The UOP-Twister System is a unique natural gas dew pointing technology that improves the water and hydrocarbon dew point of wellhead gas to pipeline specifications in a single process unit. This system is supplied by UOP as a packaged system, including the proprietary Twister Supersonic Gas Separator (Twister Tube) and Twister Hydrate Separator.

The Twister Tube is a static mechanical device with multiple flow zones accelerating, rotating and expanding the feed gas to supersonic velocities. The condensable materials (water and hydrocarbons) drop out from the swirling gas due to expansion auto-refrigeration (Joule-Thompson effect) and are removed by the axial inline cyclone separator. The same Twister Tube converts kinetic energy back to pressure, thereby recompressing the dew pointed gas without rotating equipment. The Twister Hydrate Separator allows operation below the hydrate formation temperature without plugging the system.

Applications

The UOP-Twister System can be optimized for specific project dew point requirements. Typical applications include:

- **Remote and offshore locations** - Reliable water and hydrocarbon dew point control to prevent corrosion and hydrate formation in sub-sea pipelines. UOP-Twister technology has been operating successfully offshore since 2003.

- **Underground storage product gas conditioning** - Gas extracted from underground storage facilities, using depleted oil and/or gas fields, require conditioning before delivery to the domestic gas grid. UOP-Twister technology provides efficient performance in removing water and heavy hydrocarbons.

- **Remote power plant fuel gas conditioning** - UOP-Twister technology has been installed as simple and proven gas conditioning systems that eliminate the supply logistics and operating issues with handling chemicals (glycol or methanol), and run with little-or-no operator interventions.

**Feedstock and products**

Typical feed pressure ranges between 725 and 2900 psig (5000 to 20,000 kPag). Feed streams include water saturated associated and non-associated natural gas. The product gas specifications achievable depend on the actual feed characteristics and the allowable pressure drop, but will typically meet or exceed international standard pipeline gas requirements. Depending on the application, the pressure drop across the system will be 20 – 40% of the feed gas pressure. With this pressure drop comparable to standard JT plants, the UOP-Twister System will provide lower hydrocarbon dew points without need for upstream drying.

**Operating range**

Commercial units have demonstrated the reliability and operational simplicity of the UOP-Twister System. The installed capacity of the operated commercial units ranges from 20 to 600 MMSCFD. Different rates can typically be handled within the same compact unit design by adding Twister Tubes.

**Experience**

The UOP-Twister System was introduced more than 10 years ago and has been developed for different applications. As of 2011, 21 Twister Tubes have been put into commercial service in four operating plants.
A UOP-Twister drying & dew pointing system was installed as part of a larger integrated gas and power plant project in Africa.

For more information on the UOP-Twister System, please contact your UOP representative or visit us online at www.uop.com.