Port Arthur Steam Energy LP

Port Arthur Steam Energy LP (PASE) is one of the largest examples of industrial energy efficiency in the United States. This waste heat recovery project, located in Port Arthur, Texas, achieved commercial operation in August, 2005. PASE produces approximately 450,000 lb/hr of high pressure steam from heat recovered from three petroleum coke calcining kilns at the Great Lakes Carbon LLC calcining facility. A majority of the steam is sold to the neighboring Valero-Port Arthur refinery for process use, with the balance used to produce 4 to 5 MW of electricity. The power generated is used by Great Lakes Carbon and PASE to serve internal load requirements.

By capturing 1800-2000ºF heat that would otherwise be wasted out of the kiln stacks, the steam and power produced have no associated emissions - making PASE an extremely "green" project. The project recovers nearly 5 trillion BTUs/year, displacing natural gas combustion in fired boilers at the refinery. It is estimated that PASE offsets over 200 tons/yr of NO_x and over 280,000 tons/yr of greenhouse gases (CO_2) that would otherwise be emitted to the atmosphere in supplying this energy.

The 2004-05 refurbishment and plant upgrade project included a new distributed control system, heightened stacks, boiler tube and refractory replacement, water treatment system upgrade, and the installation of multiclone particulate removal systems to each boiler.

Integral Power, LLC (Houston, TX) led the development and execution effort for this unique brownfield project, with funding provided by American Industrial Partners. PASE contracts with North American Energy Services for day-to-day operations and maintenance of the facility, which includes 23 full time employees.

For more information regarding PASE, please contact Integral Power, LLC at 713-824-6851.