

Rockets key to better gasification

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EXXONMOBIL is looking into the possibility of using rocket engine technologies to improve efficiency and reduce the cost of converting raw materials into gas.

The oil and gas super major has signed an agreement with Pratt & Whitney Rocketdyne – better known for developing the engine systems that power NASA’s Space Shuttle – to develop and test new gasification technology for converting coal, coke or biomass.



The work focuses on the development of a gasification-reactor system, which has the potential to offer significant advantages compared to conventional approaches.

PWR’s rocket engine expertise, which includes uniform feed distribution, high temperature combustion and rapid heat removal, will be used to create a smaller and more cost-effective system.

“Turning coal and similar energy sources into synthesis gas would allow these sources to be converted into a range of products, including chemicals, transportation fuels and power plant feedstock,” ExxonMobil Research and Engineering Company president Rich Pisarczyk said.

“Gasification also helps enable the adoption of carbon capture and storage and therefore reduces emissions from the use of coal and other heavy feedstocks.”

Work has begun on pilot plants to test the technology at the Gas Technologies Institute in Des Plaines, Illinois, and the Energy and Environmental Research Center in Grand Forks, North Dakota.

ExxonMobil is also cooperating with Pratt & Whitney Rocketdyne to help identify potential interested parties for demonstration.