Coal-to-Liquids: Technology, Commercialization, and Potential Contribution to US and Global Energy Pool

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Overview

Interest in commercial coal-to-liquids (CTL) technologies, limited for decades to countries with political rather than economic drivers, has heightened in the past few years due to concerns over the tightening market for crude oils and their products. A number of companies such as Sasol, Rentech, Syntroleum, and others have made advances in hardware design, catalysts, and operating conditions in an attempt to improve CTL economics. Certain governments including the United States and Peoples Republic of China as well as US States with large reserves of coal such as Montana have taken leading positions in developing and implementing CTL as a component of their long-term energy strategies.

In this paper, key CTL technologies are reviewed and their champions and recent commercial activity are discussed. The economic potential for various approaches is analyzed along with the prospects for significant commercial implementation of these technologies. CTL transportation fuels and niche products are discussed as well as their market potential and impact on the US and global energy picture.