Case Study

# Ethanol Plant Modifications Result in Capacity Increase

## Operating Issue

When the production capacity of a Midwest ethanol plant was limited to 80% by their existing air pollution control equipment, Pollution System Solutions was sought to utilize their industry knowledge and resources to identify the underlying issue and resolve it.

## Project Solution

After carefully considering the Thermal Recuperative Oxidizer's design, airflow patterns, pressure drops and the air moving equipment, Pollution Systems was able to determine the oxidizer's shortcomings and developed and implemented a cost-effective solution.

The ill-fitting configuration of the system significantly affected the performance of the main exhaust fan and impacted the heat exchanger and burner, downstream. It was determined that the fan and other equipment were adequately sized however, modifications to the ductwork and equipment location would rectify the problem. Interestingly, two other companies had recommended increasing the size of the fan, which would have been significantly more expensive and take 8 to 12 weeks to implement.

A new evase (right) was designed and constructed for the outlet of the main exhaust fan. This enabled better airflow through the heat exchanger and reduced static pressure in the system. With the evase in place and several other relatively minor mechanical changes to the ductwork, the system performance exceeded original expectations.


## Customer Benefit

Overall system capacity increased 25% without the major expenses associated with purchasing and installing larger equipment. Within six weeks of the initial site visit, the problem had been correctly identified and a cost-effective solution was implemented, resulting in a daily increase of tens of thousands of dollars in operating profit for the ethanol plant.

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