



## Galata Gas Field, Bulgaria

**Inland Technologies** supplied a glycol recycling system to the Galata Gas Field in the Black Sea. The field is located 25 kilometers offshore and during the winter months, there is a requirement for hydrate inhibition to prevent the pipeline from being blocked by natural gas hydrates.

The hydrate inhibitor chosen for this field was Mono-Ethylene Glycol [MEG], which is injected into the subsea pipeline bringing the gas onshore. Production managers used Inland's MEG Concentrator to recycle the wet glycol product coming onshore, also allowing the reclaimed glycol to be re-injected.

### Environment

In order to meet the environmental regulations set out by the European Union for the operation, a COD limit of 25 mg/L for all process water had to be followed. To reach this objective, the cleaned water produced from the MEG Concentrator was sent to a custom-designed reverse osmosis system for polishing.

### Features

The standard design of the MEG Concentrator results in a distillate water stream with approximately 1000 mg/L of MEG.\* Since this level was over the EU regulation for storm water release, this stream was polished using a three-stage reverse osmosis unit to bring glycol [and COD] readings to compliance levels.

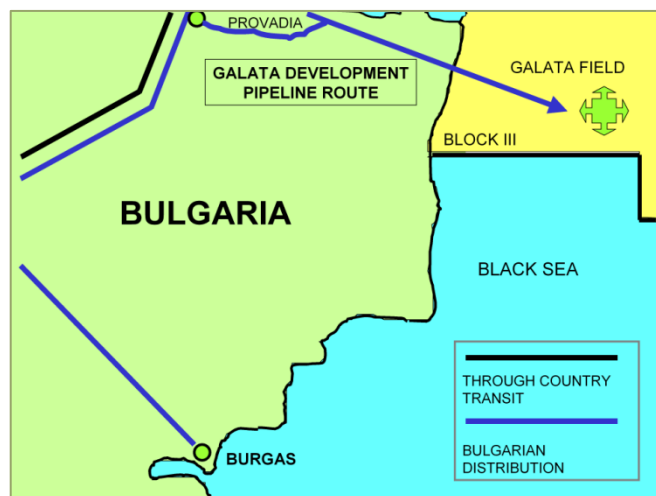


Recycling Mono-ethylene glycol used in hydrate inhibition

Inland's MEG Concentrator uses a thermodynamics cycle known as mechanical vapor recompression. The unit is highly energy-efficient and studies have shown in to be an economical alternative to conventional re-boiler and overhead condenser systems for small fields.

Depending on gas composition and seabed temperatures [typically 4 to 10 degrees Celsius], the unit is best suited to fields with production rates varying from 50 to 150 MMSCFD.

Use of the MEG Concentrator system at Galata resulted in lower overall capital and operating costs.



Schematics of Galata's gas field