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Sent: Thursday, September 15, 2016 3:08 PM

To: secretary

Cc: McGonagle, Vincent A.; Sherrod, Stephen; Lasala, Tom; Klein Gray, Anne; Hawrysz, Joe

Subject: CME Group Submission of Deliverable Supply Analyses for Two NYMEX Products

Dear Mr. Kirkpatrick:

CME Group Inc. is submitting today for the Commission's consideration detailed Deliverable Supply estimates for two (2) NYMEX contracts, ULSD and Natural Gas. The deliverable supply data numbers for these two markets as well as those for 15 other markets were recently referenced in a letter submitted to the Commission on September 12, 2016. The detailed analyses provided here represent an update of data for these markets previously submitted to the Commission on April 15, 2016.

Please contact me if you have any questions or are unable to open the attachments.

Best,

Chris Bowen

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NEW YORK MERCANTILE EXCHANGE, INC.
ANALYSIS OF DELIVERABLE SUPPLY
HENRY HUB NATURAL GAS FUTURES
SEPTEMBER 2016

In estimating deliverable supply for the Henry Hub Natural Gas Futures, the New York Mercantile Exchange, Inc. (“NYMEX” or “Exchange”) relied on long-standing precedent, which provides that the key component in estimating deliverable supply is the portion of typical production and supply stocks that could reasonably be considered to be readily available for delivery. In its guidance on estimating deliverable supply, the Commodity Futures Trading Commission (“CFTC” or “Commission”) states:

In general, the term “deliverable supply” means the quantity of the commodity meeting a derivative contract’s delivery specifications that can reasonably be expected to be readily available to short traders and saleable by long traders at its market value in normal cash marketing channels at the derivative contract’s delivery points during the specified delivery period, barring abnormal movement in interstate commerce. Typically, deliverable supply reflects the quantity of the commodity that potentially could be made available for sale on a spot basis at current prices at the contract’s delivery points. For a non-financial physical-delivery commodity contract, this estimate might represent product which is in storage at the delivery point(s) specified in the futures contract or can be moved economically into or through such points consistent with the delivery procedures set forth in the contract and which is available for sale on a spot basis within the marketing channels that normally are tributary to the delivery point(s).¹

I. Methodology and Data Sources

The Exchange considered four factors in evaluating the Henry Hub natural gas deliverable supply estimates:

- (1) Geographic extent of the market;
- (2) Natural gas production that can flow to the delivery location;
- (3) Delivery capacity of the delivery mechanism; and
- (4) Storage information.

A. Geographic Extent of the Market

The geographic extent of the market defines both the sources from which supplies can be readily provided as well as the destinations into which supply can be re-delivered. The Henry Hub delivery mechanism is part of a broader geographic market that encompasses U.S. Gulf Coast (USGC) area production, sales and re-sales. This includes production from Texas, Louisiana, Mississippi and Alabama, USGC area storage and USGC area pipelines and supporting facilities.

B. Natural Gas Production

To determine production estimates, NYMEX reviewed information gathered from two sources: Bentek, a wholly-owned subsidiary of Platts and the U.S. Department of Energy (“DOE”) Energy Information Administration (“EIA”).

Bentek is an industry leader in the provision of data aggregation and collation from the Interstate Natural Gas Pipelines’ electronic bulletin boards.² Interstate natural gas pipelines are subject to Federal Energy Regulatory Commission (“FERC”) oversight and jurisdiction. As part of its regulatory oversight, FERC

¹ http://www.ecfr.gov/cgi-bin/text-idx?SID=74959c3dbae469e2efe0a42b45b8dfae&mc=true&node=ap17.1.38_11201.c&rgn=div9

² Bentek collects details on the flow of interstate pipeline natural gas from the production source, commonly known as the wellhead, to the local distribution company’s (including municipal operated distributors) delivery point, commonly known as its city-gate, beyond which point the pipeline ceases to be a federally regulated interstate pipeline.

requires interstate pipelines to operate publicly accessible electronic bulletin boards which provide information on scheduling, available capacity and natural gas flows on a near real-time basis. Among other things, Bentek collects and disseminates collated data from these electronic bulletin boards daily. Given this, the Bentek data presented can be more current than the EIA data, which are typically subject to a minimum two-month delay in publication.

EIA data are a definitive source for production information and EIA does provide marketed production data for Federal U.S. Gulf Coast offshore production as well as onshore production for individual states such as Louisiana and Texas; these data include, however, some onshore production that would not be able to readily access the delivery point.

