# Fiscal Year 2007 in Review

#### **Overview:**

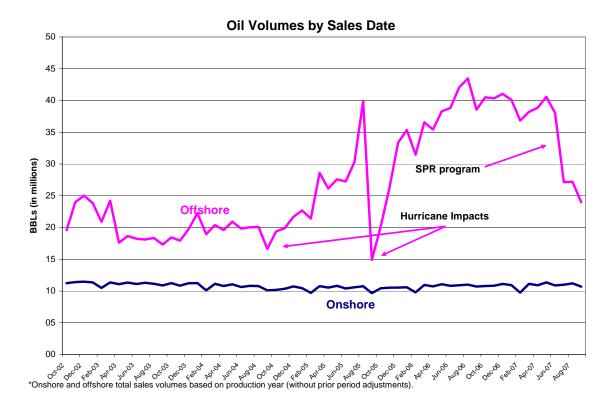
For Fiscal Year (FY) 2007, October 2006 through September 2007, the domestic oil and gas markets continued to experience high volatility in both commodity values and production levels. This volatility is reflected in volume and value data for production on Federal and Indian lands reported to MMS by production year. Geopolitical risk, supply disruptions, high demand, financial market technical factors, and localized weather events continue to drive much of the volatility.

The crude oil markets saw an increase in unit values throughout FY 2007. New York Mercantile Exchange (NYMEX) West Texas Intermediate (WTI) values closed at the lowest value of FY 2007 on January 18, 2007 at \$50.48. During FY 2007, the price climbed to a high of \$83.32 on September 20, 2007, a 65 percent increase over the low price in January. Significant variations in price (basis) between the Gulf of Mexico and onshore Federal oil production were noted due to variations in supply and demand and quality. Federal royalty oil volumes decreased significantly during the last three months of FY 2007 due to the program to add volumes to the Strategic Petroleum Reserve (SPR) which began in July 2007.

Natural gas values saw less volatility in FY 2007 than in FY 2006 due to the lack of hurricane activity and other extreme weather patterns that cause price spikes in natural gas. Significant variations in price (basis) between the Gulf of Mexico and onshore Federal gas production, and between producing and consuming areas, were noted due to differences in transportation costs and local economics.

Coal production increased during FY 2007 in the Western region of the country, while it decreased in the Appalachian region. Coal prices increased slightly through the year due to increased electricity demand for heating and cooling.

#### Oil Volume Observations:

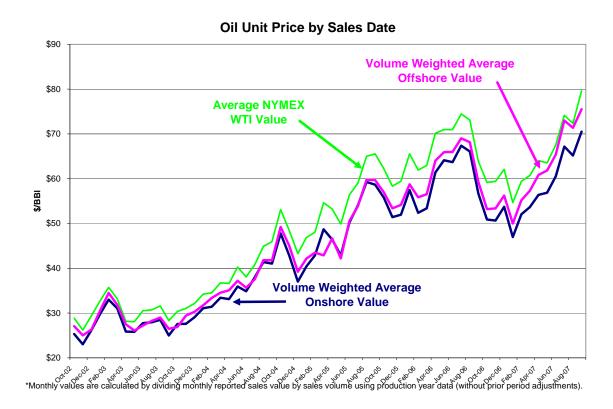


Offshore oil production has been trending upward starting in late 2004. Many of the larger deep-water fields are ramping-up production leading to an overall Gulf of Mexico production increase despite declining production rates from many older, smaller fields. Some of these projects include new fields in the Southern Green Canyon and other deepwater areas.

Of note are the significant impacts of Gulf of Mexico hurricanes in recent years, these include Hurricane Ivan in late 2004, as well as Hurricanes Katrina and Rita in late 2005. Also, in the summer of 2007, the MMS began supplying royalty oil to the Department of Energy for use in their program to fill the Strategic Petroleum Reserve (SPR). These SPR volumes of approximately 10 million barrels per month are not included in the above sales volumes. The sales volumes reported on leases included in the SPR program are not included in the volume or value data in this report as MMS receives no royalty payments on this production.

