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## **VIA OVERNIGHT DELIVERY**

May 14, 2015

Jeff Derouen Executive Director Kentucky Public Service Commission 211 Sower Boulevard Frankfort, Kentucky 40602-0615 RECEIVED

MAY 15 2015

PUBLIC SERVICE COMMISSION

Re:

In the Matter of Application of Duke Energy Kentucky, Inc. to Implement a Hedging Program to Mitigate Price Volatility in the Procurement of Natural Gas, Case No. 2012-00180

Dear Mr. Derouen:

Enclosed please find an original and eleven copies of *Duke Energy Kentucky, Inc.'s Annual Report on Hedging Activity for April 1, 2014 - March 31, 2015 and Report on Hedging Activity for Future Gas Deliveries and Petition for Confidential Treatment.* Also enclosed is one copy of the Confidential Material to be filed under seal as requested in the Petition for Confidential Treatment. Please note the Confidential Material has been highlighted for your reference.

Please date-stamp the extra copy of the letter, Petition, and Report and return to me in the enclosed envelope.

Sincerely.

Rocco D'Ascenzo

cc: Jennifer Hans (w/enclosures)

## COMMONWEALTH OF KENTUCKY BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION

RECEIVED

MAY 15 2015

PUBLIC SERVICE COMMISSION

In the Matter of:

APPLICATION OF DUKE	)	
ENERGY KENTUCKY, INC. TO	)	
IMPLEMENT A HEDGING	)	Case No. 2012-00180
PROGRAM TO MITIGATE PRICE	)	
VOLATILITY IN THE PROCUREMENT	)	
OF NATURAL GAS	í	

PETITION OF DUKE ENERGY KENTUCKY, INC.
FOR CONFIDENTIAL TREATMENT OF INFORMATION CONTAINED IN
THE ANNUAL REPORT ON HEDGING ACTIVITY FOR APRIL 1, 2014
THROUGH MARCH 31, 2015,
AND REPORT ON ONGOING GAS HEDGING ACTIVITY FOR FUTURE GAS
DELIVERIES

Duke Energy Kentucky, Inc. (Duke Energy Kentucky), pursuant to 807 KAR 5:001, Section 13, respectfully requests the Commission to classify and protect as confidential certain information that is contained in its Annual Report on Hedging Activity for April 1, 2014 through March 31, 2015 and Report on Ongoing Gas Hedging Activity for Future Gas Deliveries in this proceeding, which is being filed contemporaneously with this petition. In support thereof, Duke Energy Kentucky states:

1. Duke Energy Kentucky has filed today documents containing sensitive and confidential information relating to the volumes of gas that Duke Energy Kentucky purchased through the use of hedging instruments for its hedging plan. Disclosure of this information would damage Duke Energy Kentucky by alerting suppliers as to how much gas Duke Energy Kentucky purchases at any particular point in time, which could allow

suppliers to raise the cost of their hedging instruments to Duke Energy Kentucky, thus making it more costly to Duke Energy Kentucky to acquire future gas supply.

- 2. Certain attachments contain copyrighted documents published by PIRA Energy Group not available for reproduction to the general public. This information is subject to copyright protection and has been obtained through paid company subscriptions.
- 3. The Kentucky Open Records Act exempts from disclosure certain commercial information. KRS 61.878(1)(c). To qualify for this exemption and, therefore, maintain the confidentiality of the information, a party must establish that disclosure of the commercial information would permit an unfair advantage to competitors of that party. Public disclosure of the information identified herein would, in fact, prompt such a result for the reasons set forth below.
- 4. The hedging volume information described above contains sensitive commercial information, the disclosure of which would injure Duke Energy Kentucky for the reasons stated above. Duke Energy Kentucky's purchases of hedging instruments are confidential. Public release of this information would allow other suppliers to have access to this information and could enable such suppliers to charge higher prices to Duke Energy Kentucky for hedging instruments. The Commission previously granted confidential treatment to similar information on July 16, 2014.
- 5. The information for which Duke Energy Kentucky is seeking confidential treatment is not known outside of Duke Energy Kentucky, and it is not disseminated within Duke Energy Kentucky except to those employees with a legitimate business need to know and act upon the information.

- 6. The hedging volume information is distributed within Duke Energy Kentucky, only to those who must have access for business reasons, and is generally recognized as confidential and proprietary in the energy industry.
- 7. The hedging volume information for which Duke Energy Kentucky is seeking confidential treatment is not known outside of Duke Energy Corporation.
- 8. Duke Energy Kentucky does not object to limited disclosure of the confidential information described herein, pursuant to an acceptable protective agreement, with the Attorney General or other intervenors with a legitimate interest in reviewing the same for the purpose of participating in this case.
- 9. This information was, and remains, integral to Duke Energy Kentucky's effective execution of business decisions. And such information is generally regarded as confidential or proprietary. Indeed, as the Kentucky Supreme Court has found, "information concerning the inner workings of a corporation is 'generally accepted as confidential or proprietary." *Hoy v. Kentucky Industrial Revitalization Authority*, 904 S.W.2d 766, 768 (Ky. 1995).
- 10. In accordance with the provisions of 807 KAR 5:001, Section 13(3), the Company is filing one copy of the Confidential Information separately under seal, and ten copies without the confidential information included.
- 11. Duke Energy Kentucky respectfully requests that the Confidential Information be withheld from public disclosure for a period of ten years. This will assure that the Confidential Information if disclosed after that time will no longer be commercially sensitive so as to likely impair the interests of the Company or its customers if publicly disclosed.

12. To the extent the Confidential information becomes generally available to the public, whether through filings required by other agencies or otherwise, Duke Energy Kentucky will notify the Commission and have its confidential status removed, pursuant to 807 KAR 5:001 Section 13(10)(a).

WHEREFORE, Duke Energy Kentucky respectfully requests that the Commission classify and protect as confidential the specific information described herein.

Respectfully submitted,

DUKE ENERGY KENTUCKY, INC.

Rocco O. D'Ascenzo (92796)
Associate General Counsel
Amy B. Spiller (85309)
Deputy General Counsel
Duke Energy Business Services, LLC
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## **CERTIFICATE OF SERVICE**

I certify that a copy of the foregoing Petition for Confidential Treatment was served to the parties listed below by regular United States mail, postage prepaid, this day of May 2015.

Rocco O. D'Ascenzo

Hon. Jennifer Hans Office of the Attorney General Utility Intervention and Rate Division 1024 Capital Center Drive Frankfort, Kentucky 40601

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# BEFORE THE KENTUCKY PUBLIC SERVICE COMMISSION

RECEIVED

MAY 15 2015

PUBLIC SERVICE COMMISSION

Annual Report on Hedging Activity
For April 1, 2014 – March 31, 2015
And Report on Hedging Activity
For Future Gas Deliveries

By Duke Energy Kentucky

May, 2015

The Vice President Ohio and Kentucky Gas Operations, Manager of Gas Resources, the Lead of Gas Procurement and Analysis and other personnel (Natural Gas Hedging Committee) met on a regular basis to review current market conditions for natural gas, short and long-term weather forecasts, gas industry trade publications, and price estimates to determine whether to enter into any hedging transactions. These meetings were scheduled at least monthly, but can occur more frequently depending on the season and market conditions. A brief summary of each hedging decision made at these meetings during the 12 months ended March 2015 is attached, along with the information reviewed during each period (see Attachment A).

A summary of the amounts hedged prior to March 31, 2015 for delivery at a later date is shown below, followed by details of the factors influencing Duke Energy Kentucky, Inc.'s ("Duke Energy Kentucky") decision to enter into the hedging agreements during the 12 months ended March 31, 2015.

Date	Supplier	Туре	Price Per Dth	Delivery Point	Volume Dth/day	Month(s)	Seasonal Volume
Summer 2014							
1/23/2012*		Fixed	\$	CGT-M		Nov 13 – Mar 15	
10/19/2012**		Fixed	\$	CGT-M		Apr 14 – Oct 15	
8/8/2013***		Fixed	\$	CGT-M		Apr 14 – Mar 16	
Winter 2014/15							
1/23/2012*		Fixed	\$	CGT-M		Nov 13 – Mar 15	
10/19/2012**		Fixed	\$	CGT-M		Apr 14 – Oct 15	
8/8/2013***		Fixed	\$	CGT-M		Apr 14 – Mar 16	
3/28/2014***		Fixed	\$	CGT-M		Nov 14 – Mar 15	
4/29/2014		Fixed	\$	CGT-M		Nov 14 – Mar 15	
8/8/2014		Fixed	\$	TGT		Nov 14 – Mar 15	
Summer 2015							
10/19/2012**		Fixed	\$	CGT-M		Apr 14 – Oct 15	
		Fixed Fixed	\$	CGT-M CGT-M		Apr 14 – Oct 15 Apr 14 – Mar 16	
10/19/2012**			\$ \$ \$ \$				
10/19/2012** 8/8/2013***		Fixed	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	CGT-M		Apr 14 – Mar 16	
10/19/2012** 8/8/2013*** 7/30/2014		Fixed Collar	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	CGT-M CGT-M		Apr 14 – Mar 16 Apr 15 – Mar 16	
10/19/2012** 8/8/2013*** 7/30/2014 1/30/2015		Fixed Collar Collar	\$ \$ \$ \$	CGT-M CGT-M CGT-M		Apr 14 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 16	
10/19/2012** 8/8/2013*** 7/30/2014 1/30/2015 1/30/2015 Winter 2015/16		Fixed Collar Collar	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	CGT-M CGT-M CGT-M		Apr 14 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 16	
10/19/2012** 8/8/2013*** 7/30/2014 1/30/2015 1/30/2015		Fixed Collar Collar	\$ \$ \$ \$ \$ \$ \$ \$ -	CGT-M CGT-M CGT-M		Apr 14 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 16	
10/19/2012** 8/8/2013*** 7/30/2014 1/30/2015 1/30/2015 Winter 2015/16		Fixed Collar Collar Fixed	\$ \$ \$ \$ \$ \$ \$ \$ -	CGT-M CGT-M CGT-M		Apr 14 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 17	
10/19/2012** 8/8/2013*** 7/30/2014 1/30/2015 1/30/2015  Winter 2015/16 8/8/2013***		Fixed Collar Collar Fixed Fixed	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	CGT-M CGT-M CGT-M		Apr 14 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 17	
10/19/2012** 8/8/2013*** 7/30/2014 1/30/2015 1/30/2015  Winter 2015/16 8/8/2013*** 2/21/2014*** 7/30/2014 12/22/2014		Fixed Collar Collar Fixed Fixed Fixed	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	CGT-M CGT-M CGT-M CGT-M		Apr 14 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 17 Apr 14 – Mar 16 Nov 15 – Oct 16	
10/19/2012** 8/8/2013*** 7/30/2014 1/30/2015 1/30/2015  Winter 2015/16 8/8/2013*** 2/21/2014*** 7/30/2014		Fixed Collar Fixed Fixed Fixed Collar	\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	CGT-M CGT-M CGT-M CGT-M CGT-M CGT-M CGT-M		Apr 14 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 16 Apr 15 – Mar 17 Apr 14 – Mar 16 Nov 15 – Oct 16 Apr 15 – Mar 16	

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Strike Date	Supplier	Туре	Price Per Dth	Delivery Point	Volume Dth/day	Month(s)	Seasonal Volume
Summer 2016							
2/21/2014***		Fixed	\$	CGT-M		Nov 15 – Oct 16	
9/29/2014		Cst. Avg	\$	CGT-M		Apr 16 – Mar 17	
1/30/2015		Fixed	\$	CGT-M		Apr 15 – Mar 17	
9/29/2014		Cst. Avg	\$	CGT-M		Apr 16 – Mar 17	
9/29/2014		Cst. Avg	8	CGT-M		Apr 16 – Mar 17	
10/24/2014		Fixed	\$	CGT-M		Nov 16 – Oct 17	
1/30/2015		Fixed	\$	CGT-M		Apr 15 – Mar 17	
Summer 2017							
10/24/2014		Fixed	\$	CGT-M		Nov 16 – Oct 17	

- \* See Annual Report on Hedging Activity for April 1, 2011 March 31, 2012
- \*\* See Annual Report on Hedging Activity for April 1, 2012 March 31, 2013
- \*\*\* See Annual Report on Hedging Activity for April 1, 2013 March 31, 2014

CGT-M = Columbia Gulf Transmission Mainline TGT = Texas Gas Transmission Zone 1

There were no transactional costs associated with any of these arrangements. When the natural gas is delivered, the suppliers simply invoice Duke Energy Kentucky based on the hedged price. The portions of system supply hedged for each season are listed in the table below, along with the percentage including storage:

Season As of March 31, 2015	Total System Supply	Total Hedged	% Hedged	% Hedged And Storage*
Summer 2014				
Winter 2014/15				
Summer 2015				
Winter 2015/16				
Summer 2016				
Winter 2016/17				
Summer 2017				

<sup>\*</sup> Includes Interstate Pipeline Storage.

## Winter 2014-2015 Fixed Price with — April 29, 2014

During the hedging meeting on April 28, 2014, discussion focused on the fundamentals of the market such as weather, storage levels, PIRA and EIA price forecasts, analyst's forecasts of supply and demand and the impact on gas prices, economic influences on supply, demand and technical analysis on Summer and Winter Strip prices and current position in the Hedging Program. Discussion focused on the Winter 2014-2015 strip, with significant discussion around the low storage level and

current estimates for the November 1, 2014 balance estimated to be 3.4 Tcf. This level is well below the 3.6 Tcf to 3.8 Tcf levels in recent years. Storage injections will need to average 89 Bcf/week to reach the reduced 3.4 Tcf level which still would be the highest weekly injection level since 2003. Discussions took place about the volatility of the Winter 2014/15 contract and the best product to use during times of high volatility. Based on the discussion, a fixed price product will be used in the amount of \_\_\_\_\_\_ Dth/d for Duke Kentucky. Three suppliers were contacted to provide simultaneous bids. \_\_\_\_\_\_ and \_\_\_\_\_ were the lowest bidders at \$\_\_\_\_\_, with \_\_\_\_\_\_ bidding \$\_\_\_\_\_. Since there are no significant differences between the two lowest bids, \_\_\_\_\_\_ was randomly selected as the winning bidder.

The EIA storage report released on April 24, 2014 indicated that as of April 18, 2014, total U.S. amount of gas in storage was 899 Bcf (22% full), which was 831 Bcf lower than the previous year and 1,008 Bcf lower than the five-year average. Duke Energy Kentucky's storage with was approximately full).

The table below compares the futures price data for April 29th with the most recently available forecasts from PIRA and EIA and the locked in price that Duke Energy Kentucky agreed to pay for base gas to be delivered November 1, 2014 through March 31, 2015 at Columbia Gulf Mainline.

