

## Alternative Energy Revitalizes Afghan Hospital

By Army Pfc. Andrya Hill  
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FORWARD OPERATING BASE SHARANA, Afghanistan, June 19, 2009 – The provincial reconstruction team for eastern Afghanistan’s Paktika province has planned and implemented a concept that uses alternative energy to power the Sharana District Center Hospital.



*Navy Lt. David Bennett, physician assistant with the provincial reconstruction team in Afghanistan’s Paktika province, discusses the needs of a local health clinic with Afghan residents, June 11, 2009. U.S. Army photo by Pfc. Andrya Hill*  
(Click photo for screen-resolution image):[high-resolution image](#) available.

“It is a benefit, because we can afford something that requires little to no maintenance for them, and little to no operating cost, so it’s much more sustainable than generators,” said Navy Lt. j.g. Ryan Thrun, an engineer with the provincial reconstruction team.

The project is contracted out to Sustainable Energy Sources of Afghanistan, a nongovernment agency that will provide solar and wind alternatives.

“It is going to be two wind turbines, which will produce 7.5 kilowatts an hour,” Thrun said. “There will also be 24 solar panels installed on the top of the roof, which will provide 200

watts each per hour.”

While the additions won’t provide all of the hospital’s power, they will supplement the current energy sources.

“This is equivalent to a 15-kilowatt generator, based on our assessment of the typical efficiency and amount of wind that we anticipate,” Thrun explained. “It will be sufficient to supply lighting power to the hospital. The hospital is still going to require generator use to run heating and cooling, and the cooler for the mortuary.”

Besides offering a low-maintenance solution, the wind and solar generation will considerably reduce monthly overhead costs.

“To run a 10-kilowatt generator each month costs approximately \$800,” Thrun said, “so it is at least an \$800 per month savings.”

To remedy the typical alternative energy challenges such as lack of wind or sunlight, the provincial reconstruction team plans to use an energy storage system.

“It is not going to operate at maximum efficiency all the time; obviously, at night, they won’t get solar power,” Thrun said. “However, there is a structure that will be installed with power inverters and battery banks to store all the generated electricity that is not being used.”

The project’s results will be used as research to determine whether similar projects should be

undertaken throughout Paktika province.

“This will be the first wind and solar project of this size for Paktika,” Thurn said. “It’s a test pilot project. The analysis at the hospital found that it would be a feasible project, and it will be used to support research done on the benefit of [alternative energy] for the rest of the province.”

The provincial reconstruction team and the Paktika government directors expect development and use of these projects to increase over the coming years.

“Anecdotally, looking at the wind and the amount of sunlight here, alternate power should be sought-after and implemented at facilities of this size,” said Navy Lt. David Bennett, the team’s physician assistant, who works alongside Dr. Abdul Mateen, the provincial health director, to assess and improve the health-care situation in Paktika. The director and local residents are excited and enthusiastic about the program, Bennett said.

In addition to the alternative energy solutions, the provincial reconstruction team has focused on several aspects of refurbishment for the hospital.

“We have several projects right now,” Thurn said. “We are redoing the road that goes around the hospital, we repaired the roof structure, we are constructing a kitchen building and a mortuary with all the necessary equipment and furnishing. We are also putting in some apartments for the family members of the patients.”

Bennett said the hospital treats more than 100,000 patients each year.

(Army Pfc. Andrya Hill serves with the 25th Infantry Division’s 4th Brigade Combat Team public affairs office.)

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