a pulse." —Paul Hawken

"You can always tell a real friend: when you've made a fool of yourself, he doesn't feel you've done a permanent job." —Laurence J. Peter

"Every business is built on friendship." —J.C. Penny

"I am a firm believer in the people. If given the truth they can be depended upon to meet any national crisis. The great point is to bring them the real facts...and beer." —Abraham Lincoln

"Come my friends, tis not too late to seek a newer world." —A.L. Tennyson

"Believe in yourself, your neighbors, your work, your ultimate attainment of more complete happiness. It is only the farmer who faithfully plants seeds in the Spring, who reaps a harvest in Autumn." — B. C. Forbes

"I prefer winter and fall, when you feel the bone structure of the landscape -- the loneliness of it -- the dead feeling of winter. Something waits beneath it -- the whole story doesn't show." — Andrew Wyeth

"October. This is one of the peculiarly dangerous months to speculate in stocks in. The others are July, January, September, April, November, May, March, June, December, August, and February." — Mark Twain

"Autumn is a second spring where every leaf is a flower." — Albert Camus

"The foliage has been losing its freshness through the month of August, and here and there a yellow leaf shows itself like the first gray hair amidst the locks of a beauty who has seen one season too many." — Oliver Wendell Holmes

"Youth is like spring, an over praised season more remarkable for biting winds than genial breezes. Autumn is the mellower season, and what we lose in flowers we more than gain in fruits." —Samuel Butler

WE'RE STILL REDUCING OUR MAILING LIST—

with rising printing & mailing costs, we will be removing some old addresses from our mailing list. But, if you get e-mail, **subscribe to our EMAIL LIST.** It saves paper, labor and postage, and only disturbs a few electrons. Sometimes we have a great deal to offer, or just some good RE news to pass on. We do not sell or share our (small, hand-maintained) list with anyone. Contact us at info@oasismontana.com. This newsletter is available as an online version — just the same except the links work! If we have a sale or new product, e-mail *may* be your only notification. And we *promise* we won't bother you more than a couple of times a year.