	Price Fo	orecasts	NYME	Price	Fixed	
Month	PIRA	EIA	High	Low	Close	Price
Nov 14	\$	\$4.220	\$4.870	\$4.791	\$4.862	
Dec 14	\$	\$4.300	\$4.971	\$4.898	\$4.963	
Jan 15	\$	\$4.270	\$5.040	\$4.966	\$5.032	
Feb 15	\$	\$4.200	\$4.992	\$4.934	\$4.988	
Mar 15	\$	\$4.050	\$4.875	\$4.802	\$4.870	
Weighted Avg.	\$	\$4.208	\$4.950	\$4.878	\$4.943	8

## 1 Year Costless Collar with July 30, 2014 and Winter 2014-2015 Fixed Price with NextEra – August 8, 2014

During the hedging meeting on July 25, 2014, discussion focused on the fundamentals of the market such as weather, storage levels, PIRA and EIA price forecasts, analyst's forecasts for future price movements, and current position in the Hedging Program. Significant discussion took place regarding the dramatic drop in prices, specifically the Winter 14/15, Summer 2015, and Winter 15/16 strips. The primary driver of the decrease in prices has been strong storage injections, storage fears have eased and that has been reflected in pricing. After discussion, it was determined that additional hedging should take place. Significant discussion took place regarding the amount and type of hedging to be recommended. Consensus was reached for the following: Dth/d for April 1, 2015 to March 31, 2016 using a Costless Collar with a ceiling of \$\text{m}\$ and converting a FOMI deal to a Fixed price deal for Dth/d for the Winter 14/15. Suppliers were contacted to determine interest in a one year Costless Collar (Dth/day) and a Winter 14/15 Fixed Price deal Dth/day). Three suppliers were contacted and asked to provide a floor for a ceiling set at \text{m}. The

The EIA storage report released on July 24, 2014 indicated that as of July 18, 2014, total U.S. amount of gas in storage was 2,219 Bcf (54% full), which was 561 Bcf lower than the previous year and 683 Bcf lower than the five-year average. Duke Energy Kentucky's storage with was approximately Bcf (Fig. 1911).

The table below compares the futures price data for July 30th with the most recently available forecasts from PIRA and EIA and the collared price that Duke Energy Kentucky agreed to pay for base gas to be delivered April 1, 2015 through March 31, 2016 at Columbia Gulf Mainline. Please note that EIA's and PIRA's forecasts do not cover the entire term. Since a single collar was locked in for all 12 months, a row showing the average price is provided for comparison purposes.

	Price Fo	orecasts	NYME	X Futures I	Price	Collar
Month	PIRA	EIA	High	Low	Close	Price
Apr 15	\$	\$4.260	\$3.738	\$3.692	\$3.720	
May 15	\$	\$4.160	\$3.712	\$3.695	\$3.712	
Jun 15	\$	\$4.350	\$3.746	\$3.730	\$3.746	
Jul 15	\$	\$4.460	\$3.781	\$3.765	\$3.781	
Aug 15	\$	\$4.480	\$3.791	\$3.775	\$3.791	
Sep 15	\$	\$4.440	\$3.801	\$3.751	\$3.778	
Oct 15	\$	\$4.570	\$3.798	\$3.780	\$3.798	
Nov 15	\$	\$4.610	\$3.875	\$3.853	\$3.874	
Dec 15	\$	\$4.650	\$4.046	\$4.015	\$4.046	
Jan 16			\$4.178	\$4.151	\$4.175	
Feb 16			\$4.159	\$4.142	\$4.156	
Mar 16			\$4.100	\$4.084	\$4.095	
Weighted Avg.	9	\$4.442	\$3.893	\$3.869	\$3.889	
No Cost Collar (	7/30/14)					
Floor						
Ceiling						

The EIA storage report released on August 7, 2014 indicated that as of August 1, 2014, total U.S. amount of gas in storage was 2,389 Bcf (58% full), which was 538 Bcf lower than the previous year and 608 Bcf lower than the five-year average. Duke Energy Kentucky's storage with was approximately Bcf (Full).

The table below compares the futures price data for August 8th with the most recently available forecasts from PIRA and EIA and the locked in price that Duke Energy Kentucky agreed to pay \_\_\_\_\_\_.

	Price Fo	orecasts	NYME	Fixed		
Month	PIRA	EIA	High	Low	Close	Price
Nov 14	\$	\$4.650	\$4.054	\$3.961	\$4.045	
Dec 14	\$	\$4.780	\$4.135	\$4.047	\$4.129	
Jan 15	\$	\$4.810	\$4.215	\$4.118	\$4.205	
Feb 15	\$	\$4.680	\$4.195	\$4.116	\$4.190	
Mar 15	\$	\$4.550	\$4.118	\$4.046	\$4.114	
Weighted Avg.	9	\$4.694	\$4.143	\$4.057	\$4.136	8

## 1 Year Cost Averaging with September 29, 2014

During the hedging meeting on September 25, 2014, discussion focused on the fundamentals of the market such as weather, storage, analyst's forecasts for future price movements, and current positions in the Hedging Program. Significant discussion took place regarding the storage inventory levels. While there was a large deficit from the five-year and one-year average, storage injections this season have been significantly above average and the end of the season balance is estimated to be 3.5 Tcf. The Natural Gas Hedging Committee decided that cost averaging would provide the opportunity to lock in today's lower price as well as participate in further declines in pricing by accumulating prices between October 1, 2014 and November 14, 2014. Bids were sought for April 2016 through March 2017 for 1,500 dth per day to be delivered at Columbia Gulf Mainline. I , and were each contacted by phone on September 29, 2014 requesting a bid. bid was -\$ bid was bid was accepted. The price will be the , and . average of the NYMEX closing price for the months April 2016 through March 2017 NYMEX contracts from October 1, 2014 through November 14, 2014 minus \$ dth/day delivered to Columbia Gulf Mainline. (See Attachment A).

## 1 Year Fixed Price with \_\_\_\_ - October 24, 2014

During the hedging meeting on October 23, 2014, discussion focused on the fundamentals including weather (end of the hurricane season), storage inventory levels, PIRA and EIA forecasts, independent analyst's projections of supply and demand and the impact on gas prices, technical analysis on Summer and Winter Strip prices, and current positions in the Hedging Program. Significant discussion took place regarding the various Winter Weather Forecasts and cuts announced by several analysts to their 2015 price forecasts. In addition, discussed that all Strips that are followed have hit their lows since 2011. After discussion, a determination was made to hedge additional volumes. Discussed several hedging opportunities and determined to hedge Dth/day for Duke Energy Kentucky for November 2016 through October 2017. were contacted for November 2016 through October 2017 on Columbia Gulf Mainline. bid-bid-bid-selected as the winning bidder based on lowest cost.

The EIA storage report released on October 23, 2014 indicated that as of October 17, 2014, total U.S. amount of gas in storage was 3,393 Bcf (83% full), which was 336 Bcf lower than the previous year and 338 Bcf lower than the five-year average. Duke

Energy Kentucky's storage with was approximately Bcf (full) on October 24, 2014.

The table below compares the futures price data for October 24th with the most recently available forecasts from PIRA and EIA and the locked in price that Duke Energy Kentucky agreed to pay for base gas to be delivered November 1, 2016 through October 31, 2017 at Columbia Gulf Mainline. Please note that PIRA's and EIA's forecasts were not available for this period.

	Price F	orecasts	NYME	X Futures	Price	Fixed
Month	PIRA	EIA	High	Low	Close	Price
Nov 16			\$3.900	\$3.880	\$3.899	
Dec 16			\$4.073	\$4.060	\$4.070	
Jan 17			\$4.210	\$4.200	\$4.204	
Feb 17			\$4.190	\$4.185	\$4.185	
Mar 17			\$4.127	\$4.110	\$4.127	
Apr 17			\$3.893	\$3.893	\$3.893	
May 17			\$3.901	\$3.890	\$3.901	
Jun 17			\$3.931	\$3.931	\$3.931	
Jul 17			\$3.967	\$3.967	\$3.967	
Aug 17			\$3.980	\$3.980	\$3.980	
Sep 17			\$3.972	\$3.972	\$3.972	
Oct 17			\$3.995	\$3.994	\$3.994	
Weighted Avg.			\$4.011	\$4.005	\$4.010	

## Winter 2015-2016 Fixed Price with — December 22, 2014

During the hedging meeting on December 18, 2014, discussion focused on the fundamentals of the market such as weather, storage levels, PIRA and EIA price forecasts, analyst's forecasts of supply and demand and the impact on gas prices, economic influences on supply, demand and technical analysis on Summer and Winter Strip prices and current position in the Hedging Program. Discussion focused on the recent decline in NYMEX pricing specifically Summer 2015 and Winter 2015/16 strip prices. After discussion determined that the Winter 2015/16 offered an opportunity to lock in prices with a fixed price transaction for \_\_\_\_\_\_\_Dth/d on Columbia Gulf Mainline. Three suppliers were contacted to provide simultaneous bids. \_\_\_\_\_\_\_\_ bid-\_\_\_\_\_\_, \_\_\_\_\_\_ bid-\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_ was selected as the winning bidder based on lowest cost.

The EIA storage report released on December 18, 2014 indicated that as of December 12, 2014, total U.S. amount of gas in storage was 3,295 Bcf (80% full), which was 6 Bcf higher than the previous year and 258 Bcf lower than the five-year average. Duke Energy Kentucky's storage with was approximately Bcf (10% full).

The table below compares the futures price data for December 22nd with the most recently available forecasts from PIRA and EIA and the locked in price that Duke Energy Kentucky agreed to pay for base gas to be delivered November 1, 2015 through

March 31, 2016 at Columbia Gulf Mainline. Please note that PIRA's and EIA's forecasts were not available for the entire period.

	Price Fo	orecasts	NYME	Fixed		
Month	PIRA	EIA	High	Low	Close	Price
Nov 15	\$	\$3.940	\$3.330	\$3.313	\$3.313	
Dec 15	\$	\$4.070	\$3.535	\$3.511	\$3.511	
Jan 16			\$3.752	\$3.654	\$3.660	
Feb 16			\$3.675	\$3.660	\$3.660	
Mar 16			\$3.704	\$3.608	\$3.616	
Weighted Avg.	\$	\$4.005	\$3.600	\$3.549	\$3.552	

## 1 Year Costless Collar and 2 Year Fixed Price with January 30, 2015

During the hedging meeting on January 29, 2015, discussion focused on the fundamentals of the market such as weather, storage levels, EIA price forecast, analyst's forecasts for future price movements, and current position in the Hedging Program. The EIA Storage Report indicated that storage levels are 14.6% above year ago levels and only 3% (79 Bcf) below the 5-year average. Significant discussion took place regarding the dramatic drop in prices for all strips monitored. Most of these strips are within 5 cents of their all-time lows. The primary driver of the decrease in prices has been storage inventory levels due to strong storage injections and lower withdraw amounts. After discussion, it was determined that additional hedging should take place. Significant discussion took place regarding the amount and type of hedging to be recommended. Due to volatility, the products recommended are Costless Collar and Fixed Price deals. Consensus was reached for the following: Dth/d for April 1, 2015 to March 31, 2016 using a Costless Collar with a ceiling of and a Fixed price deal for Dth/d for April 1, 2015 to March 31, 2017. Suppliers were contacted to determine interest in a one year Costless Collar ( Dth/day) and a 2 Year Fixed Price deal Dth/day). Four suppliers were contacted and asked to provide a floor for a ceiling set at \$ . The results were: was awarded the Costless Collar. Three suppliers were contacted to provide simultaneous bids for the 2 Year Fixed Price deal. bid--cost. The EIA storage report released on January 29, 2015 indicated that as of January 23, 2015, total U.S. amount of gas in storage was 2,543 Bcf (62% full), which was 324 Bcf higher than the previous year and 79 Bcf lower than the five-year average. Duke Energy Kentucky's storage with was approximately Bcf ( full).

The table below compares the futures price data for January 30th with the most

term. Since a single collar was locked in for all 12 months, a row showing the average price is provided for comparison purposes.

	Price Forecast	NYME	X Futures	Price	Collar Price
Month	EIA	High	Low	Close	
Apr 15	\$3.300	\$2.690	\$2.687	\$2.687	
May 15	\$3.250	\$2.744	\$2.675	\$2.714	
Jun 15	\$3.340	\$2.796	\$2.719	\$2.755	
Jul 15	\$3.380	\$2.841	\$2.777	\$2.811	
Aug 15	\$3.540	\$2.853	\$2.789	\$2.823	
Sep 15	\$3.530	\$2.841	\$2.779	\$2.812	
Oct 15	\$3.670	\$2.877	\$2.810	\$2.845	
Nov 15	\$3.730	\$2.986	\$2.931	\$2.963	
Dec 15	\$3.870	\$3.179	\$3.118	\$3.154	
Jan 16	\$3.920	\$3.305	\$3.254	\$3.287	
Feb 16	\$3.900	\$3.291	\$3.255	\$3.285	
Mar 16	\$3.820	\$3.269	\$3.222	\$3.250	
Weighted Avg.	\$3.604	\$2.973	\$2.918	\$2.949	
No Cost Collar (	1/30/15)				
Floor					
Ceiling					

The table below compares the futures price data for January 30th with the most recently available forecast from EIA and the fixed price that Duke Energy Kentucky agreed to pay for base gas to be delivered April 1, 2015 through March 31, 2017 at Columbia Gulf Mainline. Please note that EIA's forecast does not cover the entire term.

