Photo shows a solar water pump from Robin Solar Systems.

Where To Buy Solar-Powered Pumps

The sun can move water for livestock, home or irrigation if you pick your system right. Kerry Kalarney, **Sundance Solar Design**, first got into the solar pump business when he needed to pump water at a remote location and found out how much it would cost to do it the traditional way. Today Kalarney uses solar energy for all water handling chores on his ranch.

"Whether from a spring or well, the choice of pump and solar panels to run them is a matter of matching the system to the desired volume per day and the friction loss that needs to be overcome," says Kalarney. "There are pumps and panels that can be used at almost any site to provide long and reliable service without fuel and maintenance costs of gas or diesel pumps."

Kalarney says a small solar system pumping 300 to 500 gal./day costs in the $2,500 range. Larger systems pumping 10,000 gal./day or more range from $15,000 on up.

He recommends checking first with state and federal agencies for tax credits, grants and low interest loans available for alternative energy projects. The USDA and NRCS are only two of the agencies that have programs that help finance solar pumping systems.

Contact: FARM SHOW Followup, Kerry Kalarney, Sundance Solar Designs, P.O. Box 750, Olathe, Colo. 81425 (ph toll free 888 786-3374; solar4u@starband.net; www.sundancesolardesigns.com).

Following are several other companies offering solar solutions to water pumping needs:

Robison Solar Systems range from 85 to 1,200 watts of power. They are capable of pumping a couple of gpm from 600-ft. wells or producing flows up to 80 gpm from shallow wells.

Systems start at $1,650 (pump, panel, bracket and 100 ft. of wire included) and range to $12,000 or more. Kits are sized to the specific job required.

Contact: FARM SHOW Followup, Mark Fuqua, Robison Solar Systems, P.O. Box 548, Canton, Okla. 73724 (ph toll free 866 519-7892; cell 580 623-3324; www.solarpumps.com).

Solar Stream offers solar water pumps that need only 12 to 24 watts of photovoltaic modules to operate, are low in cost, and highly reliable.

Units range from pumping a 30-ft. head and delivering up to 30 gal./hr. to pumping a 50-ft. head and delivering up to 40 gal./hr.

Contact: FARM SHOW Followup, Solar Stream, P.O. Box 48, Temple, N.H. 03458 (ph 603 878-0066; info@solar-stream.com; www.solarstream.com).

Solar Power & Pump offers 12, 24 and 48-V systems at prices from $2,200 to $10,000. Dennis Austin, Solar Power & Pump, says solar especially makes sense if the water source is 1/3 of a mile or more from power. "While initial costs compare to windmills, lifetime costs will be lower," he says.

Contact: FARM SHOW Followup, Solar Power & Pump Company, 301 W. 12th St., Elk City, Okla. 73644 (ph 580 225-1704; toll free 866 246-7652; info@togosolar.com; www.togosolar.com).

Sundog Solar specializes in mobile watering systems for rotational grazing. The All Season Portable Water System can be moved from grazing paddock to grazing paddock in a few minutes with only an ATV or towed down the road with a tractor or truck. The company also offers an array of solar, wind, water pumping and RV and cabin systems as well as grid-tie developments.

Contact: FARM SHOW Followup, Sundog Solar & Agriculture Supplies, P.O. Box 1945, Sundre, Alta., Canada T0M 1X0 (ph 403 638-9711; Sundog@davincibb.net; www.sundogsolarwind.com).

For do-it-yourself information on solar energy-powered water pumping - and other uses for solar power - visit the **Build It Solar** website (www.builditsolar.com).

Portable solar watering systems like this one have been been catching on fast, says Sundog Solar in Sundre, Alberta.

Mini Bucket Makes Concrete Mixing Easy

Filling a 30-shovel cement mixer by hand was getting old, says John Kennedy, so he came up with a narrow mini-bucket that mounts on a skid steer loader. However, sometimes only a small mixer makes sense. His narrow, mini-bucket combines the ease of skid steer handling with pinpoint pouring of just the right amount of aggregate.

