

RELEASE : March 24, 2012

KATZEN International, Inc. announced today that it has been selected to provide the process technology for the Alcoholes de Uruguay (ALUR) grain-based ethanol plant, to be constructed by the ABENER EPC division of Abengoa in Paysandú, Uruguay. This will be KATZEN's 7<sup>th</sup> ethanol plant designed in collaboration with ABENER. With more than 55 years in the biochemical processing industry, KATZEN process designs have been implemented in over 140 completed ethanol and biofuels-related projects in 35 countries, worldwide.

The ALUR ethanol plant is planned for a daily ethanol capacity of 215,000 liters utilizing KATZEN's proprietary Bio-Focused *FLEXible* technology, enabling the usage of multiple feedstocks to produce multiple ethanol products. The design enables the use of corn, grain sorghum, wheat or barley with minimal chemical usage and no antibiotics to produce fuel and high grade ethanol. This technology produces a superior high protein animal feed (DDGS) co-product, thus ensuring ALUR an advantage in the emerging markets in Uruguay. KATZEN's liaison for operations training, commissioning, and start-up will support the joint venture to be established between ABENER and ALUR to operate and maintain the plant after construction.



# KATZEN

INTERNATIONAL, INC.

**Recognized for production efficiency, reliability, consistency and robust durability, KATZEN-designed plants demonstrate results.**

Located in Nueva Esperanza, Paraguay, INPASA added a new KATZEN-designed distillation system that was integrated into their existing ethanol plant, and started-up in August, 2011. This distillation system, capable of producing 140 MM liters/year hydrous ethanol product, incorporates KATZEN technology to replace five manually-operated distillation towers with only two towers which are completely automated. The new KATZEN distillation system is an energy-efficient design that has dramatically reduced steam consumption for the distillation process and significantly improved ethanol yield. In addition, the new system operates continuously without cleaning – a drastic improvement over the previous system which needed to be shut down once every five days.



## Technology

KATZEN International is a leading provider of technology and engineering services with a strategic focus on development and application of bioethanol worldwide. Our technology integrates processing of multiple feedstocks with the fermentation and purification of ethanol and coproducts. Many of our processes are specifically designed to utilize multiple feedstocks, including, but not limited to sugar, molasses, sweet sorghum, wheat, barley, cassava, potatoes, cheese whey permeate, grain sorghum, corn and others. As well, the plant can, with proper consideration, be designed to enable the production of multiple grades of final ethanol product from anhydrous motor fuel grade ethanol to hydrous industrial and high quality grade ethanol. To engineer and construct our integrated facilities, KATZEN works closely with EPC firms to provide a complete facility.



## Greater On-stream Time

KATZEN-designed plants have excellent demonstrated on-stream time. Our plants have demonstrated on-stream time of 350+ days, when operated as designed and coordinated with a preventative maintenance program. Greater on-stream time is a result of the many advantages of the KATZEN process design as well as many additional services provided by the KATZEN team that assist in maximizing operating performance. KATZEN process designs minimize contamination events because of biology-focused, hygienic process design of equipment and piping, and highly automated CIP and fermentation management systems.



## Automation

We are also a leader in the field of plant automation. This, however, should not be viewed as only instrumentation, but as a concerted effort to set up the equipment and system sequencing that produces the consistent operations that are vital to product and coproduct quality. Because of the automated systems the average number of staff is minimized.

## Involvement

KATZEN provides the most detailed, complete process design package (PDP) in the industry which becomes the basis for detailed design, procurement and construction. KATZEN then continues to work with an EPC or EPCM, chosen by the plant owner, to develop the successful implementation of our process design.



Our commitment to each client and project does not end once the plant is built, however. KATZEN is on site to assist with plant start-up, training and operations troubleshooting. Our vast experience base enables us to lead our clients through business planning, project development and successful execution and implementation of their unique, customized project.

## Innovation

In addition to the quality of execution of our work, our vast experience with ethanol-related projects has allowed us to develop proprietary designs for enhanced plant efficiency and operation. We have developed many customized solutions to the various unit operations throughout the plant, which allows the design to be tailored specifically to the customer's needs.

KATZEN-designed processes are characterized by high yield, excellent quality coproducts, and low steam consumption.



## Principles

At KATZEN, we believe in speaking the truth and doing what is in the best interest of our clients, even when it is not popular. Our commitment to standing behind what is right has helped us to steer clients away from impractical "pipe dreams" and to focus initial efforts on the most profitable applications which provide sustainable competitive advantages to the project. This stance has enabled KATZEN to develop new advanced technology and has led to commercialization of our own and our clients' proprietary processes.

**KATZEN**  
INTERNATIONAL, INC.

2300 Wall St. Ste. K  
Cincinnati, Ohio 45152

Phone +513-351-7500  
Fax: +513351-0810  
URL [www.katzen.com](http://www.katzen.com)