	Price Forecast	NYM	EX Future	s Price	
Month	EIA	High	Low	Close	Fixed Price
Apr 15	\$3.300	\$2.690	\$2.687	\$2.687	
May 15	\$3.250	\$2.744	\$2.675	\$2.714	
Jun 15	\$3.340	\$2.796	\$2.719	\$2.755	
Jul 15	\$3.380	\$2.841	\$2.777	\$2.811	
Aug 15	\$3.540	\$2.853	\$2.789	\$2.823	
Sep 15	\$3.530	\$2.841	\$2.779	\$2.812	
Oct 15	\$3.670	\$2.877	\$2.810	\$2.845	
Nov 15	\$3.730	\$2.986	\$2.931	\$2.963	
Dec 15	\$3.870	\$3.179	\$3.118	\$3.154	
Jan 16	\$3.920	\$3.305	\$3.254	\$3.287	
Feb 16	\$3.900	\$3.291	\$3.255	\$3.285	
Mar 16	\$3.820	\$3.269	\$3.222	\$3.250	
Apr 16		\$3.163	\$3.119	\$3.135	
May 16		\$3.147	\$3.145	\$3.146	
Jun 16		\$3.201	\$3.189	\$3.189	
Jul 16	Party of Spirit	\$3.245	\$3.235	\$3.235	
Aug 16		\$3.247	\$3.243	\$3.244	
Sep 16	2604.35	\$3.240	\$3.231	\$3.231	
Oct 16		\$3.270	\$3.240	\$3.252	

	Price Forecast	NYM			
Month	EIA	High	Low	Close	Fixed Price
Nov 16		\$3.330	\$3.313	\$3.323	
Dec 16		\$3.513	\$3.500	\$3.513	
Jan 17		\$3.687	\$3.645	\$3.671	
Feb 17		\$3.700	\$3.630	\$3.667	
Mar 17		\$3.620	\$3.600	\$3.619	
2 Yr. Wtd. Avg.		\$3.167	\$3.128	\$3.149	

## **Effect of Hedging Program on Gas Costs**

The effect of the hedging activity on gas cost can be determined by comparing the price paid for any hedged gas with the published Inside FERC First of Month Index (FOMI) for the delivery point where physical delivery of the hedged gas was received (Columbia Gulf Mainline or Texas Gas Zone 1). The hedged price includes the basis from Henry Hub to the point of delivery. This analysis shows that for the 12 months ended March 31, 2015 gas costs were about million more when comparing the hedged price with the FOMI at the time of physical delivery than they would have been if no hedging had taken place. The following tables list each package of hedged gas and the impact on the total gas cost resulting from that hedge.

## Summer Season 2014

Supplier	Type	Dth/day	Total Dth	Receipt Point	Hedged Price \$/dth	IFERC FOMI \$/dth	Cost Increase/ (Savings)
April							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
May							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
June							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
July							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
August							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			

Summer Season 2014 (continued)

Supplier	Туре	Dth/day	Total Dth	Receipt Point	Hedged Price \$/dth	IFERC FOMI \$/dth	Cost Increase/ (Savings)
September							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
October							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
Season Total							

## Winter Season 2014/2015

Supplier	Туре	Dth/day	Total Dth	Receipt Point	Hedged Price \$/dth	IFERC FOMI \$/dth	Cost Increase/ (Savings)
November							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			TGT			
	Fixed			CGT-M			
December							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			TGT			
	Fixed			CGT-M			
January							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			TGT			
	Fixed			CGT-M			
February							
	Fixed			CGT-M	\$		
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			TGT			
	Fixed			CGT-M			

Winter	Season	2014/2015	(continued)
--------	--------	-----------	-------------

Supplier	Type	Dth/day	Total Dth	Receipt Point	Hedged Price \$/dth	IFERC FOMI \$/dth	Cost Increase/ (Savings)
March							
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			CGT-M			
	Fixed			TGT			
	Fixed			CGT-M			
Season Total	1						

Due to the mechanics of the Gas Cost Adjustment (GCA) Clause, the effect of the hedging program on the gas cost portion of customer's bills will occur in stages. The Expected Gas Cost (EGC) component of each GCA included estimated gas costs based on a combination of hedged gas and gas at estimated market prices. Absent the hedging program, the EGC would have been calculated on market prices alone. The Actual Adjustment (AA) component of each GCA also includes the effect of the hedging program reflected in the actual gas costs, which are compared to GCA revenues to calculate the AA.

When the monthly EGCs were calculated, the forecasted natural gas requirements were priced out based on the weighted average of known hedged prices and the NYMEX futures price on the day that the calculation was performed. To determine the impact of the hedging program on the EGC, the hedging transactions were removed from the original calculations to determine what EGC would have been filed if no hedging had taken place. This effect may differ from the ultimate impact on the GCA once actual costs are known and flow through the AA.

The following table shows the effect that hedging had on each separate GCA rate for the 12 months ending March 31, 2015. The prior year's hedging program continues to affect the AA portion of the GCA through May 31, 2015. Likewise, gas costs during the 12 months ended March 31, 2015 will continue to affect the AA portion of the GCA through May 31, 2016. A negative sign means that the rate was decreased due to the hedging program, and a positive indicates that the rate was increased. Rates are in dollars per ccf.

Month	Impact on EGC	Impact on AA *	Impact on GCA		
April 2014	-\$0.0142	+\$0.0043	-\$0.0099		
May 2014	-\$0.0125	+\$0.0043	-\$0.0082		
June 2014	-\$0.0092	-\$0.0031	-\$0.0123		
July 2014	-\$0.0063	-\$0.0031	-\$0.0094		
August 2014	+\$0.0053	-\$0.0031	+\$0.0022		
September 2014	+\$0.0127	-\$0.0007	+\$0.0120		
October 2014	+\$0.0078	-\$0.0007	+\$0.0071		
November 2014	+\$0.0219	-\$0.0007	+\$0.0212		

Month	Impact on EGC	Impact on AA *	Impact on GCA
December 2014	+\$0.0077	-\$0.0028	+\$0.0049
January 2015	+\$0.0177	-\$0.0028	+\$0.0149
February 2015	+\$0.0303	-\$0.0028	+\$0.0275
March 2015	+\$0.0625	-\$0.0023	+\$0.0602

<sup>\*</sup>Includes impact on AA from previous year's hedging activity.

To determine the ultimate effect on the price paid by customers subject to the GCA, the total difference in gas cost due to the hedging program was divided by the annual total Ccf used in the calculation of the EGC as part of the GCA filing effective March 1, 2015. Based on this calculation, GCA customers will pay approximately /Ccf more than they would have paid absent the hedging program for natural gas purchased between April 1, 2014 and March 31, 2015, as shown below:

## Effect of Hedging Program on Volatility

The hedging program increases costs when market prices are relatively low and decreases costs when market prices are high. This provides prima facie evidence that the hedging program meets its stated goal of reducing the volatility in gas prices and providing some protection against extremely high prices. Based on a more statistical definition of volatility, the hedging program reduced the standard deviation of the average commodity cost of gas by //dth over the 12 months ended March 31, 2015.

	Actual Averag Gas (Inc	e Commodi ludes Hedgi			Estimated Aver of Gas W	rage Commo ithout Hedg	
	Commodity Cost	Dth	Wgt. Avg.	Cost/ (Savings)	Commodity Cost	Dth	Wgt. Avg.
Apr-14							
May-14							
Jun-14							
Jul-14							
Aug-14							
Sep-14							
Oct-14							
Nov-14							
Dec-14							
Jan-15							
Feb-15							
Mar-15							
Standard I	Deviation						
Reduction	in Standard Devia	ation					

## **Weather Analysis**

The table below lists heating degree days for November 2014 through March 2015 compared to normal.

	Nov	Dec	Jan	Feb	Mar	Total
Normal Heating Degree Days*	572	928	1,029	855	622	4,006
2014/2015						
Heating Degree Days	782	842	1,075	1,172	705	4,576
% Colder (Warmer) than Normal	37%	(9%)	4%	37%	13%	14%

<sup>\*</sup> Based on 10-year average 2004-2013.

## **Summary**

The average NYMEX settlement price for the 12 month period ended March 31, 2015 was about \$3.93 with a range of \$1.93. The comparable 2014/2013 average was about \$4.05 with a range of about \$2.10. During this period the result of the hedging program was increased costs. Although the hedging plan increased gas costs overall, the hedging strategy was in place to provide protection against extreme prices and reduce volatility. The hedging program was successful in reducing the impact of volatility on the GCA by 25%.

## Attachment A Information Reviewed at Hedging Meetings

## Gas Resources Hedging Program Market Indicators Summary April 28, 2014

W	Price Pressure	Term	Comments	Page Ref
Weather		_	INDAA aradiataa ah	_
Long Term Forecast (May 14Jul 14)	†↓	Long	NOAA predicting above average temperatures for May 2014—July 2014 for the majority of the CONUS. In addition in mid-April, Duke's Meteorology Internal Outlook for the Summer 2014 was released. The report indicates that El Nino conditions are expected to develop by mid to late summer, which will lead to cooler and wetter than normal conditions overall for both the Midwest and Southeast.	12
Mid Term Forecast (30-60 days)	1	Long	May is predicted to be 5.3% colder than normal based on 10 year normals and June weather is predicted to be 8.3% colder than normal.	13
Short Term Forecast (6-10 days)	++	Short	Below normal temperatures MidCon to the East coast early in the period followed by below normal temperatures in the North and above normal temperatures in the South.	14
Storage Inventory	1000		Temperature of the cooper.	
EIA Weekly Storage Report	1	Long	Storage injections for the week ending April 18th were 49 Bcf. Storage levels are at 0.899 TCF which is 48.0% lower than last year and 52.9% lower than the 5 year average.	15
PIRA Energy Group Winter 2014/15: Summer 2015:	1	Long	GAS PRICE SCORECARD: May 2014—October 2014 Gas Price Outlook "Bullish" based on fundamentals such as "Lower 48 Gas Production", "US Storage Levels", "Industrial Sector", and "Exports to Mexico".	16-17
Gas DailyPrice Projections	<b>†</b>	Long	Survey of analysts more bearish than NYMEX strip for the second quarter. Average price is \$4.42/MMBu vs. \$4.61 NYMEX strip. Most bullish forecast comes in at \$4.75/Mcf citing daunting storage refill requirements. Citing coal market decay, Jefferies hikes 2014 estimate by 8%. "The era of too much of everythingtoo much coal, too much gas—is over." Storage levels at 3.3 Tcf to 3.4 Tcf after injection season well below 5-year average. Utilities will have a difficult choice to make—burn coal and drawdown coal inventories or burn gas and risk being short this winter in either case Gas Prices Benefit.	18-19
Gas DailyStorage	1	Long	Slow start to injection season stokes concerns about supply adequacy. Storage inventory at an 11-year low. Most analysts have reduced the Nov. 1st storage balance to 3.4 Tcf down from 3.6 to 3.8 Tcf in recent years. Storage Injections will need to average 89 Bcf/week to hit reduced 3.4 Tcf level which still would be the highest average weekly injection level since 2003. Another factor suppressing gas-to-coal switching is lower coal stockoiles.	20
Gas DailyMiscellaneous Information	1	Long	Flaws in power market raises concerns on the reliance of gas-fired generation. Reliability of the power grid is a concern due to the expected wave of coal plant retirements. Coal and nuclear plants being priced out of the market by gas-fired generation and subsidized wind power. The market favors gas-fired generation, but recent cold weather highlighted their vulnerability—no firm capacity to natural gas.	21
Government Agencies				
Energy Information Administration Winter 2014/15: \$4.208 Summer 2015: \$3.999	1	Long	The projected Henry Hub natural gas spot price averages \$4.442/MMBtu for 2014 and \$4.107/MMBtu for 2015.	22
Fechnical Analysis				
Winter 2014-15 Strip Chart	1	Short	Closed at \$4.80	23
Summer 2015 Strip Chart	1 1	Short	Closed at \$4.17	24
Winter 2015-16 Strip Chart	1	Short	Closed at \$4.38	25
Summer 2016 Strip Chart	1	Short	Closed at \$4.16	26
Winter 2016-17 Strip Chart	1	Short	Closed at \$4.43	27
Summer 2017 Strip Chart	1	Short	Closed at \$4.23	28
Historical vs. Implied Volatility	t	Short	The upper bound of the projection of March 2014 prices calculated at the start of the winter season based on historic and implied volatility was far exceeded by actual NYMEX prices during the winter. This indicates a sea change in the market and The Schork Report expects prices to continue to rise.	29
Conomy		1		
Demand			EIA projects total natural gas consumption will average 72.1 Bct/d in 2014, an increase of 0.7 Bct/d from 2013. Increased residential, commercial, and industrial use offsets declines from the electric power sector, which are related to higher natural gas prices.	30-31
Supply	-	Long	Total marketed production expected to increase by an average rate of 3% in 2014 and 1/5% in 2015.	30-31
Oil Market		Long	Brent crude projected to average \$105 per barrel in 2014 and \$101 per barrel in 2015. EIA expects WTi crude to average \$96 per barrel in 2014 and \$90 in 2015.	31

	Conference Room - 11:00 am Mike Brumback, Mitch Martin, Jeff Kern, Joachim Fischesser, Steve Niederbaumer
March 28, 2014 with contacted: storage inventory levels, Pl analysis on Summer and W 1, 2014 balance estimated 89 Bct/week to reach the re was made to hedge additio	transaction resulting from the March 27, 2014 Hedging Meeting. Fixed price deal for Duke Kentucky was completed on the period November 1, 2014—March 31, 2015 of Dith/d at a price of the period November 1, 2014—March 31, 2015 of Dith/d at a price of the price of the period November 1, 2014—March 31, 2015 of Discussed market fundamentals including weather, RA and EIA price forecasts, analysts price projections, economic influences on supply and demand and technical finter Strip prices. Significant discussion took place around the low storage level and current estimates for the November to be 3.4 Tcf. This level is well below the 3.6 Tcf to 3.8 Tcf levels in recent years. Storage injections will need to average duded 3.4 Tcf level which still would be the highest weekly injection level since 2003. Based on these factors, a decision nal volumes at this time. Discussions took place about volatility and the best product to use during times of high volatility fixed price product will be used in the amount of the price of the product to use during times of high volatility fixed price product will be used in the amount of the price of the product will be used in the amount of the price of the product will be used in the amount of the price of the product will be used in the product will be used in the amount of the price of the pri

### Duke Energy Kentucky Hedging Program - Current Position November 2013 - October 2014 As of 04/23/14

Load Forecast	Nov-13 Dec-13 Jan-14 Feb-14 Mar-14	Apr-14	May-14 Jun	-14 Jul-14	Aug-14	Sep-14	Oct-14
City Gate Load Forecast (Mcf)							
TCO FSS Injections (Mcf)							
Total Requirements (Mcf)							
TCO FSS Withdrawals (Mcf)							
Other "Withdrawais" (Mcf)							
Total Withdrawals (Mcf)							
Amount Hedged (dth/day)							
Fixed Price							
Fixed Price							
Fixed Price							
Fixed Price							
Fixed Price							
Fixed Price							
Total Hedged (dth/day)							
Total Hedged (dth)							
Types of Hedging Products (1)							
Fixed Price							
Price Caps							
No-Cost Collars							
Embedded Hedged Cost							
Winter							
Summer							
Estimated System Supply (Gross)							
Hedged % of System Supply							
Seasonal % of System Supply							
Amt Hedged with Storage @ City Gate							
Hedged (City Gate) (Dth)							
Storage Withdrawal (Dth)							
Market (Dth)							
Total (incl. Injections) (Dth)							
% Hedged & Storage							
Seasonal %							

(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.