Onshore crude oil production is declining slowly as many older fields are experiencing falling production rates. In some fields, production decline rates of as much as 10 percent per year are common. Enhanced recovery projects are offsetting the production decline.

### Oil Value Observations:

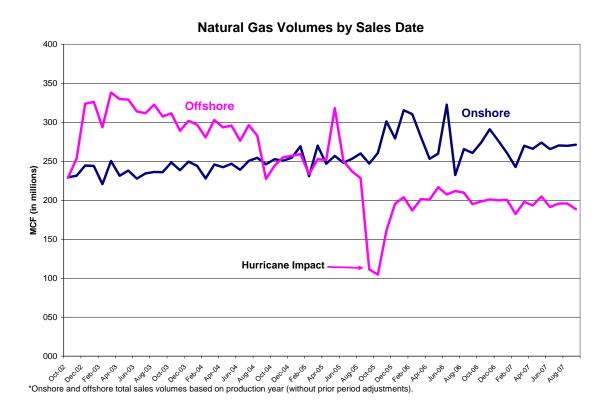


When the MMS reported oil sales value per unit is compared to the NYMEX WTI value, a slight divergence is seen. This is due to the fact that much of the Federal production is heavy sour; these oil types receive a significant discount from WTI in the marketplace due to low API gravity and high sulfur content. The discount relates to the limited product yield and/or additional sulfur removal refinery considerations for these barrels versus the light sweet production.

Some discounts are especially deep in particular onshore production fields as this production can be very heavy - suitable for limited use in applications such as asphalt or roofing-material production. These onshore fields also are affected by the increased supply and import of Canadian crude, as these barrels displace domestic production.

Both onshore and offshore MMS reported values may also include deductions for transportation and pipeline quality considerations resulting in a reduction in unit value. Royalty regulations allow these deductions and they typically range from \$1 to \$2 per barrel offshore and under \$1 onshore.

### **Natural Gas Volume Observations:**

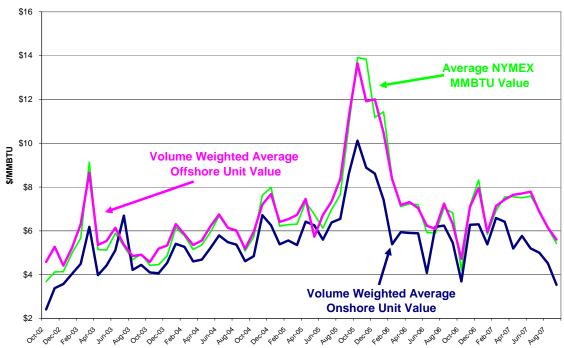


Overall offshore gas production is declining, especially on the shelf portion of the Gulf of Mexico. After the 2005 hurricanes, some production never returned to pre-hurricane production levels. However, some of the new deepwater oil projects also have significant associated gas production. These new fields may help offset declines in the future.

Federal onshore production is steadily increasing and this trend is expected to continue. This is due in large part to gas development in the Rockies. Also, since the end of the 2005, there is a significant increase in the volatility of production volumes. Pipeline capacity constraints have affected the volatility. Also, seasonal natural gas demands and restrictions on production activities during certain times of the year can have an effect.

#### **Natural Gas Value Observations:**

## **Natural Gas Unit Value by Sales Date**



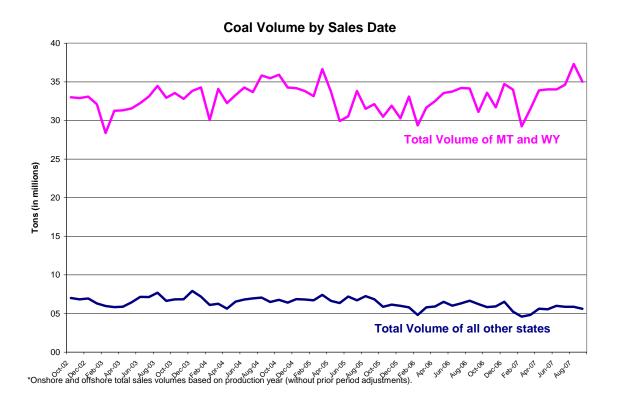
\*Monthly values are calculated by dividing monthly reported sales value by sales volume using production year data (without prior period adjustments).

