

METHODS FOR STORAGE AND TRANSPORTATION OF NATURAL GAS IN LIQUID SOLVENTS

ABSTRACT

Systems and methods to create and store a liquid phase mix of natural gas absorbed in light - hydrocarbon solvents under temperatures and pressures that facilitate improved volumetric ratios of the stored natural gas as compared to CNG and PLNG at the same temperatures and pressures of less than 80° to about -120°F and about 300 psig to about 900 psig. Preferred solvents include ethane, propane and butane, and natural gas liquid (NGL) and liquid pressurized gas (LPG) solvents. Systems and methods for receiving (11,13) raw production or semi - conditioned natural gas, conditioning the gas, producing (14) a liquid phase mix of natural gas absorbed in a light -hydrocarbon solvent, and transporting (16) the mix to a market where pipeline quality gas or fractionated products are delivered in a manner utilizing less energy than CNG, PLNG or LNG systems with better cargo-mass to containment -mass ratio for the natural gas component than CNG systems.

Figure 9