Duke Energy Kentucky
Hedging Program - Current Position
November 2014 - October 2015
As of 04/23/14

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	N	OV-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15	
Load Forecast										041.70	riag 10	OOP 13	Oct-13	100
City Gate Load Forecast (Mcf)	8 - R													
TCO FSS Injections (Mcf)	- 6													
Total Requirements (Mcf)														
TCO FSS Withdrawals (Mcf)														
Other "Withdrawals" (Mcf)	- 14													
Total Withdrawals (Mcf)														
Amount Hedged (dth/day)														
Fixed Price														
Fixed Price														
Fixed Price														
Fixed Price														
Total Hedged (dth/day)	1.54													
Total Hedged (dth)														
Types of Hedging Products (1)	(8)													
Fixed Price	- 3													
Price Caps														
No-Cost Collars														
Embedded Hedged Cost														
Winter														
Summer														
Estimated System Supply (Gross)														
Hedged % of System Supply														
Seasonal % of System Supply														
Amt Hedged with Storage @ City Gate														
Hedged (City Gate) (Dth)	2													
Storage Withdrawal (Dth)	1.08													
Market (Dth)	333													
Total (incl. Injections) (Dth)														
% Hedged & Storage														
Seasonal %														

<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

### Duke Energy Kentucky Hedging Program - Current Position November 2015 - October 2016 As of 04/23/14

Nov-15 Dec-15 Jan-16 Feb-16 Mar-16 Apr-16 **May-16** Jun-16 Jul-16 Aug-16 Sep-16 Oct-16 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other "Withdrawals" (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price **Fixed Price** TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price Price Caps** No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



Duke Energy Kentucky
Hedging Program - Current Position
November 2016 - October 2017
As of 04/23/14

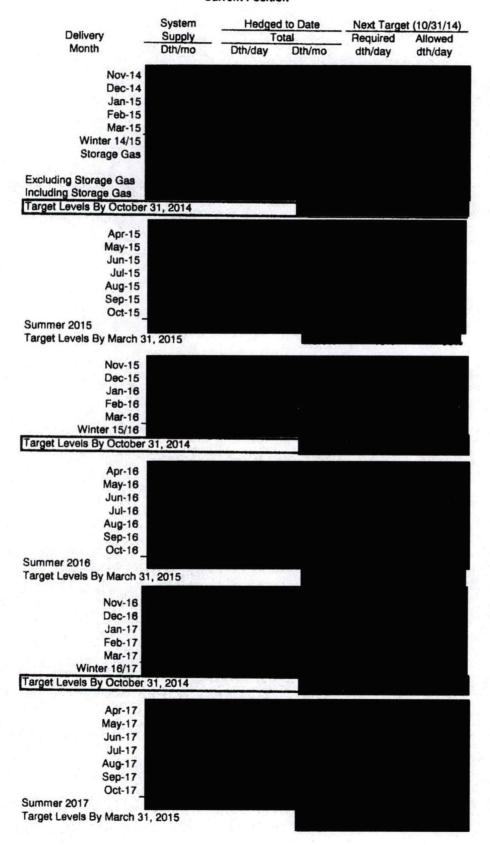
KyPSC Case No. 2012-180 2015 Annual Report PUBLIC Page 20 of 333

Nov-16 Dec-16 Feb-17 Jan-17 Mar-17 Apr-17 May-17 Jun-17 Jul-17 Aug-17 Sep-17 Oct-17 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other "Withdrawals" (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) Fixed Price Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. injections) (Dth) % Hedged & Storage Seasonal %

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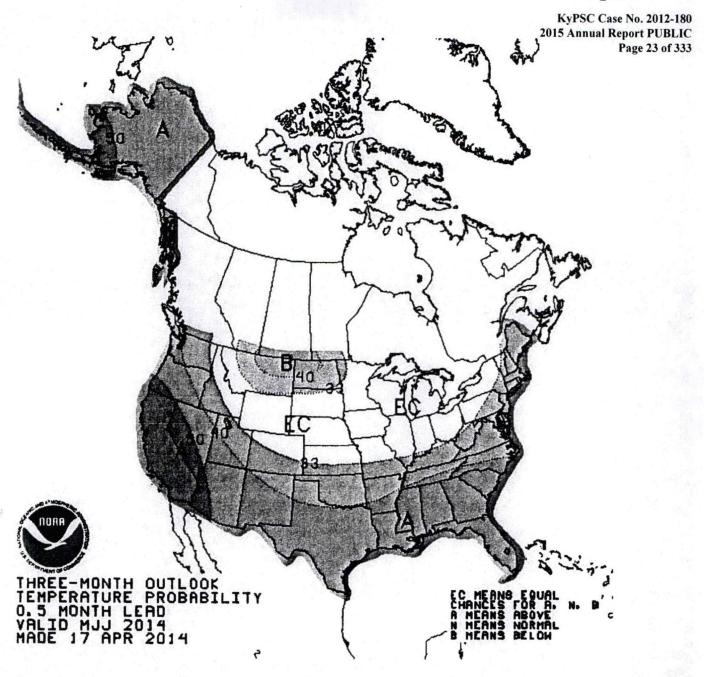
<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

### Duke Energy Kentucky Hedging Program Current Position



	Historic Prices: NYMEX Closing Price	Historic Prices: AEX Closing Price					
	5-yr. avg.	Last Year	PIRA	EIA	NYMEX	Hedged Prices	ices
	(09/10-13/14)	(2013-2014)	25-Apr-14	8-Apr-14	27-Apr-14	Ohio Ken	Kentucky
Mav	\$3.63	\$4.15		\$4 070	\$4 647	<del>U</del>	
Jun		\$4.15		\$4.150	\$4.658	<del>,                                    </del>	
٦	\$3.90	\$3.71	GI(	\$4.190	\$4.687	99	
Aug	\$3.80	\$3.46		\$4.160	\$4.683	69	
Sep	\$3.31	\$3.57		\$4.160	\$4.660	69	
Oct	\$3.57	\$3.50		\$4.160	\$4.667	69	
Nov	\$3.61	\$3.50		\$4.220	\$4.706	65	
Dec	\$3.93	\$3.82		\$4.300	\$4.810	69	
Jan	\$4.18	\$4.41		\$4.270	\$4.883	69	
Feb	\$4.21	\$5.56		\$4.200	\$4.847	49	
Mar	\$3.87	\$4.86		\$4.050	\$4.742	49	
Apr	\$3.77	\$4.58		\$3.810	\$4.188	69	
12 Month Avg	\$3.79	\$4.10		\$4.145	\$4.682		
Summer	er Average			\$4.100	\$4.599		
Winter Av	Average			\$4.208	\$4.798		

Page 1 of 1

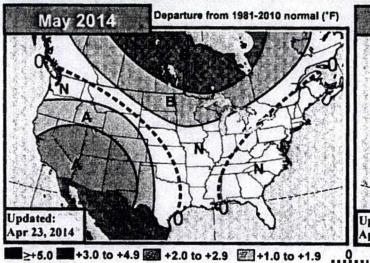


## EarthSat 30-60 Day Outlook

Wednesday, April 23, 2014

Meteorologists: SS/PV/BH/RG

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WEATHER SERVICES



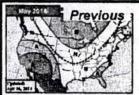
June 2014 Departure from 1981-2010 normal (°F)

N

Updated:
Apr 23, 2014

-2.0 to -2.9

\_\_\_\_-0.9 to 0.9



## **Cooler Southeast**

Slightly Warmer West

Mixed changes were made to the May outlook this week with the net change pushing slightly in the cooler direction. The current forecast through the first seven days of the month shows the potential for moderately strong cool air in place across the South to East. This cool start to the month supports the removal of categorical aboves from the 30 day outlook with the potential here of lower heights lingering beyond the first week, yielding a cooler threat across the Deep South to the Southeast. The cooler changes in the Southeast extend westward into the mid-continent as well where cooler air lingers downstream of a ridging over parts of the North Pacific. The outlook in the West shifts slightly warmer today with a strong ongoing drought playing a role in supporting a persistent area of higher than normal heights over this region. The combination of ongoing drought conditions and high level ridging suggests some warmer potential across parts of Cali and the

May PWCDD\*\* Forecasts

\*10Y Normal '04-13

May 2014 Fcst:

115.0

10Y Normal 121.5 30Y Normal 108.5 May-2013 115.8

Change: -5

GWHDDs: 150 (30 yr norm 157)

"National Gas-Weighted HDDs



-1.0 to -1.9

## No Changes

-3.0 to -4.9

Still Cool Midwest/Northeast

June remains unchanged from last week, showing a cooler than normal outlook for much of the northern Plains and the Midwest to the East Coast. While other influences will undoubtedly have some impacts on the net pattern in June the primary driver is still expected to be the developing El Niño. With confidence in this feature's impacts holding steady from last week the forecast remains tilted slightly to the cooler side of normal. But the El Niño impacts do not come without some concerns. Though sea surface conditions may be well into El Niño territory by this point (> +0.5C SST in Nino 3.4) the atmospheric circulation may be lagging behind the ocean and typical weather pattern responses may only just be beginning to show up. This atmospheric lag would potentially present warmer threats to the outlook, while a stronger onset of El Niño might yet produce a cooler outlook than is currently shown.

Jun PWCDD\*\* Forecasts

\*10Y Normal '04-13

Jun 2014 Fcst:

230.0

10Y Normal\* 250.7 30Y Normal 230.6 Jun-2013 254.2

Change: 0

"National Pop-Weighted CDDs

Apr so far



Final 30 Day Outlook



urrent vent + forecast (4/1-4)

April has trended colder since last week nationwide thanks to colder forecast trends for the end of the month. Aboves are weaker than last week in the West and the East and helows are stronger in the north-central US. This trends back closer to our 30/60 outlooks which had looked too cold last week, though those outlooks still appear to have been a bit too cold in the southern Midwest and the East. If the current forecast out to April 30 were to verify perfectly the month would total 343 GWHDDs still warmer than the 30-year normal but cooler than the 10-year normal.



MDA Information Systems LLC 820 West Diamond Ave, Suite 300, Gaithersburg, MD 20878 Tel 240-833-8300 Fax 240-833-8301 www.mdaus.com ©2014 [029000000107.pdf—Version 2.3]

## EarthSat 6-10 Day Forecast—Detailed

Monday, April 28, 2014

Meteorologist: PV/AC



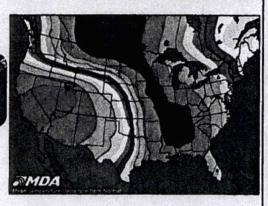
**WEATHER SERVICES** 

## Day 6: Saturday, May 3

**Previous** Forecast:



**Forecast** Confidence: 8/10



## Below to Much Belows Threaten N. Plains/Upper MW

## Strong Warm Push Along South-Central U.S.

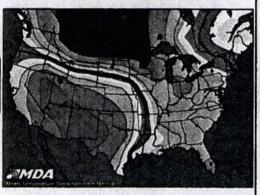
A cool North, warmer South pattern takes shape coming out of the weekend. A -WPO pattern supports these conditions through much of the period. Below to much normal readings encompass the Northern Plains and Upper Midwest through the early and middle parts of the period. An active pattern prevents any stronger cool air from diving into the rest of the Plains and Midwest in general. Cooling demand may be stronger along the South-Central U.S. and into the Deep South during the middle of the period. Stormy conditions might help warmer readings push into the E. Midwest and the East during the second half of the period. However, timing issues are a concern with the progression of stormy conditions.

## Day 7: Sunday, May 4

**Previous** Forecast:



**Forecast** Confidence: 8/10

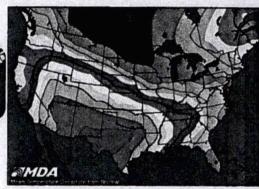


## Day 8: Monday, May 5

**Previous** Forecast:



**Forecast** Confidence: 8/10

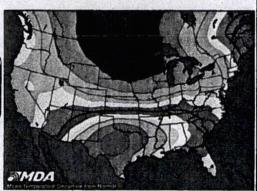


## Day 9: Tuesday, May 6

**Previous** Forecast:



**Forecast** Confidence: 6/10



## Day 10: Wednesday, May 7

**Previous** Forecast:



**Forecast** Confidence: 6/10







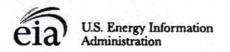


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A +8 MA+15 SA

KyPSC Case No. 2012-180 2015 Annual Report PUBLIC Page 26 of 333



## Weekly Natural Gas Storage Report

for week ending April 18, 2014 | Released: April 24, 2014 at 10:30 s.m. | Next Release: May 1, 2014

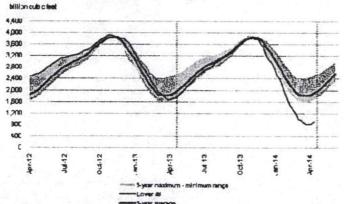
Summary text CSV JSNWorking gas in underground storage, lower 48 states

					Historical Comparisons				
		billion	Stocks cubic feet (Bcf)		ear ago 1/18/13)	5-Year average (2009-2013)			
Region	04/18/14	04/11/14	net change	Implied flow	(Bcf)	% change	(Bcf)	% change	
East	328	311	17	17	683	-52.0	798	-58.9	
West	178	168	10	10	334	-46.7	305	-41.6	
Producing	393	371	22	22	712	-44.8	805	-51.2	
Salt	89	76	13	13	186	-52.2	164	-45.7	
Nonsait	304	295	9	9	526	-42.2	641	-52.6	
Total	899	850	49	49	1,730	-48.0	1,907	-52.9	

### Summary

Working gas in storage was 899 Bct as of Friday, April 18, 2014, according to EIA estimates. This represents a net increase of 49 Bct from the previous week. Stocks were 831 Bct less than last year at this time and 1,008 Bct below the 5-year average of 1,907 Bct. In the East Region, stocks were 470 Bct below the 5-year average following net injections of 17 Bct. Stocks in the Producing Region were 412 Bct below the 5-year average of 805 Bct after a net injection of 22 Bct. Stocks in the West Region were 127 Bct below the 5-year average after a net addition of 10 Bcf. At 899 Bcf, total working gas is below the 5-year historical range.

### Working gas in underground storage-compared with the 5-year maximum and minimum



Ca source: U.S. Energy information Administration

Note: The shaded area indicates the range between the historical minimum and maximum values for the weakly series from 2006 through 2013

Source: Form EIA-912, "Weekly Underground Natural Gas Storage Report." The dashed vertical lines indicate ourrent and year-ago weekly periods.

