

Iveco Trakker Bi-fuel Ethanol-Diesel for Brazil

- **40-60% Ethanol-Diesel fuel mixture**
- **First tests indicate a 6% reduction in fuel costs**
- **Ethanol-Diesel application better suited to sugar-cane industry operators**

Iveco, FPT Industrial and Bosch presented the Iveco Trakker Bi-Fuel Ethanol-Diesel vehicle at Agrishow, held last week in Ribeirão Preto, the largest agricultural fair in Brazil. The Trakker vehicle is equipped with an FPT Industrial Cursor 9 engine that can run on an ethanol and Diesel mixture with lower fuel costs when compared to a conventional Diesel engine. Designed to be used by sugar-cane and ethanol producers on their specific agricultural and industrial operations, the vehicle has been using a 40-60% Ethanol-Diesel average fuel mix on early tests, which contributes to reduce fossil-fuel use and allows for an improved environmental proposition, since ethanol is a fully renewable fuel.

The Iveco Trakker Bi-Fuel Ethanol-Diesel has been developed in Brazil with the institutional support of UNICA, the Brazilian association of sugar-cane producers under a program to promote "green policies" in the sugar and ethanol business. Iveco began the Bi-Fuel engine development in 2010 with technologic help from FPT Industrial and Bosch. The prototype will now be tested during the 2011 harvest by Raízen, a joint venture company between Cosan (Brazilian largest sugar-cane producer) and Shell.

So far, the 40-60% Ethanol-Diesel substitution rate is giving a 6% reduction in fuel costs in operation within the sugar-cane plantations. "We are still at the early stages of development and certainly we expect to reach a higher Ethanol-Diesel substitution rate bringing even lower operational costs", says Renato Mastrobuono, Product Development Director for Iveco Latin America.



The Iveco Trakker Bi-Fuel prototype is a 6x4 truck used for 63 ton GCM that can be used in several applications on the sugar-cane plantations, such as articulated liquid tank transport. It uses a 360CvCommon Rail Cursor 9 engine. The truck has two fuel tanks (one for Diesel, another for ethanol). There is also an electronic control unit specifically dedicated to each fuel, a pressure pump for the ethanol system and a lambda sensor at the exhaust manifold. The ethanol is injected directly into the intake manifold during the admission stage. After the compression stage, the Diesel is injected to promote combustion. There is no need for anti-knock additives of any kind.

“Another plus of the Bi-Fuel technology is that the engine can be fully reversed to Diesel only application, which will make it easier to resell the vehicle after its use in the sugar-cane environment”, comments Mastrobuono.

Iveco

Iveco, a Fiat Industrial company, designs, manufactures, and markets a broad range of light, medium and heavy commercial vehicles, off-road trucks, city and intercity buses and coaches as well as special vehicles for applications such as fire fighting, off-road missions, defence and civil protection.

Iveco employs almost 25,000 people and runs 24 production units in 11 Countries in the world using excellent technologies developed in 6 research centres. Besides Europe, the company operates in China, Russia, Australia and Latin America. Around 5,000 sales and service outlets in over 160 Countries guarantee technical support wherever in the world an Iveco vehicle is at work.

FPT INDUSTRIAL

FPT Industrial is the Fiat Industrial company specialized in the design, production and sale of propulsion and transmission systems for on- and off-road trucks and commercial vehicles, as well as engines for marine application and power generation. The sector employs some 7,800 people worldwide at 10 plants and 6



R&D centers; the existence of a distribution network of more than 100 dealers and 1000 service points ensures FPT Industrial presence in around 100 countries. With an extensive product portfolio (5 engine families ranging in output from 50 hp to 870 hp and transmissions with maximum torque from 300 to 400 Nm) and a strong emphasis on research and development, FPT Industrial is one of the world's leading producers of powertrains for industrial application.

Torino, 9th May 2011