"I can put my 30-shovel mixer in a back yard for a small job and bring in the sand and gravel with my Bobcat. Makes the job easier and keeps the mess to a minimum," he says.

Kennedy made his 14-in. wide, 24-in. tall and 38-in. deep bucket out of scrap 1/2-in. steel he had on hand. However, he's confident 1/4-in. steel would be adequate. The bucket was sized to match the fill of his 30-shovel mixer.

"We made it extra deep so the front end of the bucket could easily be seen from the skid steer seat," explains Kennedy. "We didn't want to accidentally pick up dirt when sliding it into the sand and gravel."

Kennedy could have welded the bucket directly to the quick attach faceplate he fabricated for his skid steer. Instead he put a lip on the back of the bucket to slip over the top of the faceplate.

The base of the bucket is tipped away from the faceplate by two adjustable 5/8-in. bolts. Kennedy used the bolts so he could get the correct spacing to compensate for the less than 90-degree angle inherent in Bobcat arms. He notes that some skid steer buckets tip way back on the ground, but Bobcat buckets don't.

Narrow mini-bucket mounts on a skid steer loader, making it easy to fill a small cement mixer with just the right amount of aggregate.

"When we built it, we weren't sure how far it needed to tip away from the faceplate," explains Kennedy. "We didn't want to lose sand and gravel as we went into the pile. Eventually I will replace the bolts with a permanent spacer and weld it in place."

A heavy-duty chain link welded to the top of the bucket initially made it easy to position the bucket on the welding table. Kennedy says it has proven useful for lifting the bucket on and off trucks and trailers.

Contact: FARM SHOW Followup, John Kennedy, P.O. Box 416, Seligman, Arizona 86337 (ph 928 713-9596; kennedy@tabletoptelephone.com).

"Floppy" Swivel Tongue Made Rigid

Hooking up a tractor to an implement equipped with a "floppy" swivel tongue can be a dangerous job. Someone has to hold the tongue in a horizontal position while trusting the tractor driver to back up and stop at just the right moment. This new "rigid replacement tongue" solves the problem.

The 2-in. thick tongue comes with an elongated 2 1/4-in. long hole and an extra bolt that keeps the unit in a rigid horizontal position.

"The large pin hole allows you to hook up to the big drawbar pins found on big modern tractors," says inventor Roger Kuntz. "The pin hole on the hitch of older implements is often too small for such tractors. The only alternative is to cut a larger hole. Replacement floppy tongue hitches often aren't available because so many machinery companies have gone out of business.

"Another problem with floppy swivel tongues is that they allow the implement to rock back and forth, which leads to wavering and weaving down the road. The drawbar gets uneven wear from the angled pulling of the floppy swivel tongue. By using two bolts we can keep the floppy tongue rigid, which solves the wear problem."

"Rigid replacement tongue" comes with an elongated 2 1/4-in. long hole and an extra bolt that keeps the unit in a rigid horizontal position. Photo at right shows original floppy tongue hitch design.

Sells for $189 including S&H.

Contact: FARM SHOW Followup, K-Tech, 5251 Co. Rd. X, Grainfield, Kan. 67737 (ph 785 673-5560).

"Free" Diesel Fuel

Used transmission oil from diesel pickups and tractors can be filtered, blended with diesel fuel, and burned as fuel in diesel tractors or other diesel engines, says Rich Clouser, who works as a mechanic at a GM dealership in St. Louis, Mo.

"One of the mechanics at our dealership is an old farm boy. He takes home 5 gal. of used transmission oil every day, which he uses in his Deere diesel tractors," says Clouser. He runs the oil through a transmission filter and into a 5-gal. can. The filter removes any metal particles. He uses the oil straight during warm weather, but in cold weather the oil gets thicker so he mixes it with diesel fuel.

"I've been using the same idea on my diesel pickup for more than a year, and several other mechanics here do, too. Most of them have more than 100,000 miles on their pickups. Also, I know the mechanics at a local Ford dealership use transmission oil in their Ford Powerstroke diesel pickups, too."

Contact: FARM SHOW Followup, Rich Clouser, 3514 Glen Bay Drive, St. Louis, Mo. 63125 (ph 314 487-6577).