## PIRA North American Gas Price Overview Per MMBTU April 25, 2014 Release

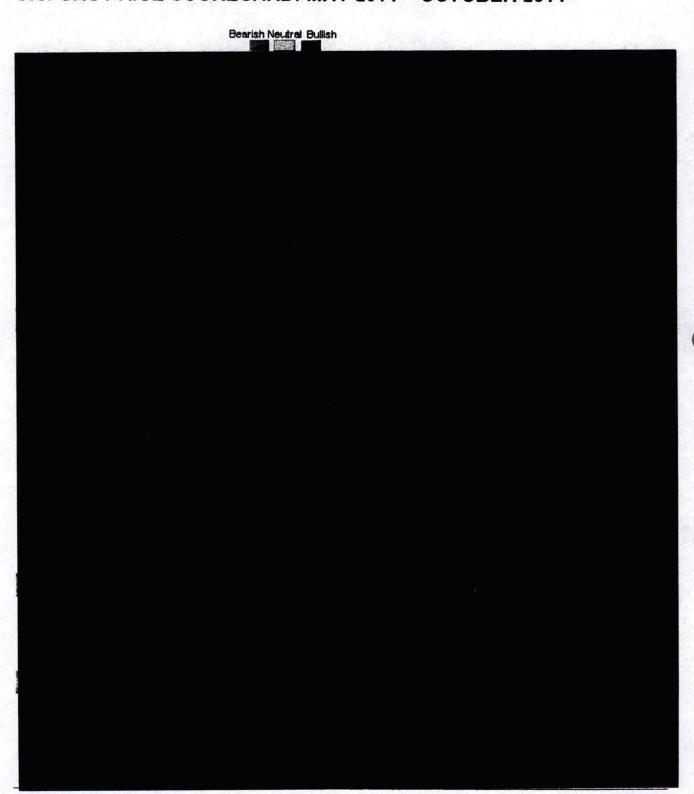
Winter 2012- 2013	\$	Winter 2013- 2014	\$ Winter 2014- 2015	\$			- 100
Summer 2012	\$	Summer 2013	\$ Summer 2014	\$	Summe 2015	s s	
Average 2012	\$	Average 2013	\$ Average 2014	\$	Averag 2015	\$	
Dec-12		Dec-13	Dec-14	38.7	Dec-15		
Nov-12		Nov-13	Nov-14		Nov-15	5	
Oct-12	100	Oct-13	Oct-14		Oct-15	Marine Committee	
Sep-12		Sep-13	Sep-14		Sep-15	Walk What of the College	
Aug-12	15	Aug-13	Aug-14		Aug-15	Atternal	
Jul-12		Jul-13	Jul-14	-49	Jul-15	Maria	
Jun-12		Jun-13	Jun-14		Jun-15		
May-12		May-13	May-14		May-1	Carrier 1	
Apr-12		Apr-13	Apr-14		Apr-15	man l	
Mar-12		Mar-13	Mar-14		Mar-1	anima !	
Feb-12		Feb-13	Feb-14		Feb-15		
Jan-12		Jan-13	Jan-14	1	Jan-15		

North American Gas Forecast Monthly

April 25, 2014

NATURAL GAS

## U.S. GAS PRICE SCORECARD: MAY 2014 - OCTOBER 2014



## **Price Projections**

## In Predicting Second-Quarter Prices, Analysts More Bearish Than NYMEX Strip—April 25, 2014

The average of 16 analysts contacted by Platts calls for Henry Hub gas to average \$4.42/MMBtu during the second quarter, while the NYMEX strip for the quarter closed Friday at \$4.61/MMBtu.

FBR Capital is the most bullish of the 16 sampled with a price forecast of \$4.75/Mcf for April through June. According to FBR Capital, the storage refill requirements are daunting—"the market seems not to care as a cool summer could even things out pretty quickly, however, we think upside is much more significant if summer shows up."

According to investment bank Raymond James, US gas prices would average \$4.15 during the first quarter (actual based on NYMEX close--\$4.94) on some incrementally higher winter demand. "What we didn't envision was how the cold weather would continue, and even intensify, leaving the system constrained and introducing problems we haven't encountered in recent history such as regional price blowouts, questions regarding gas-to-coal switching capacity, utility coal stockpiles, pipeline constraints and freeze-offs, to name a few."

## Citing Coal Market decay, Jefferies hikes 2014 Gas Price by 8%--April 25, 2014

Jefferies raises their 2014 gas price forecast 8% citing the impact of a much colderthan-expected winter and the end of coal's ability to keep gas prices range-bound.

"The era of too much of everything—too much coal, too much gas—is over", Jefferies analyst raised the average price forecast from \$4/Mcf to \$4.30 at Henry Hub. Jefferies expects gas in storage to end the injection season between 3.3 Tcf and 3.4 Tcf, well below the five-year average.

"Utilities will have to make difficult choices this summer. They can either burn coal at historical levels and experience massive drawdowns in coal inventories or preferentially burn gas and run the risk of being short this winter. In either case we believe gas prices benefit."

Signs from this winter are that coal burn is below where it should be based on prior-year behavior—gas demand benefited—this is one of the main reasons for the 900 Bcf

deficit. Due to fuel switching and coal plant retirements coal use has been 15% to 20% lower than in prior periods when power demand and weather were almost identical.



"We believe the reluctance to burn coal, partly because of low stockpiles, will continue to affect summer behavior. The long awaited decay in the coal sector is now at hand, with 3% (9.3 GW) of the nation's power capacity lost in the last two years and another 20% (60 GW) expected by 2020 as new emissions regulations take effect."

Increased gas production won't come to the rescue this year because the growth is in the Marcellus Shale where takeaway capacity doesn't increase significantly until the second half of the year.

### **Storage**

# Slow Start to Injection Season Stokes Fresh Concerns About Supply Adequacy—April 25, 2014

With storage inventories a 11-year lows, the slow start to the injection season (49-Bcf for the week ending April 18 to 899 Bcf) continues to spark concerns about the market's ability to refill inventories to adequate levels by November 1, 2014.

"Indeed, the industry still has a long road ahead of it before the next heating season. For the last five years, storage has refilled to the 3.6 to 3.8 Tcf level, but this year most analysts have ratcheted down their fall forecast to about 3.4 Tcf."

"Even to reach that more modest level by November 1, storage injections would have to average at least 89 Bcf/week going forward. Last year, refills averaged 68.6 Bcf/week from April through October, while the record was about 80 Bcf/week in 2003, according to EIA data."

Gas demand for power generation could stay relatively strong in 2014 as gas plants help to substitute 19 GW of coal-fired generation retired in the last two years.

An additional factor suppressing gas-to-coal switching could be that coal stockpiles held by power generation facilities are 26% lower than a year ago. "If you have people getting nervous on coal inventories, they may hold onto their coal and let that get replenished—if it turns out to be a tight summer, it makes more sense to keep using gas now when it's \$4.50 rather than when it's \$5."

### **Miscellaneous Information**



### Grid Problems Prompt New Look At Gas Reliance—April 23, 2014

Concern is growing that the cold weather of this winter have revealed serious flaws in power markets that could require fixes beyond reforms already proposed including a serious look at the rapid shift to reliance on more natural gas-fired generation. Focus is shifting to concerns about the reliability of the grid given the wave of coal plant retirements that are expected in the next year or so.

Coal and nuclear plant operators are complaining that low-cost, gas fired generation and subsidized wind power are pricing them out of some markets, which could further strain the grid. "I have consistently said we'll let the markets decide which fuels are the winners based on economics and affordability, but I can't be reliability neutral. On this subject it is just too important," said FERC Commissioner Moeller

In most RTOs, market rules have favored gas-fired generation but, recent cold weather highlighted their vulnerability. Gas utilities sign firm contracts for gas delivery to serve their customers through the winter and that usually leaves enough interruptible supplies for gas generators, but that was not true during the recent weather.

According to ICF, PJM was only 300 MW to 400 MW away from rolling blackouts. If margins were any tighter critical equipment could be put at risk and if equipment fails, it could trigger cascading failures throughout the grid.

Low-priced gas fired generation, in conjunction with low capacity prices, could push nuclear generation out of the market. In addition, Moeller believes that the pending coal plant retirements constitutes a high enough concern that it calls for a more formal review process that would include FERC, EPA and non-government entities to analyze the details of the retiring units as well as the new units and new transmission that will be needed to manage the transition.

4.27

4.20

4.05

3.81

3.75

3.94

4.06

4.10

### **Energy Information Administration Henry Hub Pricing** Per MMbtu April 8, 2014 Release

Jan-12	2.67
Feb-12	2.50
Mar-12	2.18
Apr-12	1.95
May-12	2.43
Jun-12	2.46
Jul-12	2.95
Aug-12	2.84
Sep-12	2.85
Oct-12	3.32
Nov-12	3.54
Dec-12	3.34
Average	 enen, suit sundina essunit yan
2012	\$ 2.753
Summer	 
2012	\$ 2.686
Winter 2012- 2013	\$ 3.470

Jan-13	3.33
Feb-13	3.33
Mar-13	3.81
Apr-13	4.17
May-13	4.04
Jun-13	3.83
Jul-13	3.62
Aug-13	3.43
Sep-13	3.62
Oct-13	3.68
Nov-13	3.64
Dec-13	4.24
Average	
2013	\$ 3.728
Summer	
2013	\$ 3.770
Winter 2013	
2014	\$ 4.698

2014

* M.E*	
Jan-14	4.71
Feb-14	6.00
Mar-14	4.90
Apr-14	4.28
May-14	4.07
Jun-14	4.15
Jul-14	4.19
Aug-14	4.16
Sep-14	4.16
Oct-14	4.16
Nov-14	4.22
Dec-14	4.30
Average 2014	\$ 4.442
Summer 2014	\$ 4.167

Sep-15		4.11
Oct-15		4.22
Nov-15		4.34
Dec-15		4.43
Average	rt - roma	
2015	\$	4.107
Summer	Ś	3.999
2015	7	3.777