Bentek provides greater geographic detail than the EIA data by providing both U.S. Gulf Coast offshore and onshore natural gas production that has ready access to the delivery point. As is discussed below, NYMEX believes that the Bentek data underestimates the total production with ready access to the Henry Hub but, nonetheless, represents a reasonable basis for production estimates.

C. Henry Hub Operating Capacity

The source of the Henry Hub pipeline receipt and delivery capacity is the Sabine Pipe Line Co. website. As part of FERC regulation, interstate pipelines are required to provide daily capacity information that includes receipt and delivery design, scheduled and available for all certificated interconnections.³ The inflowing natural gas daily receipts operating capacity is 3,385,000 Dth which is equivalent to 3,385,000 MMBtu. The outflowing natural gas daily deliveries operating capacity is 3,165,000 Dth which is equivalent to 3,165,000 MMBtu.

D. State of Louisiana and Producing Area Natural Gas Storage

Storage data are provided on a weekly basis by EIA and are approximately four business days old upon release. These data are provided by general region—East, West and Producing. Producing includes the U.S. Gulf Coast region which includes the delivery location for the Henry Hub Natural Gas Futures contract. The EIA also collects data at the individual state level but provides these data with a time lag of approximately six months. At these frequencies of release, there are no official storage data with greater geographic detail than either the Producing region or state level.

II. The Henry Hub Physical Delivery Mechanism

The Henry Hub consists of interconnections with 11 interstate and intrastate pipelines and related infrastructure. The Henry Hub is owned and operated by EnLink Midstream. The deliveries pipelines source their natural gas from the U.S. Gulf Coast region, both onshore and offshore, which extends from Texas to Alabama. Henry Hub has two compressor stations that enable natural gas to move from lower pressure pipeline Henry Hub receipt interconnections to higher pressure downstream Henry Hub pipelines.

Henry Hub also offers an intra-Hub tracking and transfer service, a form of in-system title transfer and documentation, to accommodate trading and delivery needs of its customers. This service, which is offered by Sabine Hub Services Company, a non-federal jurisdictional subsidiary of EnLink Midstream, enhances the natural gas trading environment for producers, marketers, and end-users with respect to meeting their physical and financial requirements. In addition, the number of interruptible transportation customers of Henry Hub has grown to approximately 160 market participants.

III. Physical Market Trading Structure and Term Contracts

A. Physical Market Trading Structure

Typically, there is a chronology of sales and purchases of natural gas in the U.S. market that starts with a sale from producer and finishes with a purchase by an end-user to consume the natural gas, typically far downstream of the U.S. Gulf Coast. First-sales are from producers to marketers or other middleman-type

³ <http://www.sabinepipeline.com/>.

firms with delivery at the production point or where natural gas first enters the pipeline system (or liquids processing facility attached to the system). The first-sale buyer transports it from the point of sale downstream. Typically, the first-sale buyer resells the natural gas to someone other than the end-user. Sales to end-users, who do not further resell the natural gas but ultimately consume it, are final-sales.

As implied, sometimes end-users also resell natural gas, frequently during the same commercial cycle in which they purchased it. Other buyers of resold natural gas also either resell it or store it and resell it later. A common commercial practice is the first-sale and multiple subsequent re-sales occurring in the same delivery cycle; this line of re-sales usually includes a final sale, but not always, since a significant portion of natural gas is stored.

Henry Hub is essentially an active reseller market where buyers either: resell the natural gas to someone else at Henry Hub; transport it downstream for delivery and re-sale to someone else; transport it downstream to consume it; or transport it downstream to store it. Most of the sales and deliveries in the Henry Hub are comprised of volumes for re-sale, storage or final-sales. In fact, the commercial physical market in Henry Hub sales is estimated to be 7-8 times the multiple of physical natural gas that flows through Henry Hub, which is a direct indication that most sales are for re-sale. *Platts Gas Daily* and *Inside F.E.R.C.* publish transaction information for delivery at Henry Hub but do not capture all transactions that occur at the Henry Hub.

