GLOSSARY OF INDUSTRY TERMS

Aromatics – One of the three principal groups or series of hydrocarbon compounds that occurs naturally in crude oil. Commercial petroleum aromatics are benzene, toluene, and xylene.

Bottom-of-the-Barrel (Residual) Fuel – Heavy residual fuel oil, often high in sulfur and metals, that remains after the lighter portion has been distilled off.

Catalytic Cracking – The fluidized catalytic cracking process of breaking up heavier hydrocarbon molecules into lighter hydrocarbon fractions (see Cracking below).

Circulating Fluidized-Bed (CFB) Boilers – Used with a variety of fuels, particularly successful at burning those of poor quality. When the flow of air reaches a certain velocity, it causes the solid particles to lift (or fluidize) and combustion occurs in this fluidized zone.

Cogeneration – The use of a single plant to simultaneously produce power and heat or steam from a single energy source.

Coke (petroleum) – Also known as petcoke, is a high carbon content solid residue from an oil refinery process, which can be used as a boiler fuel to produce steam and electric power. Often has a higher heat content than coal.

Coking – Processes for thermally converting and upgrading heavy residual oil into lighter, higher value products. A by-product of this process is petroleum coke.

Combined Cycle – An electric power generating technology which combines the power production of a gas turbine and of a steam turbine. The steam turbine is fed by steam produced by recovering the gas turbine exhaust gas heat in a heat recovery steam generator.

Condensate – A natural gas liquid that precipitates from, or is stripped out of, natural gas. It is a by-product of natural gas production.

Cracking – The production of lighter oils by breaking down heavy oil molecules. This process increases the yield of light distillates (gasoline and diesel) from crude oil.

Deasphalting – Process of removing asphaltic materials from reduced crude using liquid solvents (propane, butane, pentane) to extract non- asphaltic compounds.

Delayed Coking – A semi-batch coking process that raises the temperature of the heavy oil residue to nearly 1000^{o} F. The residue resides in the drum for a specific cycle time, usually 12 to 24 hours. During this time, the heavier material cracks into lighter components and petroleum coke. Depending on coke quality, the coke can be used either as a fuel or in other applications such as the manufacturing of steel or aluminum.

Downstream – The refining or processing of crude oil into finished fuel products.

EBITDA – EBITDA is a supplemental, non generally accepted accounting principal (GAAP) financial measure. EBITDA is defined as earnings or loss before taxes, interest expense, depreciation and amortization.

Feedstock – Material fed into a processing unit.

Flue Gas Desulfurization – Process used to remove sulfur oxides from the combustion gases of a boiler plant or fluid catalytic cracking unit before discharge to the atmosphere. Also referred to as scrubbing.

Gasification – A process that converts any carbon-containing material into a synthesis gas, often called syngas, composed primarily of carbon monoxide, hydrogen and carbon dioxide. Syngas can be used as a fuel to generate electricity by gas turbine or used as a basic chemical building block for a large number of uses in the petrochemical and refining industries.

Hydrocracking – This exposes heavy fuel oil to hydrogen at high pressure and temperature in the presence of a catalyst to reduce sulfur and produce lighter oils by cracking the heavy oil molecules. Predominant process for producing diesel from heavier feedstocks.

Independent Power Producer – A producer of electricity that is not regulated as a utility by a state or federal authority.

Integrated Gasification Combined Cycle (IGCC) – A process configuration integrating gasification (see above), syngas treatment and washing section and finally a gas turbine combined cycle to produce electric power with minimum environmental impact.

Liquefied Natural Gas (LNG) – Natural gas (primarily methane) that has been liquefied by reducing its temperature to - 260^{o} F at atmospheric pressure.

Low-NOx Burners – Coal or oil burners designed to minimize the formation of nitrogen oxides, also known as NOx, during the combustion of fuel in boilers.

Lump-Sum Turnkey Project – Fixed price project for which all components are within a single supplier's responsibility.

Pulverized Fuel (PF) Boilers – Usually in the higher capacity range (over 200 megawatts), fuelled by pulverized solid coal or petroleum coke. Traditionally, customers are utilities.

Scrubbing – Purification of a gas by washing it with a liquid in a tower.

Selective Catalytic Reduction (SCR) – A control system consisting of catalyst material and an ammonia injection system that reduces NOx pollution into more basic non-polluting elements (water and nitrogen). These NOx compounds are by-products of the combustion process found in boiler and gas turbine flue gas.

Steam Methane Reforming – A heater that converts methane into hydrogen by the use of steam.

Supercritical Boilers – Operate at pressures beyond the supercritical point for steam, allowing the steam to convert directly from a liquid to a vapor without needing a steam separation device such as a boiler drum. This increases the steam's ability to absorb more heat from the fuel resulting in a more efficient power plant, reducing fuel consumption as well as emissions such as carbon dioxide.

Upstream – The exploration, production, and transportation of oil and gas.

Visbreaking – Heating of heavy oil residue to a high temperature to crack some of it to lighter components to reduce the viscosity of the stream.

Waste-to-Energy (WTE) – A technology to produce electric power and heat by burning waste materials in a suitable boiler. These materials can include municipal solid waste, or its fractions, refuse-derived fuel, etc.

Waste Heat Recovery – A process to recover heat from fluid, which otherwise would be lost to the atmosphere.