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Rig Talk

Sunmotor Solar Shack 120

A LOOK AT NEW DRILLING TECHNOLOGIES

Who is Sunmotor International Ltd.?

Sunmotor is a startup company in central Alberta. Its mission is to develop and commercialize new solar products. We started with a line of DC [direct current] solar pumps developed to water livestock in remote pastures. This has grown into a nice market. Then we discovered that the same pumps can handle contaminated liquids, so they also fit well in environmental cleanup projects, for example the many brine-spill remediation projects underway in the oilpatch. These direct-powered systems are very simple: the solar panels automatically run the pump whenever there is enough sunlight and there's liquid in the sump.

What is the Sunmotor Solar Shack 120?

This was developed for a remediation project east of Ponoka. Devon Canada wanted a system that continues to pump during cloudy weather. That way, effluent doesn't accumulate in the sump when there isn't enough sunlight to power the pump. Stantec Associates, Devon's consultant, commissioned me to design a system that would supply power on demand. The first unit, which we've just finished, will be installed this spring.

What are the advantages of this model?

The Sunmotor Solar Shack 120 delivers 120 volts of alternating current [vac] power, enough to run a higher capacity pump if desired. The solar panels charge a bank of batteries. These large, sealed batteries supply DC power to an inverter, which converts it into AC. We added a thermostat control to shut off the pump when the temperature drops below freezing. If the pump continues to operate when the discharge line is frozen, the batteries could be discharged unnecessarily.

The Solar Shack concept can be customized to meet each client's power requirements, whether for 12 vac, 120 vac, or 240 vac.

As a custom designer, how does Sunmotor handle manufacturing?

It's been a challenge. I used to subcontract out each component to separate suppliers—quite inefficient, but I had no other option. When I found Strad Structures in Stettler, Alta., I was like a kid in a candy store because it provides a one-location solution for structural, mechanical, and electrical services. Plus their manager, Don Petersen, responds with enthusiasm to whatever wild scheme I dream up, often pointing out how he could build it more efficiently with some minor changes.

Where do you see this technology heading in future?

Our products are well-suited for thousands of remote sites that only require a small amount of power. Sunmotor is now building a unit that integrates solar power with a generator backup. When the batteries need a boost in addition to what the sun delivers, the propane-powered genset will start automatically and run until the batteries are again fully charged. For example, this model could provide power for a camp where the noise of a continually running generator is a real annoyance. I also see interesting possibilities in countries with unreliable electricity supplies, a very widespread problem. A Solar Shack unit could provide a backup power supply that automatically kicks in whenever the power grid goes down.

Answered by Eric Jensen, founder, Sunmotor International Ltd.

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The prototype Solar Shack 120 will be deployed this spring. Sunmotor's Eric Jensen has been designing solar units since the early 1980s. Its customer list for previous models includes EnCana and Enerplus Resources.

Photo: Sunmotor International Ltd.