Jan-15

Feb-15

Mar-15

Apr-15

May-15

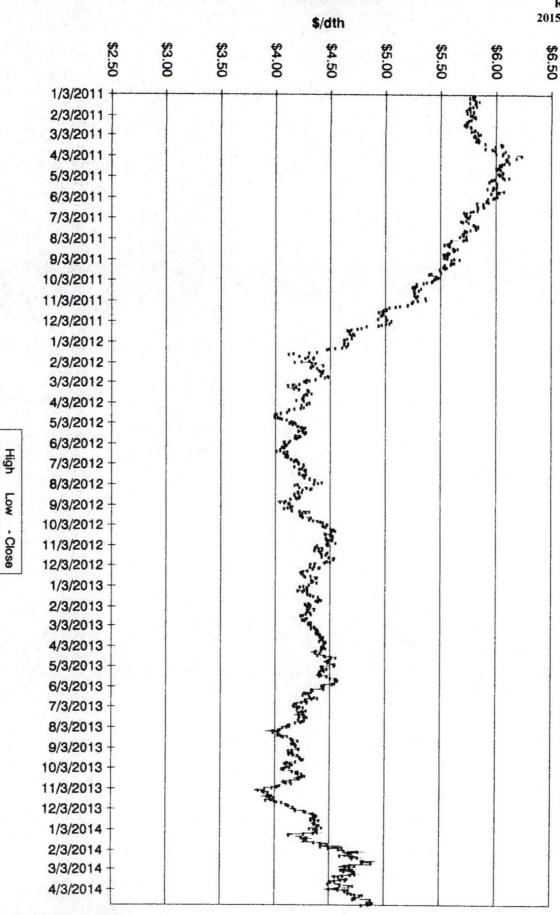
Jun-15

Jul-15

Aug-15

Winter 2014-	4 200
2015	\$ 4.208

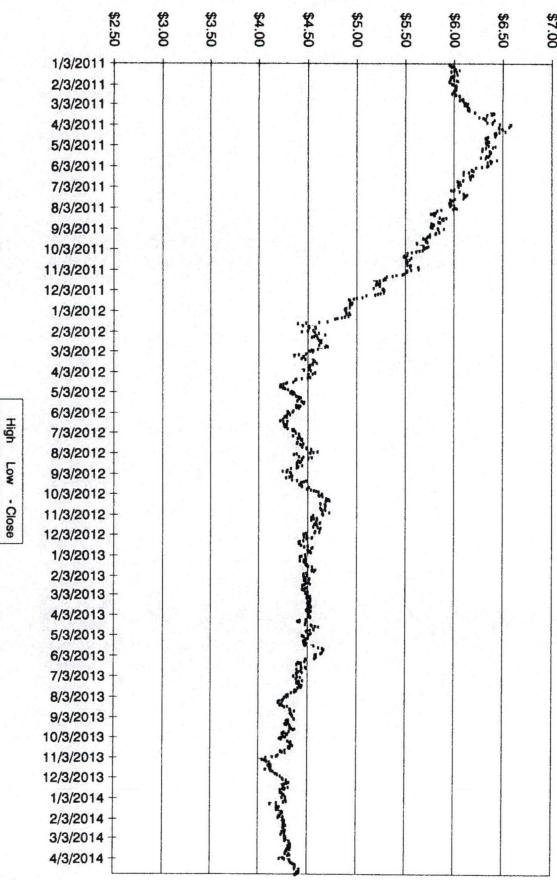




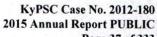
2/3/2014 3/3/2014 4/3/2014

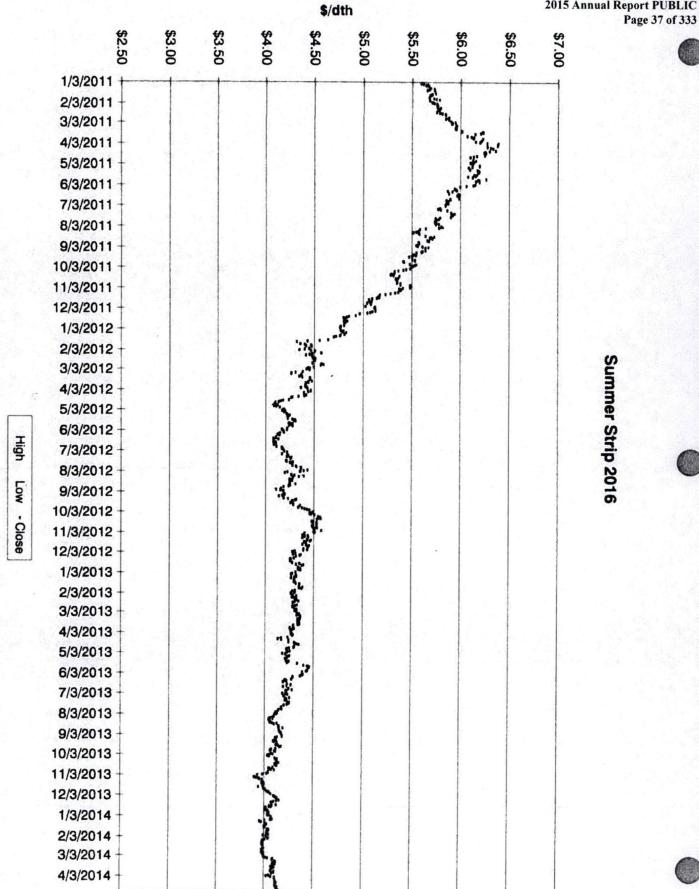
\$/dth

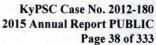


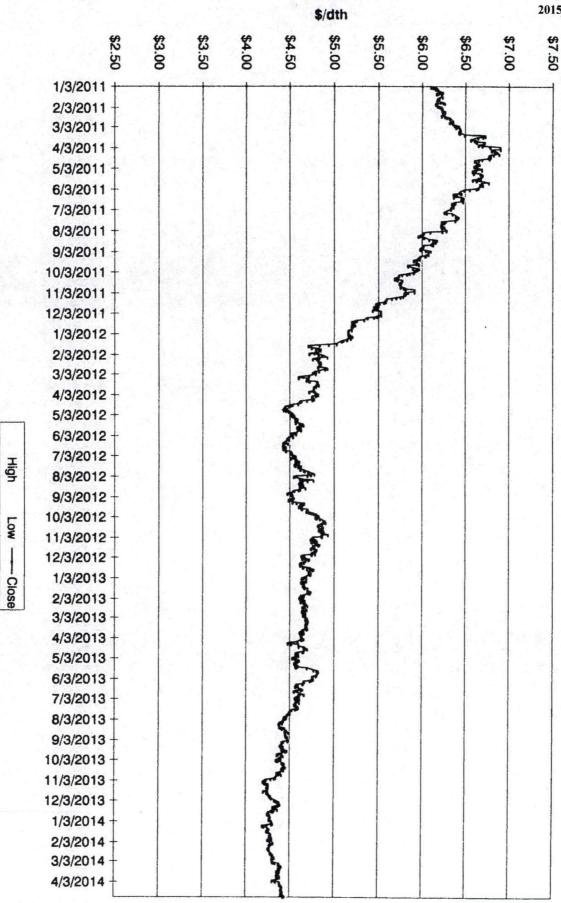


Winter Strip Nov15 - Mar16

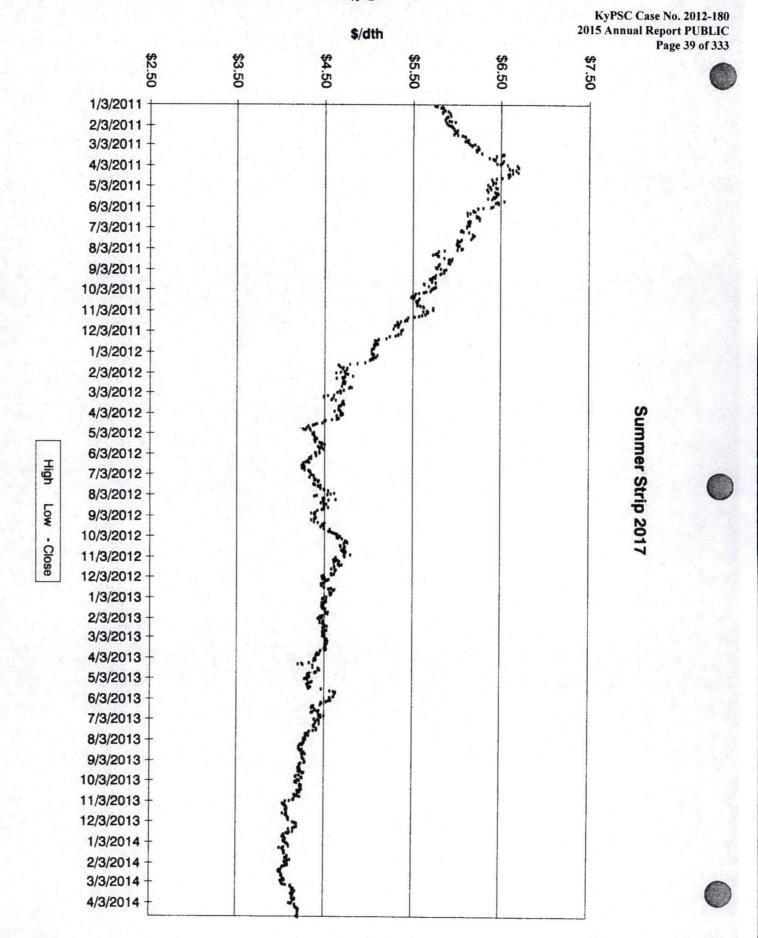








Winter Strip Nov16 - Mar17

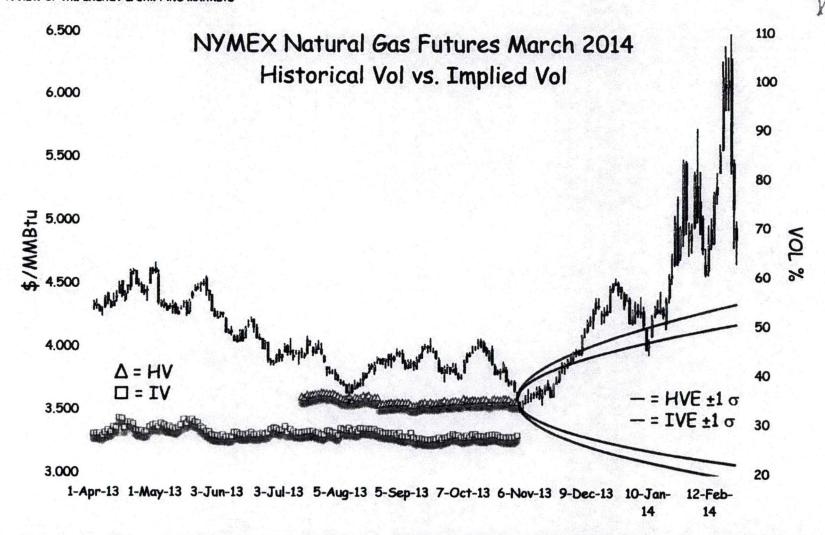


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### THE SCHORK REPORT

A VIEW OF THE ENERGY & SHIPPING MARKETS





Independent Statistics & Analysis

# U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

#### **Natural Gas**

U.S. Natural Gas Consumption.

ElA expects total natural gas consumption will average 72.1 Bcf per day (Bcf/d) in 2014, an increase of 0.7 Bcf/d from 2013. Increased residential, commercial, and industrial use offsets declines from the electric power sector, which are related to higher natural gas prices. In 2015, total natural gas consumption falls by 0.4 Bcf/d as a decline in residential and commercial consumption more than offsets consumption growth in the industrial and electric power sectors. ElA expects natural gas consumption in the power sector to increase to 22.8 Bcf/d in 2015 with the retirement of some coal plants.

#### U.S. Natural Gas Production and Trade.

EIA expects natural gas marketed production will grow by an average rate of 3.0% in 2014 and 1.5% in 2015. Rapid natural gas production growth in the Marcellus formation is contributing to falling natural gas forward prices in the Northeast, which often fall even with or below Henry Hub prices outside of peak winter demand months. Consequently, some drilling activity may move away from the Marcellus back to Gulf Coast plays such as the Haynesville and Barnett, where prices are closer to the Henry Hub spot price.

Liquefied natural gas (LNG) imports have declined over the past several years because higher prices in Europe and Asia are more attractive to sellers than the relatively low prices in the United States. Several companies are planning to build liquefaction capacity to export LNG from the United States. Cheniere Energy's Sabine Pass facility is planned to be the first to liquefy natural gas produced in the Lower 48 states for export. The facility has a total liquefaction capacity of 3 Bcf/d and is scheduled to come online in stages beginning in late 2015.

Growing domestic production over the past several years has displaced some pipeline imports from Canada, while exports to Mexico have increased. EIA projects net imports of 3.7 Bcf/d in 2014 and 3.0 Bcf/d in 2015, which would be the lowest level since 1987. Over the longer term, the EIA Annual Energy Outlook 2014 projects the United States will be a net exporter of natural gas beginning in 2018.

U.S. Natural Gas Inventories. Natural gas working inventories fell by 74 Bcf to 822 Bcf during the week ending March 28, 2014. Colder-than-normal temperatures and a few late-season winter storms during the month resulted in increased heating demand, prompting larger-than-normal

withdrawals. Stocks are now 878 Bcf less than last year at this time and 992 Bcf less than the five-year (2009-13) average for this time of year. Total stocks, as well as stocks in all three regions, are currently less than their five-year (2009-13) minimums.



#### **Crude Oil Prices**

Brent crude oil spot prices in March averaged \$107/bbl. This was the ninth consecutive month Brent crude oil spot prices averaged between \$107/bbl and \$112/bbl. The Brent crude oil price is projected to average \$105/bbl and \$101/bbl in 2014 and 2015, respectively.

The WTI crude oil spot price, which fell to an average of \$95/bbl in January 2014, increased to an average of \$101/bbl in February and March as a result of strong Midwestern refinery runs and the startup of the Marketlink pipeline moving crude from Cushing to the Gulf Coast. ElA expects that WTI crude oil prices will average \$96/bbl in 2014, \$1/bbl higher than in last month's STEO, and \$90/bbl during 2015. The discount of WTI crude oil to Brent crude oil, which averaged more than \$13/bbl from November 2013 through January 2014, fell to an average of nearly \$7/bbl in March 2014. ElA expects the discount of WTI crude oil to Brent crude oil to grow in the coming months to an average \$9/bbl in 2014 and \$11/bbl in 2015, reflecting the economics of transporting and processing the growing production of light sweet crude oil in U.S. and Canadian refineries.

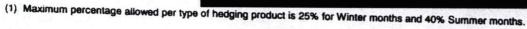
#### Gas Resources Hedging Program Market Indicators Summary May 28, 2014

	Price	Term	Comments	Page
Weather	Pressure			Ref
Long Term Forecast (Jun 14Aug 14)	† <b>.</b>	Long	NOAA predicting above average temperatures for June 2014August 2014 for the southern portion of the CONUS as well as the East and West coasts. In addition in mid-May, Duke's Meteorology Internal Outlook for the Summer 2014 was updated. The report maintains that El Nino conditions are expected to develop by mid to late summer, which will lead to cooler and wetter than normal conditions overall for both the Midwest and Southeast.	12
Mid Term Forecast (30-60 days)	<b>+</b>	Long	June is predicted to be 4.3% colder than normal based on 10 year normals and July weather is predicted to be 9.2% colder than normal.	13
Short Term Forecast (6-10 days)	<b></b>	Short	Above normal temperatures over majority of CONUS early in the period. Normal temperatures moving from central portion of CONUS to the east later in the period.	14
Tropical Storm Activity	<b></b>	Short	NOAA predicts near-normal or below-normal 2014 Atlantic hurricane season. El Nino expected to develop and suppress the number and intensity of tropical cyclones.	
Storage Inventory	Meet Mu	V.39(2)		
EIA Weekly Storage Report	1	Long	Storage injections for the week ending May 16th were 106 Bcf. Storage levels are at 1.266 TCF which is 37.9% lower than last year and 42.7% lower than the 5 year average.	15
Industry Publications	115 7726	2 4 9 1 2 2		
PIRA Energy Group Winter 2014/15: Summer 2015: Summer 201	↑↓	Long	GAS PRICE SCORECARD: May 2014—October 2014 Gas Price Outlook "Bullish" based on fundamentals such as "Imports From Canada", "US Storage Levels", "Industrial Sector", and "Exports to Mexico".	16-17
Gas DailyStorage	1	Long	To reach analysts projection of 3.4 Tcf in storage, 89 Bcf/week needs to be injected. The 5-year weekly average injection is about 70 Bcf/week. If we have a winter like 2011 or 2012 then the 3.4 Tcf level is fine, however, if the winter is like 2013 inventories will be tight. People are focusing on production side not on the demand side. The notion that production growth will carry us through the winter is a risky one. According to Goldman Sachs, less coal-to-gas switching, removal of pipeline constraints, and strong production will allow US market to cope with historically low storage levels better than in the past.	18
Gas DailyMiscellaneous Information	† ļ	Long	There is a consensus that the gas market is in an over-supply situation. However, the amount is up for debate—some believe the oversupply is up to 3 Bct/d, Wells Fargo are of the opinion that it is 1 Bct/d. While production is up, demand is growing as well. According to BNP Paribas, storage levels unlikely to reach 3.4 Tcf. Based on current prices, winter prices at bargain-based levels. Nuclear power displacing some gas and coal generation this year. Industrial gas demand growing faster than many expected as shuttered facilities are brought back on line.	19-20
Sovernment Agencies	- FIL GAR	W 4 - 12		NATE:
Energy Information Administration Winter 2014/15: \$4.548 Summer 2015: \$4.199	1 +	Long	The projected Henry Hub natural gas spot price averages \$4.741/MMBtu for 2014 and \$4.336/MMBtu for 2015.	21
echnical Analysis	100	11/10世		
	<b>←→</b>		Closed at \$4.56	22
	++		Closed at \$4.11	23
	<b>←→</b>		Closed at \$4.36	24
	<del>++</del>		Closed at \$4.17	25
	-		Closed at \$4.49	26
Summer 2017 Strip Chart	<b>←→</b>	Short	Closed at \$4.30	27
DUST TO THE TOTAL OF THE TOTAL	Т		EIA projects total natural gas consumption will average 72.3 Bcf/d in	
	<b>+</b>	Sincury	2014, an increase of 1.3% from 2013, led by the industrial sector.  Total marketed production expected to increase by an average rate of 3%	28-29
Supply	-	Long	In 2014 and 1.8% in 2015.  Brent crude projected to average \$106 per barrel in 2014 and \$102 per	28-29
Oil Market	<b>→</b>	Long	barrel in 2015. EIA expects WTI crude to average \$96 per barrel in 2014 and \$102 per barrel in 2015.	29

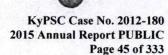
	and \$91 in 2015.
Meeting Minutes: 426 Anne Attendees: Chuck Whitloo	x Conference Room - 12:00 am k, Mike Brumback, Mitch Martin, Jeff Kern, Joachim Fischesser, Steve Niederbaumer
April 29, 2014 with contacted: storage inventory levels, F analysis on Summer and November 1, 2014 balanc week ending May 16, 201 reduced 3.4 Tcf level which	the transaction resulting from the April 28, 2014 Hedging Meeting. Fixed price deal for Duke Kentucky were completed on for the period November 1, 2014—March 31, 2015 Dth/d at a price of Three suppliers were being the lowest bilder. Discussed market fundamentals including weather, PIRA and EIA price forecasts, analysts price projections, economic influences on supply and demand and technical Winter Strip prices. Significant discussion took place around the low storage level and current estimates for the e estimated to be 3.4 Tcf. This level is well below the 3.6 Tcf to 3.8 Tcf levels in recent years. Storage injections for the 4 was 106 Bcf which was higher than expected. Storage injections will need to average 89 Bcf/week to reach the shill would be the highest weekly injection level since 2003. A decision was made not to hedge additional volumes at market for significant market movements.

