

# RENTECH, INC.

## A Company Profile

### Who is Rentech?

Los Angeles, California-based Rentech, Inc. is a process technology company that offers energy independence solutions by utilizing American resources to economically produce ultra-clean fuels and chemical products. Rentech has developed and licenses a patented and proprietary Fischer-Tropsch (FT) coal-to-liquids (CTL) and gas-to-liquids (GTL) process for converting synthesis gas made from coal, petroleum coke, natural gas, and other solid or liquid carbon-bearing materials into high-value products. These include ultra-low sulfur and ultra-low aromatic synthetic diesel fuels (SDF), naphtha, and specialty products such as waxes, petrochemical feedstock, fuel cell feedstock and synthetic lubricant base stock. In addition, Rentech has developed patented process integration plans with other GTL processes such as ammonia and methanol.

### What is Rentech's business strategy?

Rentech believes that its process technology provides the broadest range of development opportunities and overall technological advantages for producing SDF and other valuable products from the world's large reserves of coal, petroleum coke, natural gas, industrial waste gas and heavy crude oil. This can facilitate a country's efforts in meeting the increasing demand for ultra-clean transportation fuel, reducing dependence on foreign petroleum while significantly reducing emissions from motor vehicles.



Rentech's strategic plan for achieving this objective is to:

- **Accelerate deployment of the Rentech Process.** Rentech's strategy for jump-starting CTL production will be through the acquisition and conversion of an existing facility. Its immediate plan calls for the conversion of Rentech Energy Midwest Corporation's natural gas fed ammonia fertilizer plant in East Dubuque, Illinois to a coal fed plant that will produce Rentech's ultra-clean fuels, ammonia fertilizer, and other associated products. Existing infrastructure will be used to speed up the CTL implementation process while deriving revenue and cash flow from the existing facility during the three and a half year conversion.
- **Develop Strategic Projects in the United States.** Rentech intends to expand the use of its CTL process through projects at multiple sites. It has already proposed the development of a 10,000 barrel per day strategic fuels plant near Natchez, Mississippi that would implement the Rentech Process technology for converting petroleum coke or coal to ultra-clean fuels. The Company is also investigating the application of its technology to be located at the mouth of coal mines, thereby taking the technology to the feedstock source.
- **Develop a repeatable and scalable process.** Rentech plans to utilize the engineering information and knowledge it gains from the conversion project at Rentech Energy Midwest to develop a footprint for future plants ranging in sizes up to 50,000 barrels per day of production per plant. Rentech has signed a Joint Development Agreement with Peabody Energy and has initiated scoping and feasibility studies for two facilities. The initial plants will range in size from 10,000 to 30,000 barrels per day to be located at or near mine mouth locations on Peabody coal reserves.
- **FT Technology leadership.** Through continued innovation through research and development Rentech intends to be not only one of the leaders in FT development today but also in the

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future. We are taking steps to secure our leadership role with the development of our 10-12 barrel per day Product Development Unit at Sand Creek in Commerce City, Colorado. This will be a fully integrated coal-to-liquids facility designed to: produce test quantities of ultra-clean fuels; provide operating training; and, be Rentech's center for FT technology advancement.

- **Expand the reach of the Rentech Process.** As Rentech moves forward with its strategic plan, the Company intends to license its technology on a selected basis. The Company has issued its first domestic license for an initial 11,000 barrel per day plant in Wyoming.

## Rentech Corporate Structure

Rentech is supported by three operating groups to aggressively move its process technology to market:

- Research & Development;
- Technical & Engineering Services; and
- Project Development.

Historically, significant effort has been focused on research and development. However, due to recent advancements and the growth in demand both domestically and internationally for SDF fuel, Rentech's focus has expanded to emphasize Technology & Engineering Services and Project Development.

Rentech is actively moving into project development to identify economically attractive GTL development and related opportunities. By not relying exclusively on third-party development, Rentech can leverage its extensive knowledge and expertise in hydrocarbon to fuels processes to target projects that might otherwise be missed opportunities. Rentech Development Corporation can act as an equity partner, a project developer for a consortium of equity partners or a developer with or without long-term participation.

Key targets for potential development projects include:

- Greenfield development of SDF with minimal power co-production;
- Conversion/expansion of ammonia facilities with co-production of ammonia fertilizer, SDF and power; and
- Mine Mouth plants with co-production of SDF, chemicals and power.

In addition to the core business projects discussed above, Rentech owns a subsidiary company acquired to support the cash flow needs of the parent company while in a research and development mode.

- **Petroleum Mudlogging** – an energy service company with 35 manned logging units servicing the mid-continent oil and gas producing region of the U.S.



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## What are Fischer-Tropsch fuels?

Fischer-Tropsch is a proven gas-to-liquid process, invented in 1923, to produce synthetic fuel. This process was originally developed in Germany to supply fuel for its military in World War II. More recently, South Africa developed a large FT process for coal and natural gas conversion after UN sanctions were imposed against petroleum imports during apartheid.

