Natural Gas Annual 2010
Summary Highlights

In 2010, relatively abundant supply and low prices characterized natural gas markets. Demand for natural gas in the commercial and residential sectors ticked upward modestly compared with 2009, as did their prices. Industrial and electric demand both increased substantially with a rise of 6 percent and 7 percent respectively, reflecting economic recovery and consumers opting for natural gas over other sources of energy. Natural gas prices in those two sectors increased modestly as well, rising by 1 percent in industrial and 7 percent in electric, though they remain low by historic standards. Production volumes were a factor in keeping prices down, as production continued to climb year-on-year, offsetting increases in consumption. The natural gas spot price at Henry Hub averaged $4.37 per million British thermal units (MMBtu) in 2010, compared with $3.94 per MMBtu in 2009. Natural gas prices at the Henry Hub additionally exhibited reduced volatility; in 2010, the standard deviation of natural gas prices was $0.70 per MMBtu, down from $0.84 per MMBtu in 2009. This is likely a result of mild temperatures, the absence of extreme weather events, and high levels of production.

Despite the relatively low wellhead price of natural gas, 2010 saw increased levels of production and higher rig counts, both keeping downward pressure on prices. Shale production grew year-on-year, as did the number of horizontal rigs. Horizontal drilling, combined with hydraulic fracturing, allows producers to access natural gas trapped in shale formations that may not have been economically viable in the past. Shale production extracts not only natural gas, but also oil and other hydrocarbons, and though natural gas prices are low, the relatively high price of oil and natural gas liquids has contributed to a rise in drilling activity.

Supply

In 2010, marketed production of natural gas reached 22.6 trillion cubic feet (Tcf), its highest recorded annual total since 1973, surpassing last year's production figure of 21.6 Tcf. Production of natural gas from shale and tight sandstone formations continued to increase. These increases in production were the result of more efficient, cost-effective drilling techniques, notably in the production of natural gas from shale formations. Additionally, shale gas has been the primary source of recent growth in technically recoverable natural gas resources in the United States. Natural gas production remained robust throughout the year in the face of a relatively calm hurricane season. The Department of the Interior's Bureau of Ocean Energy Management, Regulation, and Enforcement (BOEMRE) reports that in late June, Hurricane Alex shut in approximately 1.6 billion cubic feet (Bcf) of natural gas, representing about 1 percent of monthly production in the Gulf of Mexico. In late July, Tropical Storm Bonnie crossed over Florida and landed in the Gulf, shutting in a total of 6.3 Bcf of natural gas production, or 3 percent of normal monthly production.

The average natural gas rotary rig count, as reported by Baker Hughes Incorporated, rose significantly in 2010. In January, the monthly average count was 822; it peaked in August at 983 and ended the year at 942. The annual average rig count was 18 percent higher than in 2009, rising from 799 to 942. Similarly, the average Henry Hub price of natural gas rose by 11 percent,

up from $3.94 per MMBtu to $4.37 per MMBtu in 2010. Technological advances in drilling and well-completion techniques have continued to push the break-even point of production down, making production economical despite low prices. As producers continue to develop shale gas, they frequently have access to both natural gas and oil resources, and have actually focused much more heavily on developing oil. Even though the overall natural gas rig count has risen, the percentage of natural gas rigs fell every single month in 2010. The annual average percentage of natural gas rigs was 62 in 2010, down from 74 in 2009.

During the 2009-2010 heating season (November 2009 - March 2010), working gas storage inventories set records on a national level, as well as in each of the three storage regions. The heating season began with 3,810 Bcf in storage. Withdrawals totaled 2,148 Bcf, leaving inventories at 1,662 Bcf by the end of March. At the official end of the 2010 injection season, which ran from April 1 to October 31, inventories reached 3,847 Bcf. Storage levels at the end of October 2010 surpassed the previous record-high of 3,810 Bcf, set in October 2009. Injections continued throughout October, with working gas inventories reaching 3,850 Bcf by the end of the month. November 2010 was the first month of net storage withdrawals, in contrast to November 2009 which saw a net injection each week of the month.

In 2010, net imports to the United States reached a 16-year low of 2,604 Bcf, a decrease of about 75 Bcf, or 3 percent, from the previous year. The volume of net imports in 2010 equaled about 11 percent of U.S. natural gas consumption, which was the lowest ratio since 1994. With imports only falling by 10 Bcf year-on-year, it was growth in exports that drove the decline in net imports. Exports grew from 1,072 Bcf in 2009 to 1,137 Bcf, a jump of 65 Bcf, or 6 percent. Pipeline exports and liquefied natural gas (LNG) exports grew by nearly equal quantities, 33 Bcf and 32 Bcf, respectively. In percentage terms, however, pipeline exports increased by 3 percent, whereas LNG exports nearly doubled, increasing by 97 percent from 2009. Essentially all growth in pipeline exports went to Canada; Canadian exports rose by 38 Bcf, offsetting a small decline in pipeline exports to Mexico. Growth in LNG exports was more diverse, and was driven entirely by increased purchases of re-exports, or exports that originate outside the United States and pass through a U.S. terminal before reaching their final destination. Purchases of LNG re-exports by South Korea rose from 3 Bcf to 12 Bcf. Additionally, the U.S. re-exported LNG to four new countries in 2010: The United Kingdom, Spain, Brazil, and India purchased 10 Bcf, 4 Bcf, 3 Bcf, and 3 Bcf, respectively. In contrast to LNG re-exports, direct LNG exports decreased by 2 percent to 30.1 Bcf, all of which went to Japan. As for imports, pipeline imports from Mexico and Canada actually increased by about 10 Bcf, though LNG imports fell by about 21 Bcf. As a result, combined pipeline and LNG imports were around 10 Bcf lower than in 2010.

Demand

With natural gas prices still relatively low and economic fundamentals starting to strengthen, demand in every sector grew, with growth in industrial and electric power increasing most substantially over 2009. Total U.S. consumption grew to 65.1 Bcf per day in 2010, up from 62.8 Bcf per day in 2009, an increase of 4 percent. Daily consumption of natural gas is now at a record level. In the industrial sector, consumption grew by 6 percent, rising from 16.9 to 17.9

Bcf per day. This runs counter to the general trend of declining year-on-year industrial consumption since 2000, and may reflect a revival of manufacturing activity. This is consistent with the Federal Reserve Board's manufacturing index, which rose by 6 percent, from 82.4 to 87.3 between 2009 and 2010.

Residential consumption stayed flat at 13.1 Bcf per day for both 2009 and 2010. The average heating season temperature was slightly milder than in 2009; thus, a small increase in household consumption of natural gas may have been offset by warmer winter weather. Similarly, commercial consumption actually fell by 1 percent, though daily consumption for 2009 and 2010 rounds to approximately the same volume: 8.5 Bcf per day.

Consumption of natural gas for electric power increased from its 2009 level of 18.8 Bcf per day to 20.2 Bcf per day in 2010, an increase of 7 percent. This increase was driven by fuel-switching due to the persistently low price of natural gas relative to coal, with natural gas now fueling 24 percent of electricity generation. As of 2010, daily consumption of natural gas for electricity is at its highest rate ever. Electric sector consumption has grown nearly every year since 2000. This sector accounted for the largest portion of overall daily U.S. consumption of natural gas in 2010.