#### **Duke Energy Kentucky Hedging Program - Current Position** November 2013 - October 2014 As of 05/22/14

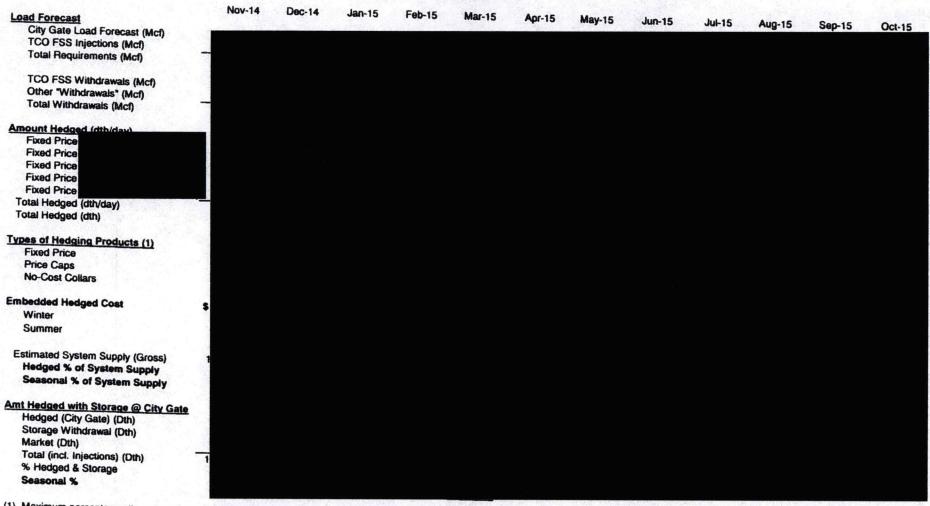
**Load Forecast** May-14 Jun-14 Jul-14 Aug-14 Sep-14 Oct-14 City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other "Withdrawals" (Mcf) Total Withdrawais (Mcf) Amount Hedged (dth/day) Fixed Price **Fixed Price Fixed Price** Fixed Price Fixed Price Fixed Price Total Hedged (ouvday) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %





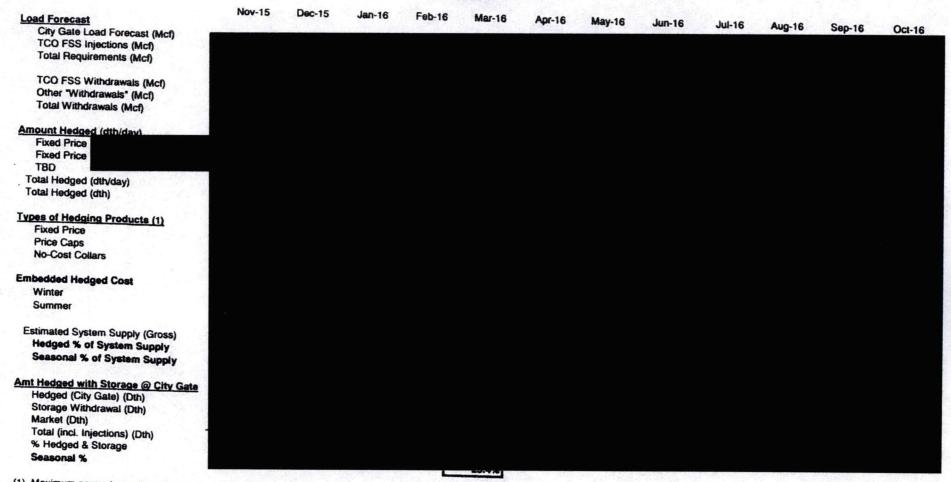


# Duke Energy Kentucky Hedging Program - Current Position November 2014 - October 2015 As of 05/22/14

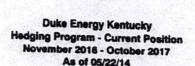


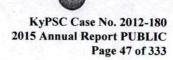
<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

#### Duke Energy Kentucky Hedging Program - Current Position November 2015 - October 2016 As of 05/22/14



<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



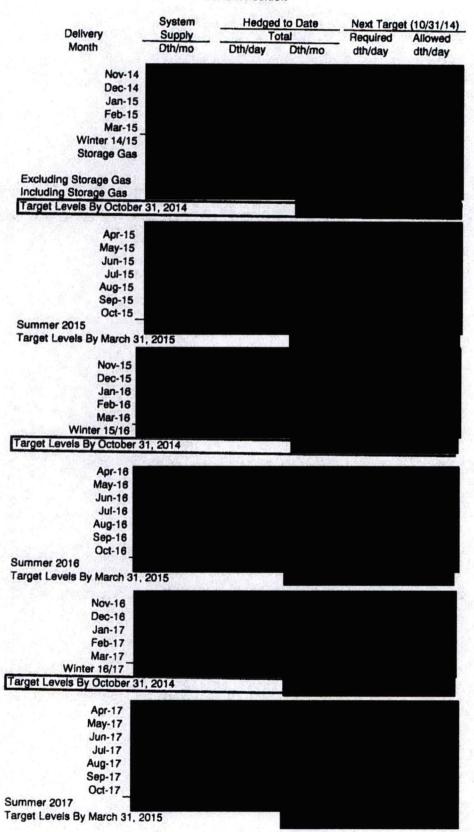


Nov-16 Dec-16 Feb-17 **Load Forecast** Mar-17 Apr-17 May-17 Jun-17 Jul-17 Aug-17 Sep-17 Oct-17 City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other "Withdrawals" (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBO TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

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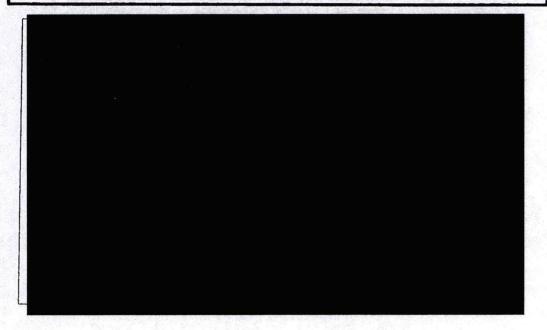
#### Duke Energy Kentucky Hedging Program Current Position



# COMPARISON OF HISTORIC SPOT & PROJECTED PRICES KyPSC Case No. 2012-180 2015 Annual Report PUBLIC Page 49 of 333

	1911	ic Prices: osing Price			
	5-yr. avg. (09/10-13/14)	Last Year (2013-2014)	PIRA 25-Apr-14	EIA 6-May-14	NYMEX 28-May-14
Jun	\$3.72	\$4.15		\$4.570	\$4.542
Jul	\$3.90	\$3.71		\$4.600	\$4.547
Aug	\$3.80	\$3.46		\$4.550	\$4.524
Sep	\$3.31	\$3.57		\$4.540	\$4.490
Oct	\$3.57	\$3.50		\$4.530	\$4.482
Nov	\$3.61	\$3.50		\$4.580	\$4.511
Dec	\$3.93	\$3.82		\$4.680	\$4.590
Jan	\$4.18	\$4.41		\$4.670	\$4.661
Feb	\$4.21	\$5.56		\$4.480	\$4.609
Mar	\$3.87	\$4.86		\$4.330	\$4.520
Apr	\$3.77	\$4.58		\$4.040	\$4.121
May	\$3.93	\$4.80		\$3.960	\$4.082
2 Month Avg	\$3.82	\$4.16		\$4.461	\$4.473
Summe Winter A	er Average Average			\$4.399 \$4.548	\$4.398 \$4.578

The same	Hedge	d Prices
	Ohio	Kentucky
\$		
\$		
\$		
\$		
\$		
\$		
\$ \$		
\$		
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\$		
\$		
\$		





## DarthSat 30-60 Day Outlook

Wednesday, May 21, 2014

Meteorologists: SS/PV/BH/RG

July 2014 Departure from 1981-2010 nomai (°F) WEATHER SERVICES

\$105,15 VEM :betabqU

\$105,15 YRM Updated: June 2014 (4°) ismon 0102-1881 mort erufaed

0.8-2 6.4- of 0.E-€.5- of 0.5- 6.1- of 0.1-

6.0 of 6.0-0.1+ of 0.1+ [18] e.2+ of 0.2+ [18] e.4+ of 0.5+

No Changes

Midwest and East Unseasonably Cool over the



the Niño signal. and South if the atmosphere reads more slowly and/or less forcefully to maintain aboves. The forecast carries a warm risk for the East, Midwest the West, the persistent drought may provide warm feedback and help conditions. While the same composite shows near-normal heights over eastern half of the nation, which would favor unseasonably cool year Miño analogs since 1950 shows a general trough pattern over the recent Niño summers of 2004 and 2009). A composite of all 16 firstbelow normal temperatures in July (as was the case in two of the most signal. For the East and Midwest, an ongoing El Niño typically spells expect that the atmosphere is more likely to be reading to the El Niño The July outlook is unchanged as, by this time in mid-summer, we

10Y Normal '04-13

"National Pop-Weighted CDDs

350.2

2.8CC

8.788

Jul PWCDD\*\* Forecasts

Jul 2014 Fest:

Change: 0

325.0

June 2013

Jul-2013

30Y Normal

OY Normal\*

"National Pop-Weighted CDDs

2.432

8.052

7.032



Jun-2013

30Y Normal

Confidence Still Low

Warmer Overall

10Y Normal\*

Et-40' IsmnoN YOF'



Change: +10

240.0

half of the month should atmospheric El Niño-like influences unfold (flip

early may progressively get replaced by cooler themes during the latter

mixed month appears to be in order, such that the warm influences

long these signals will continue to shape the pattern. At this stage a

match how the pattern has unfolded of late. While we anticipate the

Northeast saw a retraction of belows. Further, the core of the most

Changes were generally warmer for this update largely related to

expansion of aboves, while areas from the Midwest to Interior

persistence, though none were major. The Northwest saw an

carry forward into the early part of the month, confidence is low in how

recent run of warm influences such as the +SOI and -WPO signals to

anomalous heat out West shifted westward towards the coast to better



Jun 2014 Fcst:

.(MAA ni esh \ IOS ni

Jun PWCDD" Forecasts

Final 60 Day Outlook

Tel OS VEM

Current verif + forecast (6/1-5/31)

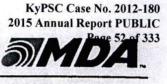
1950. The 126 GWHDDs would also rank as 12th warmest since 1950. would total 129 PWCDDs, warmer than the 10-year normal and 12th warmest since em Texas. If the current forecast out to the rest of the month were to verify, May west and East or the West Coast and were too warm in the Southwest and southon the idea of a cooler north-central US, but we weren't warm enough in the Midmore limited to the northern Plains/Rockles and southern Texas and widespread aboves in the Midwest and East and especially the West Coast. Our forecasts hit The forecast has warmed notably since this time last week with belows weaker and

©2014 [029000000007.pdf-Version 2.3] www.mdaus.com Tel 240-833-8300 Fax 240-833-8301 MDA Information Systems LLC 820 West Diamond Ave, Suite 300, Gaithersburg, MD 20878

### EarthSat 6-10 Day Forecast—Detailed

Wednesday, May 28, 2014

Meteorologist: PV/AC



**WEATHER SERVICES** 

#### Day 6: Monday, Jun 2

Previous Forecast:



Forecast Confidence: 8/10



#### Continued Warmth Spans South & Interior East

#### Onset Of Period Cool Along East Coast

Confidence falls slightly in today's outlook, stemming from volatility issues as well an increase in some model disagreement. Nevertheless the forecast continues to call for plenty of warmth across the Interior East and the South back into the central US during the early half of the period. Cooler temperatures aim to dive into the Mid-Continent and the Upper Midwest during the mid to late period behind a weak cold front, but only a marginal cool down occurs across these areas. The West gains abundant warmth during the second half of the period where much aboves exist over the Interior West to parts of Cali, though this outcome carries some cooler risks along the coast, especially the Northwest coast.

#### Day 7: Tuesday, Jun 3

Previous Forecast:



Forecast Confidence: 8/10



#### Day 8: Wednesday, Jun 4

Previous Forecast:



Forecast Confidence: 8/10

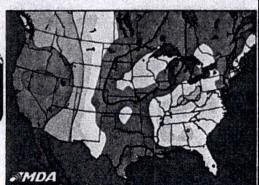


#### Day 9: Thursday, Jun 5

Previous Forecast:



Forecast Confidence: 7/10



#### Day 10: Friday, Jun 6

Previous Forecast:

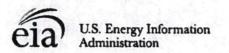


Forecast Confidence: 7/10



50-15 -8 5 -5 8 -3 -2 -1 0°F +1 -2 -3 A +5 A +8 MA+15 SA

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#### Weekly Natural Gas Storage Report

for week ending May 16, 2014 | Released: May 22, 2014 at 10:30 a.m. | Next Release: May 29, 2014

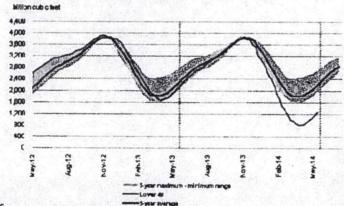
Summary text CSV JSNWorking gas in underground storage, lower 48 states

					Historical Comparisons			
		billion	Stocks cubic feet (Bcf)		ear ago 5/16/13)	5-Year average (2009-2013)		
Region	05/16/14	05/09/14	net change	Implied flow	(Bcf)	% change	(Bcf)	% change
East	522	457	65	65	850	-38.6	971	-46.2
West	231	219	12	12	366	-38.9	348	-33.2
Producing	513	484	29	29	823	-37.7	892	-42.5
Salt	140	126	14	14	237	-40.9	188	-25.5
Nonsait	373	358	15	15	586	-38.3	704	-47.0
Total	1,266	1,180	108	106	2,040	-37.9	2,209	-42.7

#### Summary

Working gas in storage was 1,266 Bcf as of Friday, May 18, 2014, according to EIA estimates. This represents a net increase of 106 Bcf from the previous week. Stocks were 774 Bcf less than last year at this time and 943 Bcf below the 5-year average of 2,209 Bcf. In the East Region, stocks were 449 Bcf below the 5-year average following net injections of 65 Bcf. Stocks in the Producing Region were 379 Bcf below the 5-year average of 892 Bcf after a net injection of 29 Bcf. Stocks in the Wast Region were 115 Bcf below the 5-year average after a net addition of 12 Bcf. At 1,266 Bcf, total working gas is below the 5-year introducing transp.

