

Water Quality-Water Level-Weather Monitoring Network 174 HydroMet Stations

Supply & Installation of Water Quality-Water Level-Weather Monitoring Network for Afghanistan	
PROJECT OWNER	Ministry of Energy and Water, Kabul, Afghanistan
PROJECT NAME & LOCATION	Real Time Water Quality-Water Level-Weather Monitoring Network Monitoring Project; Afghanistan
PROJECT DESCRIPTION & SCOPE OF WORK	In 2007, Sutron was awarded a contract by the Ministry of Energy and Water (MEW, Kabul) to implement a hydro-meteorological network throughout Afghanistan. The total contract is valued at \$5.99M with an option to have a 3 year AMC.
AWARD DATE	2007 - 2009 with 3 year O&M support
CONTACT(S) INFORMATION	Eng. Mohammad Farhad (Noorzai) Director, Project Co-ordination Unit (PCU) Emergency Irrigation Rehabilitation Project (EIRP) Ministry of Energy & Water Darul Aman Road Kabul, Afghanistan
VALUE & CONTRACT # (if applicable)	@\$5,992,384 Supply & Installation 3 year O&M Contract: \$1,749,150 Supply & Installation of Hydrological Network ICB No, GH-102 , IFB No: GH102 Loan/Credit No.CR-3845-AF
STATION EQUIPMENT	174 HydroMet Stations <ul style="list-style-type: none"> ▶ 163 Stream gauging stations with Bubblers, AT/RH, Rain, Snowfall Sensors ▶ 20 Water Quality (Conductivity, Turbidity & Temperature) Stations ▶ 11 Radar Level Stations
TELEMETRY & RECEIVE SITES	Iridium
SUTRON SUPPORT SERVICES PROVIDED	Site Survey of each site Installation Training Operations & Maintenance



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CHALLENGES & SOLUTIONS

Sutron has extensive experience and knowledge of the challenges posed by Afghanistan's climate, terrain/topography and inaccessible remote gauging sites which gave Sutron a site-selection advantage and expedited the project.

- ▶ Most of Afghanistan's major rivers have their origin within the country and drain across the borders to three different directions
- ▶ Winter temperatures below freezing are common in most parts of the country.

While high altitudes plus cold and snowy weather do not make an optimum working environment, Sutron has over 35 years experience installing and maintaining stations and systems in some of the world's most hostile climates and locales.

Sutron received a National Society of Professional Engineers award for creating the State of Colorado's water rights monitoring system. This system, consisting of over 300 satellite data collection platforms at streamgaging stations, and a central database center, is similar in almost every respect to the one proposed here. The geographic area of Colorado is nearly identical to Afghanistan. The mountains of Colorado are as high, as cold, and as steep and inaccessible. Sutron was able to install and commission the Colorado system in just over one year. The system is still in operation, and is on the second generation of Sutron-provided satellite telemetry equipment.

Sutron has installed a high-altitude snowfall monitoring system for the government of India. The SASE (Snow and Avalanche System) network is located in the Himalaya mountains at altitudes that equal and exceed those in Afghanistan. Snowfall monitoring is by the same WMO-standard gages required for Afghanistan. The data telemetry is by INSAT geosynchronous satellite. The network has been in successful operation for five years.

Sutron also has extensive experience in the mountains of Central and South America. Sutron installed a network of weather and streamgaging stations in the mountains of Peru. Altitudes matched those of the highest mountains in Afghanistan. Primitive conditions required that station equipment be packed in on animals.



SUTRON CORPORATION

22400 Davis Drive
GS-25F604D SBSA

Sterling, VA 20164
NESDIS Certified

(703) 406-2800
ISO Certified

(703) 406-2801 Fax
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www.sutron.com

sales@sutron.com
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