B. Term Contracts

The Exchange contacted and surveyed natural gas market participants regarding common commercial practices, including the use of term contracts, in the North American natural gas market.⁴ The responses we received were consistent and can be summarized as follows:

- Most first-sales of production are sold term, as indicated above, typically for delivery on the producing property or nearest entry to the pipeline system, including liquids processing plants, and typically to middleman-firms. These middleman-firms typically resell the natural gas to other middleman-firms or to market participants performing that function or to end-users. Gulf Coast market participants estimated re-sales ranging from 50% to over 90%—skewing towards the higher end. Some market participants indicated they did not know of exceptions but did not estimate 100% of first sales to be ultimately resold.
- No restrictions typically apply to the resale of natural gas bought first-sale on a term basis from producers. In fact, restrictions would clearly not be applicable because sales are typically to marketers or others acting in a middleman-firm role with the expressed responsibility of reselling the natural gas. The participants with whom we spoke indicated that they had not encountered any restrictions. Several market participants did point out that “burner-tip” sales—i.e. to utilities—could entail a restriction on the utility from reselling the natural gas; however, they made clear that such sales, in their experience, were downstream of first-sales and first re-sales as well, especially in the U.S. Gulf Coast.
- Henry Hub is largely downstream of first-sales; some first-sales take place there but, typically, not as part of a term sale. Consequently, natural gas production that is readily accessible to Henry Hub in terms of transportation is also readily accessible commercially. Natural gas that has readily accessible transportation to Henry Hub is not otherwise committed and unavailable to be delivered at Henry Hub.
- Term sales do not result in reductions to the deliverable supply for Henry Hub. All market participants agreed that natural gas purchased on a term sale is available for re-sale and delivery, including to the Henry Hub and that all market participants downstream of first-sales participate in the market for resale (as some first-sellers do).
- Our sources expressly advised us that any production sold long-term was available for re-sale, which is especially the case in the U.S. Gulf Coast market and the Henry Hub.

⁴ The Exchange contacted 15 firms, surveying 10, as well as a market participant group that included several dozen members. The individually contacted firms included major producers and marketers. The Energy Market Participant Group was organized through Hunton & Williams LLP to discuss and comment on regulatory issues.

IV. Deliverable Supply Estimates and Supporting Data

The factors considered in evaluating deliverable supply are natural gas production, deliverable capacity at the Henry Hub, and natural gas storage.

A. Natural Gas Production

The Exchange reviewed monthly data reported by EIA for Federal Offshore – Gulf of Mexico Natural Gas Marketed Production (Table 1 below) from January 2013 through December 2015. The monthly average offshore natural gas production for the 2013 – 2015 three-year period was approximately 10,910 contract equivalents, 10,461 contract equivalents, and 11,091 contract equivalents, respectively (contract size: 10,000 MMBTU). Federal Offshore production is a subset of production that is readily accessible to be delivered at the Henry Hub.

The Exchange also reviewed monthly data reported by EIA for Louisiana Natural Gas Marketed Production (Table 2 below) and Texas Natural Gas Marketed Production (Table 3 below) from January 2013 through December 2015. The monthly average onshore production for Louisiana for the 2013 – 2015 three-year period was approximately 19,668 contract equivalents, 16,502 contract equivalents, and 16,107 contract equivalents, respectively. The monthly average onshore production for Texas for the 2013 – 2015 three-year period was approximately 63,613 contract equivalents, 66,278 contract equivalents, and 65,581 contract equivalents, respectively.

However, the onshore Louisiana and Texas production data includes production from certain regions of the states that would not be readily accessible to the Henry Hub. Consequently, even though EIA is the pre-eminent official source for production data, the Exchange relied on production estimates reported by Bentek which captures data for specific offshore and onshore areas that are accessible to the Henry Hub.

Table 5 provides Bentek's estimates of daily natural gas production accessible to the Henry Hub for Onshore and Offshore Louisiana, Texas, Mississippi and Alabama in million cubic feet for the period beginning January 2013 through December 30, 2015. According to Bentek, average monthly onshore production accessible to the Henry Hub for the 2013 – 2015 period was approximately 6,651 contract equivalents, 7,683 contract equivalents, and 7,647 contract equivalents (through December 30), respectively. Average offshore production accessible to the Henry Hub for the 2013 – 2015 period was approximately 12,579 contract equivalents, 11,706 contract equivalents, and 11,883 contract equivalents (through December 30), respectively. Additionally, as illustrated in Table 6 below, for the 2013 – 2015 period, annual average offshore natural gas production accessible to the Henry Hub as estimated by Bentek yielded totals that were comparable to EIA's annual average of Federal offshore production. It should be noted that Bentek's offshore production data includes state offshore production that is directed to the Interstate pipeline system.

Total annual average of onshore and offshore production as estimated by Bentek for the period beginning January 2013 through December 30, 2015 is approximately 19,230 contract equivalents, 19,389 contract equivalents, and 19,530 contract equivalents, respectively.

