

## Energy Insider by William Engdahl

### A new gasoline technology

*As lighter crudes are becoming scarcer, Ashland has come up with a process that needs only heavy crude to produce as much as 20 percent more gasoline.*

A major U.S. oil company has just announced what it claims is a breakthrough in refining technology which could substantially increase production of gasoline from so-called heavy crude.

Announcing the new refining technology earlier this month, Ashland Oil Co. Chairman Orin E. Atkins stated that "this promises to be one of the more revolutionary steps in the refinery process and can help cut imports."

Ashland's new process, developed by engineer George Meyers after several years of testing, allows heavy crude to be refined into gasoline for the first time. Until now, the less desirable heavier grade crudes could only be converted into asphalt for road paving or burned by electric utilities because of the difficulties in removing the high-sulfur and trace metals contents.

The Ashland process converts the sulfur into easily disposable hydrogen sulfide gas while binding traces of nickel and vanadium to a special catalyst developed by the Ashland team.

Although problems of scale will be an estimated three or more years away—by which time a major plant can be developed using the new process—Ashland calculates that the process could allow us to produce the same amount of gasoline with 20 percent less crude oil input. Since April 1978, Ashland has been running a 200 barrel

per day experimental pilot plant and plans to build a medium-sized 40,000 bpd facility to augment its 180,000 bpd refinery in Catlettsburg, Kentucky. That addition will add an estimated 25,000 bpd of gasoline to the plant's current 90,000 bpd yield.

On an industry-wide average, refiners get only 50 percent gasoline per barrel of crude. Union Oil of California, a leader in new refining technologies, is known to average 60 percent utilization. Ashland now claims 70 percent by its new process.

Before the Ashland process, heavy crude was considered less desirable because of its limited application. The new process "makes everybody's heavy oil more valuable" Atkins stated. Canada, Venezuela and regions of the United States such as California and parts of the Rocky Mountains contain substantial deposits of heavy crude. Heavy crudes have tended to be more costly to refine compared with lighter oils because of higher sand content, higher viscosity and related problems.

Commenting on the Ashland process, an *EIR* subscriber with extensive experience in the refining industry said "this is very exciting if it works," cautioning that actual costs for the process may run as high as that for coal conversion technologies. Carter administration decontrol of heavy oil prices opened greater interest in the en-

ergy source, leading some industry sources to call it the "new frontier for both industrialized areas of the world and for developing nations."

One reason for the greater interest in obtaining more profitable gasoline from heavy crudes by companies such as Ashland is the fact that in recent years the asphalt market has become less profitable in the U.S. One refinery expert noted a major reason: Despite escalation of gasoline prices of more than 100 percent in the last 12 months, federal and state funds for highway construction and repair have actually declined. Traditionally, since the 1959 Defense Highway Act created a fund to be financed by gasoline taxes, the tax is a set number of cents per gallon, not a percentage of pump price. Thus, while prices have risen, tax yields have actually declined because of a 6-7 percent decline in overall gasoline consumption. A major shift to gasoline production, because of the more lucrative \$40 per barrel prices compared to current prices of \$11.50 per barrel for high sulfur feedstock sold as heavy fuel oil, could cause asphalt shortages in several years, the expert noted.

Pricing geometries aside, the Ashland process, if economical, could herald a major new resource development as lighter crudes become more scarce.

While the Ashland process described above indicates that technological innovations can open entire new areas of resource recovery, there is a current problem on which I will be commenting at length in an upcoming column. The problem? We are swimming in a surplus of crude oil and its refined products.