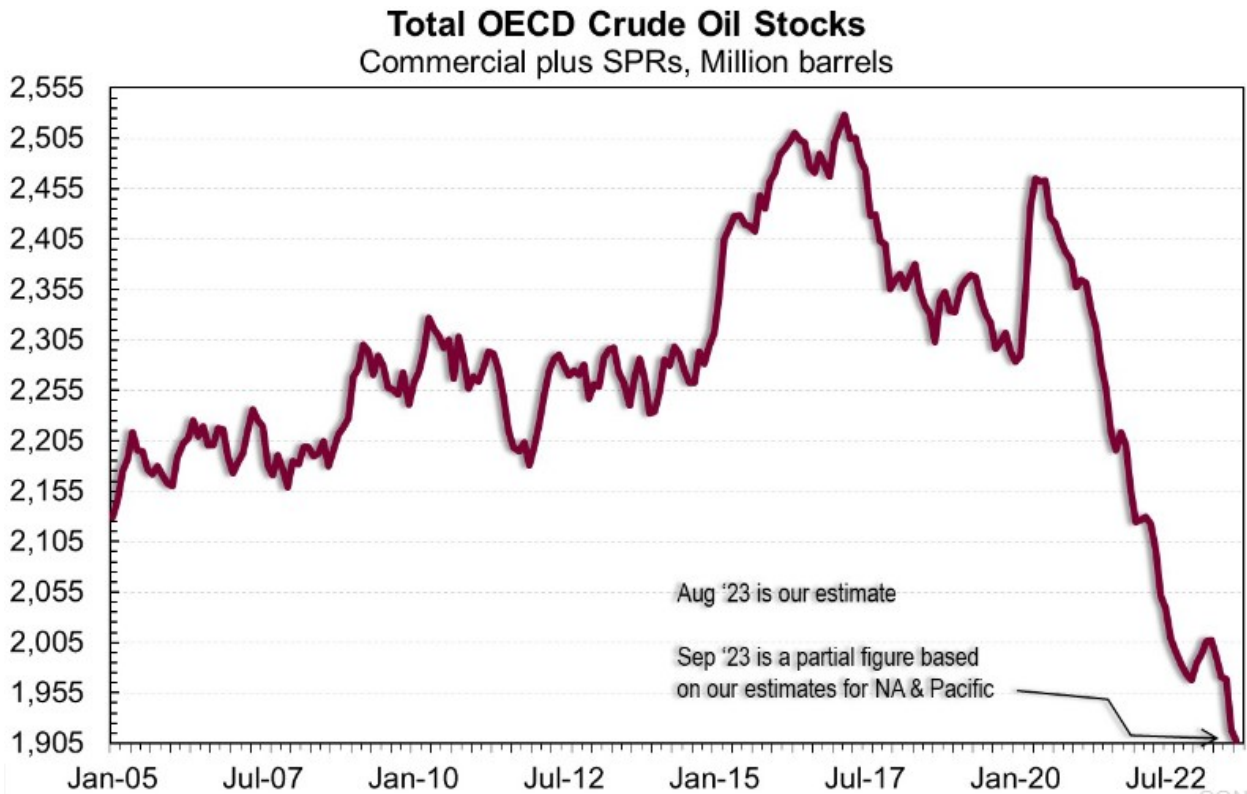


ENERGY REALITY TODAY, 3Q UPDATE

Why has the price of gasoline gone up so high today? Gasoline prices now range anywhere from \$3.50 to \$7.50 a gallon (depending on state taxes). The answer is that global oil demand registered a historic high of 104MM barrels per day (B/D) in the first half of 2023. Demand for oil appears to be inelastic up to at least \$100/barrel (bbl) and maybe as high as \$120/bbl. Because worldwide demand continues to increase, coupled with historically low global oil inventories, the global oil balance is very tight now and getting tighter. These are the primary reasons why oil could stay in an elevated price range of \$80/bbl to \$100/bbl.

The October 5, 2023 chart below was prepared by Mike Rothman of Cornerstone Analytics. Mike has been following the energy industry for forty years and has the most in-depth data for analyzing the energy industry. The chart below is a proxy for world-wide INVENTORIES. There have been innumerable questions about global demand, i.e., recessions in the U.S., or China's slowing economy, or questions about disruptions and additions to supply. The data on inventories is literally the result of supply and demand. This chart speaks to the unmistakable tightness in the oil markets because inventories are at a dangerous multi-decade low. Note that pumping from our Strategic Petroleum Reserve (SPR) is included in this calculation and has done little to arrest the resulting inventory decline.



Oil trades on the futures market called West Texas Intermediate “WTI.” It is the North American benchmark for about 1/3 of oil trading. Brent Crude is the other benchmark for 2/3 of world oil trading. Domestic crude stocks (inventories) in Cushing, Oklahoma, our nation’s oil storage base for a network of oil pipelines, dropped this fall to a record low of 22.9 million barrels, from 55 million barrels in January 2021, and 42 million barrels this past June 2023. This primary U.S. storage facility is now at a dangerously low 25% operating level. The U.S. Strategic Petroleum Reserve (SPR) has been 50% depleted in just the last two years. Russian and Saudi Arabian production have been reduced by 1.3MM B/D, both from maintenance issues with old Russian wells and Saudi’s intentional 1MM B/D cut in production. The rupture of the Nord Stream Pipeline has reduced supplies by another 1.1MM B/D. Balancing the Saudi government’s operating budget requires that oil is priced over \$100/bbl. Knowing this, one can disregard any rumors that the Saudi’s will try and help the U.S. by increasing oil production. Production in the U.S., while slowly beginning to rise again, is below 2019 production because of lower capital expenditures for the last three years, fewer issued drilling permits, and far less federal acreage leasing.

World global oil demand statistics: Autos 25%; Trucks 20%, Petrochemicals (plastics) 25%; Railroads 18%; Planes 5%; Ships and boats 5%; Heat & Power 2%. EIGHTY percent of the world’s economic activity runs on oil and gas. In FMR’s April 2022 “Energy Reality Today” analysis, 1 billion of the 7.9 billion world population lacks access to electricity. Three billion people do not have access to clean cooking fuels. Fifty-five percent of China’s energy comes from coal. While the world has been transitioning to increased energy consumption per capita over the past several decades, there is no substitute of sufficient volume to displace oil and gas in the global energy mix. To hold the price of oil stable longer term, additional oil and gas reserves are desperately needed. That will be unless the world delivers major cost and technically effective decarbonization solutions. Most likely, coal, nuclear, wind, solar, hydro, and hydrogen, and of course oil and gas, will all play an important role in supplying energy for the world’s economy. Nevertheless, it is likely that a tight supply/demand condition in oil and gas will continue for decades not years.