Rentech synthetic diesel fuel has very low environmental impact compared to petroleum-based diesel. SDF has near-zero sulfur content and low aromatics – it is colorless, odorless and low in toxicity. SDF is interchangeable with conventional diesel fuels and can be blended with petroleum diesel with little or no modification to engines or additional delivery infrastructure. The EPA has concluded that, “Fischer-Tropsch fuels offer important emission benefits compared with diesel, reducing nitrogen oxide, carbon monoxide and particulate matter.” USEPA, “Clean Alternative Fuels: Fischer-Tropsch,” EPA420-F-00-036, March 2002, [www.epa.gov](http://www.epa.gov). SDF qualifies as an alternative fuel under the U.S. Energy Policy Act of 1992 and California State standards.

## Why Fischer-Tropsch fuels?

In addition to reducing emissions from motor vehicles, domestic production of SDF can bolster U.S. efforts to reduce its growing dependency on imported petroleum imports. The U.S. Department of Energy's (DOE) Energy Information Agency forecasts U.S. petroleum imports to grow over 6.5 million BPD over the next 25 years as U.S. refining capacity additions level off and transportation fuel demand continues to increase. Electricity demand, also predicted to increase within the next 10 years, will require the construction of at least 15 GW of new capacity. Co-production of SDF and electric power using IGCC, an advanced clean coal technology, could be a major factor in meeting these future needs while reducing U.S. dependence on foreign sources.

The demand for SDF in California alone could be substantial. The California Energy Commission (CEC) reported in 2003 that California consumes 49.5 million gallons of gasoline and diesel a day with demand in that State projected to increase 36% over the next 20 years (CEC Integrated Energy Report, Dec. 2003). To meet this demand, the CEC recommended that domestic alternatives to petroleum fuels be developed as the only other alternative is to increase fuel imports, with their price volatility and supply uncertainties. In a July 2003 Joint Agency Report, “Reducing California's Petroleum Dependence,” the California Air Resources Board and CEC concluded that SDF is “the leading alternative fuel” that meets the economic and environmental parameters for near-term transportation fuels.

## The Rentech Process Technology

Rentech Process Technology builds on the traditional Fischer-Tropsch (FT) technology platform and adds improvements in catalyst design, process flow, systems controls and system integration. Rentech's proprietary process enables industry to economically convert hydrocarbons, such as coal, petroleum coke and stranded or remote natural gas into valuable products such as ultra-clean FT diesel, chemicals and specialty waxes.

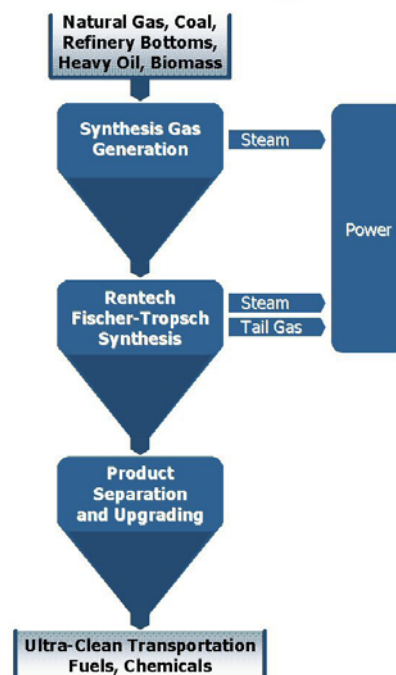
Incorporated in 1981 and publicly traded since 1991 (AMEX:RTK), Rentech has become one of the world leaders in FT technology development. During this time, Rentech has built and operated 5 pilot plants, developed 19 iterations of catalyst, received 15 U.S. patents



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and 2 Australian patents. Rentech successfully designed, built and operated the largest FT slurry reactor in the world — outside of South Africa — at its Synhytech plant in Pueblo, Colorado (shown above).

The Rentech Process Technology converts synthesis gas made from carbon-bearing feedstock, including coal, natural gas and petroleum coke. The synthesis gas is fed to a slurry reactor containing Rentech's patented and proprietary iron catalyst. In the slurry reactor, the synthesis gas is converted to an ultra-low sulfur, ultra-low aromatic liquid that can then be processed into various high-grade products such as SDF, solvents, naphtha, waxes and lube oil stock. Rentech's extensive GTL experience, combined with its three-year efforts with Texaco under the DOE's Vision 21 Early Entrance Co-Production project, has resulted in one of the most extensive and successful development efforts involving hydrocarbons-to-liquids in the past fifty years. These efforts were validated by the successful implementation and operation of the Rentech Process Technology by Texaco at the DOE Laporte, Texas gas-to-liquids test facility in October of 2000.



## What are the benefits of Rentech's slurry reactor with iron catalyst?

Rentech's iron-based catalyst and its efficient utilization in a fully integrated GTL complex is the key component of Rentech's Process Technology. The end result is a relatively inexpensive and non-polluting facility that can operate with a broad range of feedstock.

Rentech's iron-based catalyst has a wide range of operational H<sub>2</sub>:CO ratios which provide flexibility in process design while avoiding patent disputes associated with cobalt-based technologies. The slurry reactor design with iron catalyst provides:

- The lowest per-unit capital investment and operating expense;
- High carbon conversion efficiency in a single pass system;
- Ability to convert a wide range of feedstock, including remote or stranded gas, coal, petroleum coke and industrial off-gas;
- Excellent temperature control/low pressure drop;
- On-line catalyst withdrawal/replacement; and
- No environmental issues with catalyst disposal.

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