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A COMPARISON BETWEEN PROPANE AUTOGAS, WHEN VEHICLES ARE UTILIZING THE ICOM JTG II LIQUID INJECTION SYSTEM, AND COMPRESSED NATURAL GAS (CNG)

1. Icom Propane Liquid Injection System Vehicle as compared to a CNG System Vehicle or propane vapor kit:

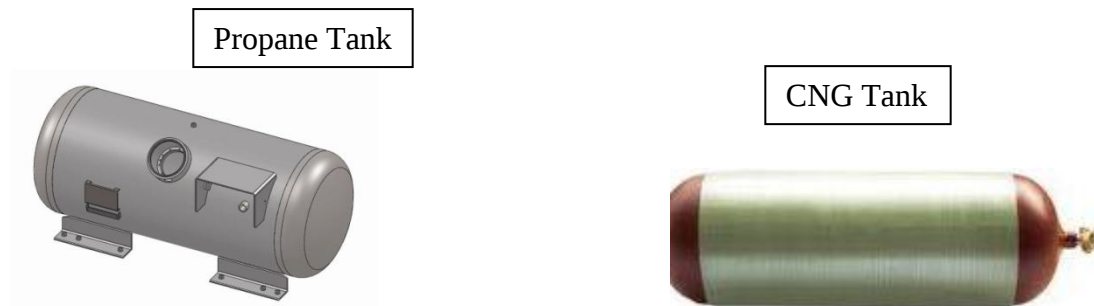
- When Propane is injected as a Liquid much of the lost efficiency associated with CNG Systems and vapor injection propane kits is compensated for. Propane Liquid Injection complete vaporization allows the BTU's of Propane to be best utilized.***
- The Propane Liquid Injection Vehicle will have the same or better performance than the gasoline vehicle and better performance than a CNG vehicle or a vapor propane kit.***
- Propane Liquid Injection allows for substantial cooling of the intake charge due to rapid evaporation of propane in the intake manifold, very similar to gasoline, helps efficiency, and power, by providing a cool dense fuel air charge.***
- Cooling of the exhaust valve due to the substantial cooling effect due to the introduction of Propane in the liquid state the exhaust valve, seat, and combustion chamber receive***

some much needed cooling, reducing exhaust seat erosion, when compared to CNG Injection or vapor propane kits.

- ***Fuel Efficiency/Utilization***
Due to the complete vaporization of Liquid Injection Propane, more of the fuel is used to make power (better utilization of the BTU's), not leaving carbon deposits behind in rings, contaminating oil, or generally "sooting" the engine.
- ***CNG Systems and propane vapor injection kits do not enjoy the many benefits of Propane Liquid Injection for which Icom is a pioneer of and has many patents.***

2. Icom Liquid Injection Propane System Tanks as compared to CNG System tanks:

Same dimensions (20" diameter and 50" length)



- ***The Propane Cylindrical Tank above has approximately 48 USG useable while the CNG Cylindrical Tank above would have only an estimated 17 GGE of Natural Gas in the same space thus the Propane tank will have more than twice the fuel capacity in the same space and allow more vehicle range and at a lesser weight.***
- ***Icom is the leading propane vehicle tank manufacturer in the world, with many tank patents, and designs and manufactures propane tanks of various configurations such as Toroidal (donut) and manifold tanks while CNG tanks only come in Cylindrical tanks as noted above. Thus***

Propane Tanks can utilize available space better allowing for more fuel capacity.

- *For many vehicles adding CNG Tanks does not get near the desired range but Propane Tanks do get the desired range.*

3. Propane Fueling Station as compared to a CNG Fueling Station:

- *Propane Station cost is between approximately \$25,000 to \$100,000 while the CNG Station is between approximately \$300,000 to over \$1,000,000*
- *The electricity and maintenance of a Propane Station is minimal while a CNG Station is very expensive often as much as \$5000 to \$10,000 per month.*
- *The footprint of a Propane Station is often many times smaller than a CNG Station which means property and tax costs of a CNG Station are much higher than a Propane Station and much of an available fleet area is compromised.*
- *Propane stations are at a maximum of 312 PSI while CNG Stations in the USA are at 3600 PSI which is almost 12 times more pressure than a Propane Station.*

4. Fleet Installation, Service or Parking Area:

- *Usually Propane Vehicles can be converted, serviced or parked in an existing shop or building without any renovations or only minimal upgrades. Usually CNG Vehicles require an expensive renovation to convert service or park. (Please check your local codes.)*

5. Cost

Usually Propane Systems are less expensive to CNG Systems by often 30 % to 50% and station and upkeep costs for Propane Stations is much less thus Propane Vehicles are much less expensive and ROI is much faster than CNG Vehicles.

6. Propane is not a Green House Gas but Natural Gas is.

Clearly Propane Autogas utilizing Icom EPA Certified Liquid Injection Systems is the most cost effective and practical path for Fleets to Go Green, Save Green and utilize a Domestic Fuel Source.

Propane is a Natural Gas Liquid.