The Exchange monitors production regularly and, in light of the continued production in the Gulf Coast region and other areas, anticipates the continuing central role provided by the Henry Hub as a delivery mechanism for natural gas. The production quantities included in these estimates represent production that is tendered in the secondary (or spot) market and which could easily access the Henry Hub delivery mechanism to dependably fulfill a secondary (or spot) market delivery at the Henry Hub. The actual delivery path for production depends on the actual commercial activity each month in the secondary market, including delivery obligations for NYMEX natural gas contracts. There are multiple delivery points (including the Henry Hub) where such secondary market deliveries can take place for this production and the actual delivery locations for specific production each month fluctuates with its corresponding secondary market transactions.

B. Henry Hub Deliverable Capacity

According to the Form 10-K report⁵ which EnLink Midstream filed with the U.S. Securities and Exchange Commission (SEC) in 2014, Henry Hub transfer services capacity is 2.1 Bcf per day or 2,100,000 MMBtu per day. This converts into 210 contract equivalents per day or 6,300 contract equivalents per month.

According to the Henry Hub pipeline receipt and delivery operating capacity as published on the Sabine Pipe Line Co. website, the inflowing natural gas daily receipts operating capacity is 3,385,000 Dth which is equivalent to 3,385,000 MMBtu. The outflowing natural gas daily deliveries operating capacity is 3,165,000 Dth which is equivalent to 3,165,000 MMBtu per day.

Additionally, the Exchange has taken into consideration backhaul in estimating the deliverable supply. Displacement or backhaul refers to gas flows that are scheduled in the opposite direction of existing scheduled flow in a pipeline, at a storage facility or at a Hub that accommodates delivery such as the Henry Hub. Displacement is a standard component of transportation services provided under FERC Gas Tariff⁶ of Sabine Pipe Line in accordance with FERC regulations. This mechanism is integral to the network and considered as a common practice in pipeline operations.

Displacement can occur at any interconnect or point(s) on a natural gas pipeline system when volumes nominated and scheduled to flow in one direction are displaced by volumes nominated and scheduled to flow in the opposite direction. It is important to note that all confirmed nominations are viewed as flowing gas but only the net result of scheduled nominations flowing opposite directions at the same point will actually physically flow. The remaining volumes not displaced will determine the direction of actual physical flow through the inlet and outlet meters at the Henry Hub. Additionally, backhaul is coordinated directly by interconnecting pipeline operators as a natural consequence of scheduled nominations between the two, without any special distinction or notification to shippers. Also, the Exchange has confirmed with the pipeline operator that incorporating displacement is both reasonable and appropriate.

In evaluating delivery capacity, the Exchange calculated the actual average monthly backhaul deliveries and receipts for all interconnects based on Design and Available capacities data posted on Sabine Pipe Line Co. website⁷ from October 31, 2012 to February 28, 2015 and also based on the same data provided by EnLink Midstream from March 1, 2015 to August 18, 2016. Given that the inflowing natural gas receipts capacity is greater than the outflowing natural gas deliveries capacity, the Exchange determined at this time to use the outflowing natural gas deliveries capacity, which is the lower of the two numbers, in its evaluation of deliverable supply.

Based on the methodology described above, the Exchange calculated the average actual monthly backhaul capacity of 532,082 MMBtu per day. This number is based on the difference between the forward haul deliveries operating capacity of 3,165,000 MMBtu per day and the actual available deliveries capacity of 3,697,082 MMBtu per day. The calculated backhaul delivery capacity of 532,082 MMBtu per day converts into 53 contract equivalents per day or 1,590 contract equivalents per month. Based on feedback from personnel at EnLink, we believe the methodology used to calculate backhaul delivery capacity is a very conservative estimate of actual backhaul capacity at Henry Hub.

C. Natural Gas Storage in State of Louisiana and Producing Area

The Exchange reviewed monthly data reported by EIA for Louisiana Natural Gas Underground Storage Volume (Table 4 below) from January 2013 through December 2015. The monthly average for storage for Louisiana and producing regions (Alabama, Arkansas, Kansas, Louisiana, Mississippi, New Mexico, Oklahoma, and Texas) for the 2013 – 2015 three-year period was approximately 55,813 contract equivalents, 47,616 contract equivalents, and 55,393 contract equivalents, respectively.

⁶ <http://www.gasnom.com/ip/sabine/fileviewer.cfm?FromLoc=Tariff&file=tariff.pdf>

⁶ <http://www.gasnom.com/ip/sabine/fileviewer.cfm?FromLoc=Tariff&file=tariff.pdf>

⁷ <http://www.sabinepipeline.com/>

D. Deliverable Supply Estimates

Given that production and storage levels exceed deliverable capacity, as noted above, deliverable capacity continues to be the constraining factor in estimating deliverable supply.

