

The invention relates to systems enabling use of liquefied petroleum gas in diesel common-rail engines, and in particular to fueling diesel engines with diesel gas dual-fuel or only gas instead of diesel fuel. A gas ultrasonic transducer system for operating a diesel common-rail engine, comprises an electronic control unit; a water tank; a gas tank with gas supply shut-off valve; a gas level sensor; a gas pump operably connected with the gas tank; a water pump operably connected with the water tank; a mixer comprising a water level sensor and an ultrasonic transducer adapted to generate water vapor and gas mixture; wherein the mixer comprises two compartments: the upper compartment and the lower compartment, the means for separation of the upper and the lower compartments comprising an anti-reflux valve adapted to allow water vapor from the lower compartment to pass through the anti-reflux valve to the upper compartment and to prevent any liquid water from flowing into the upper compartment; wherein the upper compartment of the mixer comprises an outlet operably connected with engine intake manifold; wherein the outlet of the gas pump is operably connected with the upper compartment of the mixer, the outlet of the water pump is operably connected with lower compartment of the mixer, where the ultrasonic transducer is located below the anti-reflux valve. The controlled interaction between elements of the system and vehicle elements results in a gas-water vapor mixture. In case of embodiment with dual fuel, the water gas mixture is calculated on the grounds of information received by the electronic control unit of the system from the engine common-rail, the engine temperature sensor, the air flow meter sensor, the acceleration pedal block.