Natural Gas Market Indicators

April 28, 2016

Reported Prices – seemingly from the moment that the previous *Natural Gas Market Indicators* was published on April 14, 2016, natural gas commodity prices began to slide with prompt-month futures falling to $1.92 per MMBtu on April 15, 2016. Mostly, the market seemed to be trying to rationalize how domestic production will be absorbed by power generators given the limited headroom for injections into underground storage, creating an expectation for downward pressure on prices through the summer. At least for now, the first hint of $3 natural gas prices doesn't show up until the 2017-18 winter strip. However, as April has progressed natural gas at Henry Hub has edged over $2.05 per MMBtu and crude rose above $45 West Texas Intermediate.

Weather – temperatures will be a key driver of gas demand this summer, which is typical. However, the dynamics between changes in temperature and electricity dispatch are evolving in some interesting ways. Bentek reports that mild weather and strong winds have "kept a lid on switching potential" to natural gas generation in the midcontinent and Texas this year. Year-to-date wind output is up 57 percent in ERCOT and 96 percent in the SPP from 2015. When temperatures rise, air conditioning loads drive electric demand and thus gas volumes to power generation. But now higher temperatures also mean diminished wind and thus less wind generation. The effect of summer temperatures on natural gas demand are now two-fold: if temperatures rise, gas generation must potentially ramp to meet additional demand and falling wind. The reverse is also true: lower temperatures mean less electric demand and more wind, creating a double downside for gas demand. As wind capacity continues to expand, this could mean greater swings in natural gas volumes to power generation. The market has proved resilient to meeting swings in demand, so this may not necessarily translate to increased price volatility. This dynamic is worth keeping an eye on. Finally, a note that AGA will resume publication of its weekly cooling degree day report in May.

Working Gas in Underground Storage – net injections into underground storage were slow with only 4 Bcf added to inventories during the first two weeks of the month. Then an injection of 73 Bcf for the week ending April 22 brought stocks to 2,557 Bcf, now 48 percent ahead of the five-year average.

Natural Gas Production – lower-48 dry gas production this month remains 1.2 Bcf per day *lower* than April 2015 volumes—a response to relatively low wellhead prices and abundant storage inventories to begin the injection season. Compared to 2015, Northeast production is up year to date while other producing regions are down, leading to a production profile that may finally be giving way to the current pricing environment. April declines notwithstanding, year-to-date production is 0.4 Bcf per day higher than 2015, leaving the market more work to balance supply and demand.

Shale Gas – a new AGA analysis titled "New Science, New Facts: Understanding Updates to the EPA Inventory of Greenhouse Gases" examines the recent revisions to EPA's estimates of methane emissions from the natural gas industry. Among its key findings, annual methane emissions from all natural gas systems declined 15 percent from 1990 to 2014, suggesting a natural gas emissions rate of 1.4 percent of US production. Methane released from gas utility distribution systems declined 74 percent from 1990 to 2014. Transmission and storage infrastructure shows a 45 percent decline from 1990 to 2014. On production, EPA expanded its universe of gathering stations, which were not included in prior inventories, bringing emissions estimates up for the field production stage. Even with the changes, field production emissions have been flat since 2005 even as gas volumes produced increased 34 percent. The full report can be found on at [aga.org](aga.org).

Rig Counts – it happened. The number of drilling rigs operating in the Barnett is now zero, according to RigData and reported by the Fort Worth-based Star-Telegram. The sharp decline of rigs operating not only in Texas but across the country is a rational response to the persistently low commodity price environment for natural gas and petroleum liquids. Baker Hughes, in its report published April 22 for that week, shows only 431 rigs in operation in the US (that includes 5 in the Barnett for the reported time period); two years ago there were more than 1,800 rigs in operation. The question now posed: how high will commodity prices have to rise to induce a response of additional drilling, and will the resources and capital be available for operators to make a timely response?

Pipeline Imports and Exports – April imports from Canada are up 0.3 Bcf per day compared to 2015. Exports to Mexico continue their strong pace, up 1 Bcf per day or 40 percent this April from last year.

LNG Markets – unusual late season cold in Europe has correlated with a spike in natural gas prices at the UK national balancing point. As the snow fell in London and Paris, UK gas prices (prompt-month) jumped to $4.70 per MMBtu, up from $3.91 one week prior. Meanwhile, back across the pond, the Federal Energy Regulatory Commission (FERC) has authorized Cheniere Energy to begin the process of introducing feed gas into the second train at Sabine Pass, thus starting the commissioning process to bring the unit online. In terms of commissioning cargoes from Sabine train 1, export tanker destinations now include South America, Asia, Europe, and the Middle East. In the past few days, Bentek notes that feedgas into Sabine has shown a short-term drop from 0.6 Bcfd on April 23 to near zero by April 27. Meanwhile, sendout gas from LNG import terminals have averaged 0.3 Bcf per day during the past week.

Natural Gas Market Summary – slowing production could be met with higher demand if temperatures rise this summer, which would bring some support to a persistently soft pricing environment. A bullish scenario is far from guaranteed though. Inventories from drilled but uncompleted (or completed but unconnected) wells are being brought to market, offsetting production declines from the low rig count. Eventually though even this inventory will dissipate. Many indicators appear to suggest a supply-demand balance tightening this year or next. It's the *how* and importantly the *when* that are up for debate.