

Extreme Precision in an Undersea World

Subsea gas exploration and production is not for the faint of heart. It requires meticulous planning and making sure all equipment is equally up to the task. The first subsea well on the ocean floor was pioneered off California in 1961. We have learned much since then and worked hard on creating the kinds of solutions that make successful subsea natural gas extraction possible.

The risks involved in exploring subsea gas reservoirs are considerable, not the least of which is the water itself. Avoiding and preventing water breakthrough and reducing the risk of hydrate plugs from forming, is of paramount importance.

Equipment needs to be robust enough to withstand the pressures and temperatures at those subsea levels as well as changing operating conditions and fluid composition.

Keeping Track of the Details

In subsea production there are both immediate risks and long-term risks, both should be taken into consideration when sourcing equipment.

The immediate risks with onset of water formation is hydrate formation, with a corresponding need for increased MEG injection, jeopardized production due to water coning in the reservoir, and increased water flow and injected chemicals in lieu of hydrocarbon production.

The long-term risks are categorized as:

- Pipeline integrity
- Pipeline scaling
- Pipeline corrosion & erosion

To track these hazards in real-time, operators require equipment that has sophisticated measurement tools on board, and at the same time is robust enough to stand up to the challenges of the environment. Ideally, a device that provides all necessary measurements in one and can be placed underwater.

Roxar Meets the Challenge

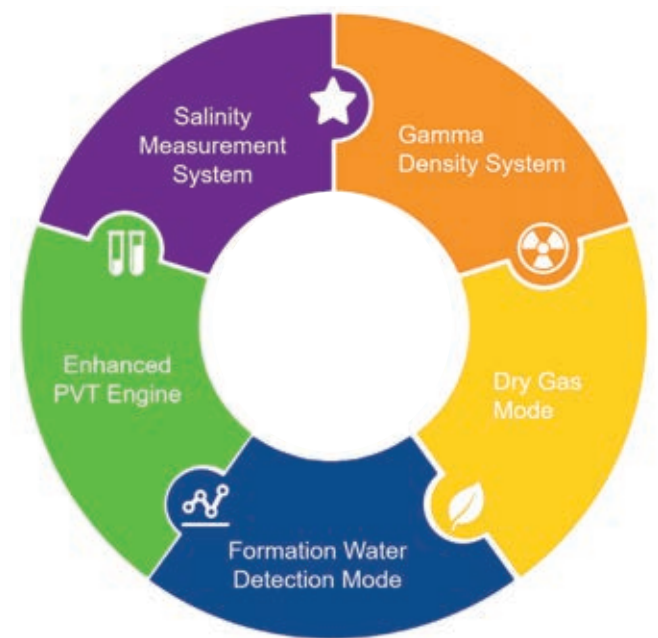
Emerson's Roxar™ Subsea Wetgas Meter has built-in water detection and salinity measurements to distinguish variations in fluid composition, so operators can prevent hydrate formation in the pipeline. Its highly accurate water, gas, and condensate flow measurement reduces the risk of water breakthrough by detecting even the smallest molecules of water coming into the gas flow. Operators can rely on a high level of precision and accuracy in all phases for the entire operating range of the meter.

Field examples have demonstrated that a hydrate plug (ice that forms in the line) can form in as little as 20 minutes from when water entered the flow line. With the Roxar Subsea Wetgas Meter's highly sensitive, rapid, real-time measurements will alert operators to the issue so they can act during this critical window of opportunity.

The Roxar Subsea Wetgas Meter can be tailored to fit each specific need by configuring it with different add-on hardware and software modules.



Roxar Subsea Wetgas Meter



Hardware and Software Add-on Modules

Designed for Success

Technological advances have given the operators the opportunity to develop natural gas resources, previously not available. Digitalization and technology are at a level that they make it possible to unlock new reservoirs previously considered too difficult or resource intense to tackle. Natural gas is a lower carbon alternative to coal, and can be seen as having reduced CO2 emissions, thereby meeting important environmental impact goals. With subsea flow meter solutions able to provide highly sensitive and accurate real-time flow measurement for wet gas streams, the industry has more options to reaching success.

Across global subsea gas applications, operators are aware they need the most advanced solutions available to be as effective and safe as possible. They need to have tools that can accommodate changing operating conditions and varying fluid composition, as well as access to real-time and accurate water, gas, and condensate information.

Uncertainty is engineered out of the solution as much as possible so operators can focus on extracting natural gas instead of troubleshooting.

Consider It Solved.

Learn more about the Roxar Subsea Wetgas Meter, which fields it's used on and how it can solve your subsea challenges, go to: www.Emerson.com/Roxar