Natural gas values generally increased over the past few years peaking in early winter 2005 after the hurricanes. Demand for natural gas in industrial and residential applications remains strong and is expected to increase over time.

Offshore Gulf of Mexico values closely follow the average NYMEX Henry Hub value with some slight variance due to differences in local price indices and allowances for transportation and processing costs.

Onshore values typically trend lower than the NYMEX value because of limited onshore pipeline infrastructure and the remote locations of many onshore fields. Local onshore pricing indices show this differential when compared against the NYMEX Henry Hub value. Several significant pipeline projects underway are designed to move more gas from these discounted markets to more populated demand centers with stronger index values. During FY 2007, natural gas prices in Wyoming and neighboring states fell significantly due to extreme pipeline constraints, as production in this area continued to increase. During FY 2008, the Rockies Express Pipeline will move natural gas production from Wyoming and Colorado to points in the Mid-Continent (and to the East Coast in 2009). This pipeline project is expected to lend significant support to prices in the West. Various parties have proposed other pipeline projects to move more natural gas out of this area.

#### **Coal Volume Observations:**

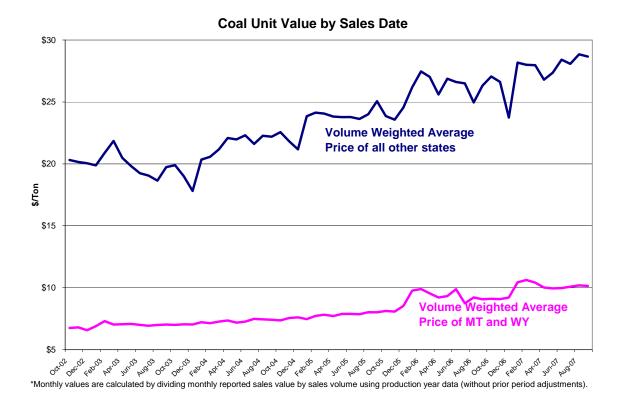


Coal production in the West (Montana and Wyoming) is rising, while overall production of all others states is slowly declining. Several factors have contributed to a shift in production from Appalachia to Montana and Wyoming. Power plants are under increasing pressure to reduce emissions and therefore favor the low-sulfur coal from the West over the higher-sulfur coal from Appalachia which requires additional scrubbing equipment. Also, a federal judge suspended the issuance of new mountaintop mining permits in Appalachia in March 2007 due to inadequate environmental reviews. Finally, new safety standards signed into law in 2006 increased the cost of underground mining. Most mines in Appalachia are underground operations while most western coal mines are surface mines.<sup>1</sup>

Another factor in production growth in FY 2007 was the drought that affected most of the US. This caused a large drop in hydroelectric generation, increasing the demand for alternative methods of generation, mainly coal.

<sup>&</sup>lt;sup>1</sup> Energy Information Administration Quarterly Coal Report, July-September 2007, released 12/28/2007.

### **Coal Value Observations:**



Coal values continue to trend higher over time. Strong demand from the local utility sector for power generation continues to boost values as this demand accounts for over 90 percent of total consumption in the US. Coal is a commodity with relatively low price volatility making it a valuable commodity in utility expansion projects and electricity production. Coal in areas farther from population centers and more prone to high-value transportation costs (such as Montana and Wyoming) typically receives lower values. As shown above, the average value for Montana and Wyoming is significantly below that of other producing states mainly due to heavy reliance on transportation. Producers are allowed transportation deductions from sales values in calculating royalty payments.