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DELIVERING AUTOGAS INNOVATIONS

Propane Optimization Process Just One Of Several New Icom Initiatives

A driver is traveling in his bi-fuel propane/gasoline van and decides to flip the switch from propane to gasoline. But he can't, and the vehicle keeps running on propane, resulting in continued fuel cost savings for his company. That is, unless he runs out of propane, and in that case, it will transfer on the fly to gasoline.

The propane optimization process (POP), which allows fleets to make sure that their drivers use the maximum amount of propane in bi-fuel vehicles, is one of several new product initiatives from Icom North America (New Hudson, Mich.).

Icom North America LLC, which integrates, certifies, manufactures, assembles, and distributes the JTG liquid injection propane vehicle system and other liquid injection systems, was founded in 2004 in the United States to introduce the patented Icom JTG liquid injection technologies to the North American market. Ralph Perpetuini, CEO, who was with Icom in Italy for 17 years and came to the United States in 2009, runs the Icom U.S. plant. Albert Venezio, chairman, focuses on business development and sales.

"We've been in the North American market a long time, but you may know us through other companies' systems," Venezio told ***BPN***. "We brought patented Icom JTG liquid injection technology here to the United States in 2004. A large part of the U.S. autogas market [for] the last eight or nine years [has been] utilizing our system in one form or another." Venezio previously worked in a family business for 20 years in international and national auto parts distribution and in the natural gas vehicle industry. He started working with Icom in 2000 on special projects, and saw the opportunity in North America that led to Icom investment in the North American market.

The CleanFUEL USA GM 8.1-L trucks and the Blue Bird GM 8.1-L school bus systems use the Icom JTG system. The Clean FUEL USA GM 6.0-L system is provided in cooperation with Icom North America. CleanFUEL USA obtained Environmental Protection Agency and California Air Resources Board certification on the systems.

Icom became involved in the initial project with CleanFUEL USA in 2004, and that led to additional original equipment manufacturer-type projects. Icom in 2010 began work to certify its own branded Icom JTG II systems, mostly bi-fuel with some dedicated propane systems. The company obtained its first certifications in 2010 and now holds about 60 EPA certifications that cover around 600 vehicle platforms. This year, Icom received 15 new EPA certifications covering more than 100 different 2012-2013 model-year GM and Ford vehicle platforms for its JTG II Propane Liquid Injection bi-fuel and dedicated systems. The Icom JTG II system uses an external long-life fuel pump and fast manual fill.

The company has been busy with new initiatives—new to the U.S., that is. Icom over the past year has begun bringing its direct injection system to the U.S. market. Ford's EcoBoost and General Motors' EcoTec engines use direct injection, and Venezio explained that while liquid injection engines are powered by the injection of gasoline into the manifold, a direct injection engine sends gasoline directly into the combustion chamber. That allows a smaller engine to give the same horsepower as a bigger engine, with lower emissions and higher miles per gallon.

Pictured from left are Robert Rhoa and David Rhoa, co-founders of Lake Michigan Mailers, which chose Icom as the propane system for its fleet of approximately 35 vans. Pictured at right is Albert Venezio of Icom.

"On this direct injection system, we're able to add a propane system to the direct injection engine, and it will run on propane all the time with gasoline as a back-up," stated Perpetuini, who held several management positions during his time with Icom S.p.A. in Italy. He served as product manager and marketing manager before becoming general manager in 1997. "That's also a market that the natural gas guys aren't able to go after because they're not able to apply natural gas yet to a direct injection gasoline engine. So it's a definite advantage to the propane industry."

The Icom JTG Dynamic system, a propane liquid injection blend system for diesels, is another new Icom project

in the U.S. The company has sold the system in Europe for about four years and is preparing the product for the production phase here. It has been certified in Canada, and that involves testing components to –40°F for safety and durability. The system is currently integrated for 10 different diesel engine platforms. Venezio predicts U.S. EPA certification for the product for targeted engines later this year. Fleet users are often seeing savings of the equivalent of 15 to 25 cents per mile using the Icom JTG Dynamic system, along with reduced emissions and a bit more power and torque, Venezio noted.

Icom serves fleet customers in the U.S. and Canada, including Menards home improvement stores, airport transportation company Metro Cars, and shipping company DHL Express. Icom converted 140 new Ford pickup trucks to dedicated propane for store operation use at 37 Menards locations, and CleanFUEL USA built 37 fuel stations for the project.

The company converted some 150 vehicles to bi-fuel propane/gasoline for Metro Cars, which operates shuttles, taxicabs, and limousines at the Detroit Metro Airport. Vehicles included Ford E-450 shuttles, Lincoln Navigators, Lincoln Town Cars, and Chevrolet Suburbans. Icom operates approximately 50 installation and service centers across the United States and continues to add qualified centers.

"The Metro Cars airport project started more than two years ago, and every year they add more vehicles to it," Venezio stated. "They're using a tremendous amount of propane. Many of those vehicles go 200,000-plus miles per year, except for the shuttles, with an excellent track record." Icom is also working on a project to convert numerous vehicles for DHL Express.

Venezio elaborated on the Icom POP system, which he noted is set up so the driver has no input on which fuel to use.

"The system will default to gasoline if he runs out of propane, and it will start on gasoline, but he's not going to choose gasoline just because he wants to run on gasoline," Venezio stated. "The fleet is often paying for propane about $2 per gallon less than gasoline. They don't want him running on gasoline."

Icom began selling the POP system at the beginning of this year after feedback from fleet customers. Companies that buy Icom systems can choose whether to include the POP system or the traditional driver fuel selection option, but Venezio said his fleet customers have chosen to use the POP system in nearly all cases.

"Gasoline is a back-up fuel, basically," he said. "They get a quicker return on investment by using propane more. It's a small addition for us on the technical side, but it means a lot to the bottom line of the fleet." *—Daryl Lubinsky*

More on Icom North America

- Icom established its North American operations in 2004.
- Headquarters and assembly plant in New Hudson, Mich.
- Assembles the Icom JTG II system including numerous tank options such as the patented toroidal tanks (donut-type tanks), cylindrical, and manifold tanks, using a high domestic content, at the New Hudson plant.

Icom converted Chevrolet Suburbans (top photo) for Metro Cars' Detroit Airport transportation fleet to the Icom JTG II liquid injection bi-fuel system. Pictured in the second photo is a 2013 Ford F-150 3.7-L converted using the Icom JTG II liquid injection bi-fuel system. Icom is also working on a project to convert numerous vehicles for DHL Express (bottom photos).