Based on the above analysis and as shown in Table 7, the Exchange determined at this time to base its estimates of deliverable supply solely on transfer services capacity and average monthly backhaul delivery capacity at the Henry Hub (2,100,000 MMBTU + 532,082 MMBTU) which is equivalent to **7,896** contracts per month. The current spot month position limit of 1,000 contracts represents approximately **13%** of the estimated monthly deliverable supply.

**Table 1
Federal Offshore--Gulf of Mexico Natural Gas Marketed Production
(Million Cubic Feet)⁸**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	122,965	108,629	116,449	114,285	113,213	102,690	108,099	102,742	107,506	100,771	106,685	105,214
2014	100,452	93,774	103,420	104,596	109,516	105,900	108,321	109,226	105,039	109,222	100,101	105,795
2015	108,877	96,940	97,809	111,017	114,502	109,801	120,019	122,924	120,208	114,334	104,494	110,023

**Table 2
Louisiana Natural Gas Marketed Production
(Million Cubic Feet)⁹**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	228,977	204,548	218,897	206,367	210,568	199,400	200,804	191,853	176,492	175,214	170,376	176,706
2014	173,029	156,685	172,996	167,701	174,748	167,660	166,320	164,210	159,604	166,081	153,174	158,079
2015	163,798	148,728	167,471	161,164	162,149	153,466	158,691	165,771	163,482	166,172	160,600	161,383

**Table 3
Texas Natural Gas Marketed Production
(Million Cubic Feet)¹⁰**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	617,230	564,330	628,321	614,536	646,009	631,642	652,114	655,657	642,237	663,355	657,546	660,641
2014	628,628	568,415	643,131	640,032	672,480	659,045	677,194	684,948	666,487	691,123	697,106	724,754
2015	657,404	604,638	670,753	652,429	668,317	656,716	675,828	677,396	656,702	664,386	640,540	644,569

**Table 4
Louisiana Natural Gas Underground Storage Volume
(Million Cubic Feet)¹¹**

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2013	561,546	511,573	467,174	481,002	505,921	537,031	569,075	588,459	615,642	642,357	627,163	590,576
2014	473,183	408,941	361,674	377,855	407,709	437,801	473,821	499,937	537,662	586,921	579,766	568,661
2015	511,096	438,064	439,515	484,426	520,941	537,873	555,603	576,235	610,054	650,392	665,923	656,992

⁸ <http://tonto.eia.gov/dnav/ng/hist/n9050fx2m.htm>

⁹ <http://www.eia.gov/dnav/ng/hist/n9050la2m.htm>

¹⁰ <http://www.eia.gov/dnav/ng/hist/n9050tx2m.htm>

¹¹ <http://www.eia.gov/dnav/ng/hist/n5030la2m.htm>

Table 5
US Gulf Natural Gas Production Accessible to Henry Hub
(Million Cubic Feet per Day)¹²

Available LA/TX/MS/AL Natural Gas Supply	2015	2014	2013
Bentek LA Offshore YTD	2,593	2,668	2,947
Bentek LA Onshore YTD	434	476	666
Bentek TX Offshore YTD	282	242	261
Bentek TX Onshore YTD	2,063	2,043	1,503
Bentek MS Offshore YTD	562	444	358
Bentek AL Offshore YTD	524	548	627
Bentek AL-MS-FL Onshore YTD	52	42	48
Total Bentek LA, TX, MS/AL	6,510	6,463	6,410
Daily Contract Equivalent (CE)	651	646	641
30-Day Month CE	19,530	19,389	19,230
25% of 30-Day Month CE	4,883	4,847	4,808

Available Natural Gas Supply	2015	2014	2013
Total Bentek Offshore LA, TX, MS/AL	3,961	3,902	4,193
Daily Contract Equivalent (CE)	396.10	390.20	419
30-Day Month CE	11,883	11,706	12,579

Available Natural Gas Supply	2015	2014	2013
Total Bentek Onshore LA, TX, MS/AL	2,549	2,561	2,217
Daily Contract Equivalent (CE)	255	256	222
30-Day Month CE	7,647	7,683	6,651

Table 6
Monthly Average Offshore Production Accessible to Henry Hub Estimated by Bentek
vs. EIA Monthly Average of Federal Offshore Production
(In Contract Equivalents)

Year	Bentek	EIA
2013	12,579	10,910
2014	11,706	10,461
2015	11,883 (through December 30)	11,091

¹² Source: Bentek

Table 7
Deliverable Supply Estimates

Transfer Services Capacity	2,100,000
Average Monthly Backhaul	532,082
Daily Contract Equivalent	263
Monthly Contract Equivalent	7,896
25% Threshold	1,974