#### Working gas in underground storage compared with the 5-year maximum and minimum

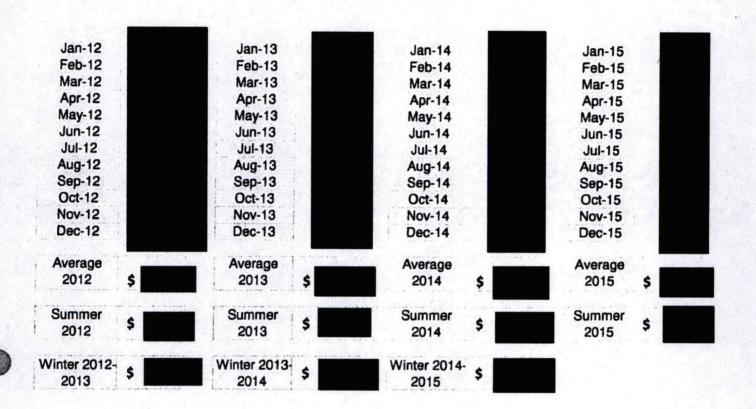


Cla Scures: U.S. Energy Information Adm nistration

Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2009 through 2013.

Source: Form EIA-912. "Weekly Underground Natural Gas Storage Report," The dashed vertical lines indicate current and year-ago weekly periods.

# PIRA North American Gas Price Overview Per MMBTU May 27, 2014 Release

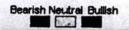


North American Gas Forecast Monthly

May 27, 2014

NATURAL GAS

U.S. GAS PRICE SCORECARD: MAY 2014 - OCTOBER 2014



### **Storage**

### Strong Injection Trims Deficit; Concerns Linger—May 23, 2014

An injection of 106 Bcf boosted inventories but storage concerns linger. The injection "marks another solid step toward getting back into the 3.3—3.4 Tcf range by October." In order to reach 3.4 Tcf by the end of the injection season, the market needs to inject another 2.134 Tcf, of 88.9 Bcf/week on average.

"If we have a winter like 2011 or 2012, then 3.4 Tcf is fine. But if we have one like last year it will be tight, according to IAF Advisors. What amazes me is that production is rising, absolutely, but so is every demand sector that benefits from low-cost gas—fertilizer, ethanol and petchem plants, housing, they're all growing. People are focusing completely on the production side not what's on the other."

"I think the notion that production growth will carry us through the winter is a risky one according to Bentek. We withdrew more than 3 Tcf out of the ground this past winter, and although it's unlikely we'll do that again, it's probably a good idea to a least prepare for the possibility. Bentek expects robust production growth by the end of 2014, but that doesn't necessarily mean the new comfortable level of storage is below 3.0 Tcf by the end of the injection season."

# Market Better Able to Handle Low Storage Stocks Than in Past—May 19, 2014

According to Goldman Sachs, less coal-to-gas switching, the removal of pipeline constraints in key regions and continued strong production will allow the US gas market to cope with historically low storage levels better than in the past. Due to shale driven supply, lower storage inventory than normal will be needed to serve the market as production can take up the slack.

Goldman Sachs raised their 2015 price estimate for gas to \$4.25/MMBtu, up 25 cents, as summer prices will unlikely trade below \$4.50/MMBtu consistently to "disincentivise any coal-to-gas switching in order to rebuild to 3.4 Tcf during the summer."

"But despite gas trading near or above \$4.50/MMBtu, which was expected to encourage producers to refocus on dry gas drilling—we have not seen gas rigs pick up year to date as producers with both oil and gas assets have continued to favor oil drilling."

### **Miscellaneous Information**

# Demand, Supply Uncertainties Continue to Weigh on Market—May 27, 2014

With 27 weeks left in the injection season, weekly injections need to average about 97 Bcf per week to hit the 5-year 3.8 Tcf level. The 5-year weekly average from end of May to November 1<sup>st</sup> is about 70 Bcf.

According to Wells Fargo, there is a consensus that the gas market is in a weathernormalized over-supply situation, however, the over-supply amount is up for debate.

"Some analysts believe the oversupply amounts to be about 3 Bcf/d, while Wells Fargo is currently showing production surplus at about 1 Bcf/d. If we continue this season at +3 Bcf/d, storage would end the year at 260 Bcf under the 5-year average. That would put gas prices at about \$3.60/MMBtu. If the market is only +1 Bcf/d oversupplied, then we could close the year at 700 Bcf below the 5-year storage average, and price would be more like \$4.10/MMBtu."

BNP Paribas believes while production is up demand is growing as well, particularly in the power generation sector. According to Paribas, storage levels are unlikely to reach the 3.4 Tcf level at the end of October because of higher gas demand from new gas plants coming online. With the winter delivered prices now trading within range of their three-month low and given our end of injection season storage estimate, winter gas delivery is currently trading at "bargain-basement levels."

### Nuclear Power Displacing Some Gas, Coal Generation This Year— May 19, 2014

The amount of power generated by nuclear units this year is ahead of last year and is poised to remain ahead for the rest of 2014, displacing some gas and coal-fired generation.

If natural gas were the only fuel displaced, gas demand losses would be around 500,000 Mcf/d in May and peak a 1 Bcf in June. On average, from May to December 2014, higher nuclear generation should dampen gas demand by 0.61 Bcf/day year-over-year.

# Marcellus Production Has Interstate Gas Pipeline 'Retooling'--May 14, 2014

Rapid growth in production from the Marcellus Shale has prompted a different approach by interstate pipelines, with smaller, more targeted expansion projects instead of longhaul pipes.

"The Marcellus is at the epicenter of the change in gas flows. The jump in production has been sudden and huge, surging from 1.2 Bcf/d in 2007 to about 14.8 Bcf currently, and expectations are that this could approach 23 to 25 Bcf by the end of the decade."

That has led large companies to pursue smaller-scale expansions to help reduce bottlenecks out of Marcellus. Most current projects cost in the tens to hundreds of millions of dollars unlike the billion-plus dollar jobs. According to Moody's, these projects involve adding compression and looping to existing lines and should entail limited execution risk and time to undertake.

# Industrial Gas Demand Growing Faster Than Many Expected—May 1, 2014

According to Barclays Bank, industrial demand is likely to accelerate faster than expected in the second half of the decade as shuttered manufacturing facilities are brought back on line.

Industrial gas consumption grew by 713,000 Mcf/d in 2013, this has been largely the result of restarting mothballed facilities and expanding capacity at existing operational ones. "For 2015-17, our updated project lists suggests that natural gas use may rise by almost 3.2 Bcf/d once all projects targeting startup in that timeframe are fully ramped up bringing total industrial gas use to around 22 Bcf/d.

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# Energy Information Administration Henry Hub Pricing Per MMbtu May 6, 2014 Release



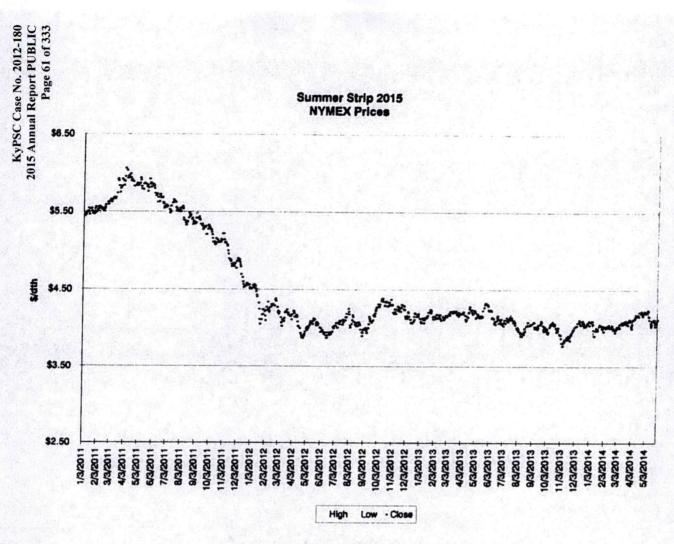
Jan-12		2.67	Jan-13		3.33	Jan-14	4.71	Jan-15		4.67
Feb-12	i de	2.50	Feb-13		3.33	Feb-14	6.00	Feb-15		4.48
Mar-12		2.18	Mar-13		3.81	Mar-14	4.90	Mar-15		4.33
Apr-12		1.95	Apr-13		4.17	Apr-14	4.66	Apr-15		4.04
May-12		2.43	May-13		4.04	May-14	4.57	May-15	1	3.96
Jun-12		2.46	Jun-13		3.83	Jun-14	4.57	Jun-15		4.14
Jul-12		2.95	Jul-13		3.62	Jul-14	4.60	Jul-15		4.26
Aug-12		2.84	Aug-13		3.43	Aug-14	4.55	Aug-15		4.29
Sep-12		2.85	Sep-13		3.62	Sep-14	4.54	Sep-15	1	4.29
Oct-12		3.32	Oct-13		3.68	Oct-14	4.53	Oct-15	þ	4.41
Nov-12		3.54	Nov-13		3.64	Nov-14	4.58	Nov-15	6	4.52
Dec-12		3.34	Dec-13		4.24	Dec-14	4.68	Dec-15		4.64
Average			Average				 	Average	ļ	
2012	\$	2.753	2013	\$	3.728	Average 2014	\$ 4.741	2015	\$	4.336
Summer 2012	\$	2.686	Summer 2013	\$	3.770	Summer 2014	\$ 4.574	Summer 2015	\$	4.199
Winter 2012-	4	3.470	Winter 2013-	٠	4 608	Winter 2014-	A 5A8			

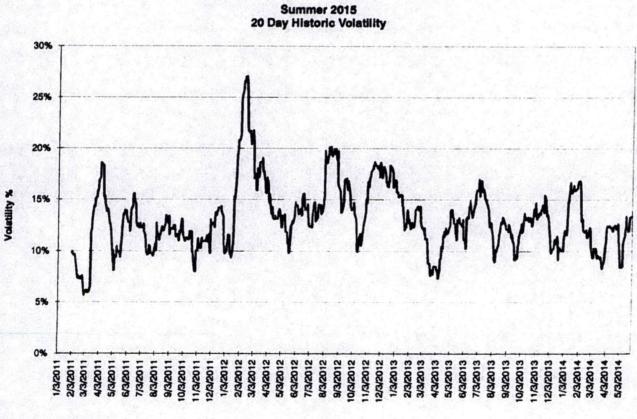
Volatility %

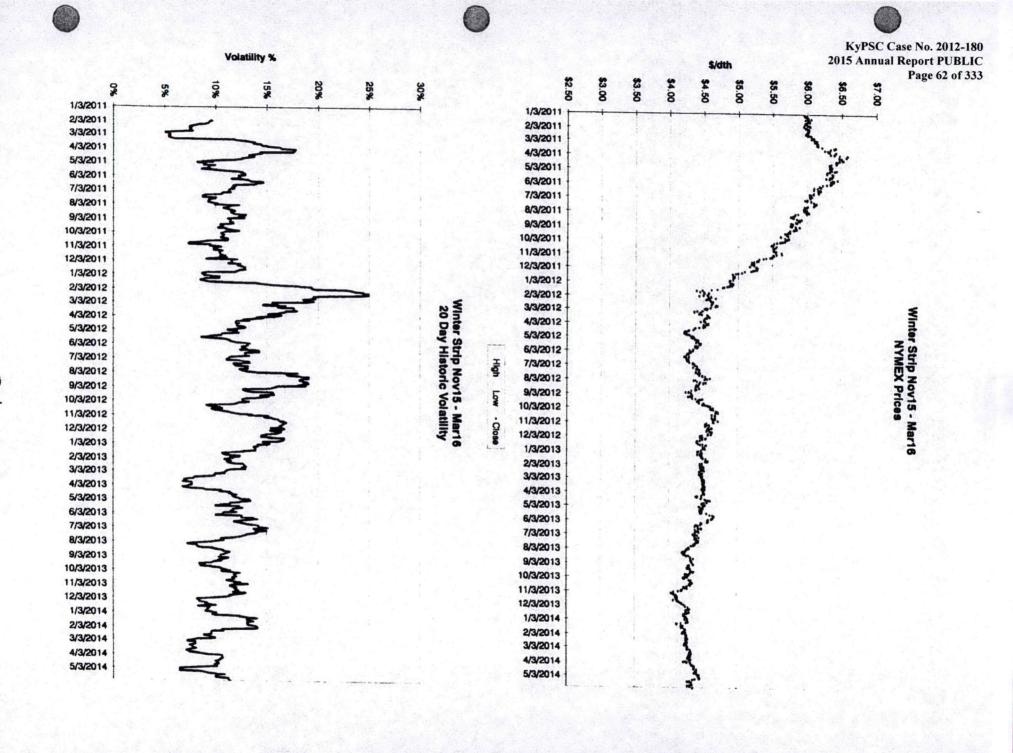
KyPSC Case No. 2012-180

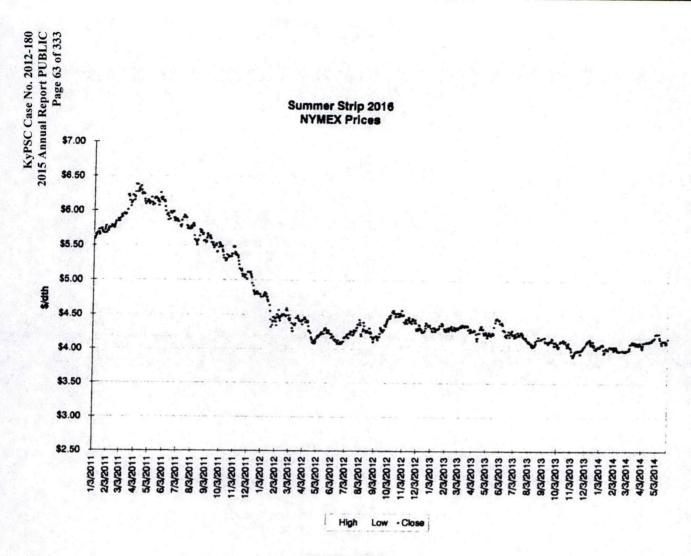
2015 Annual Report PUBLIC

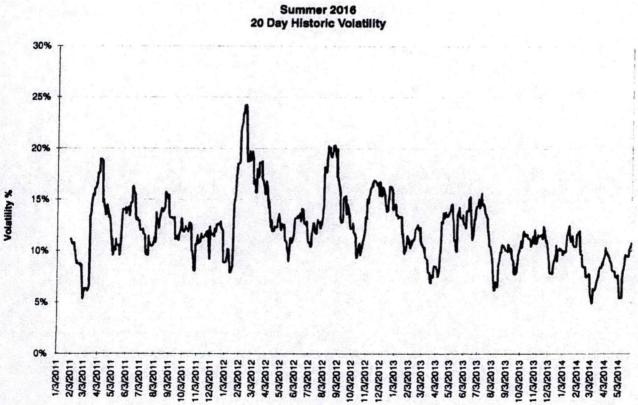
S/dth

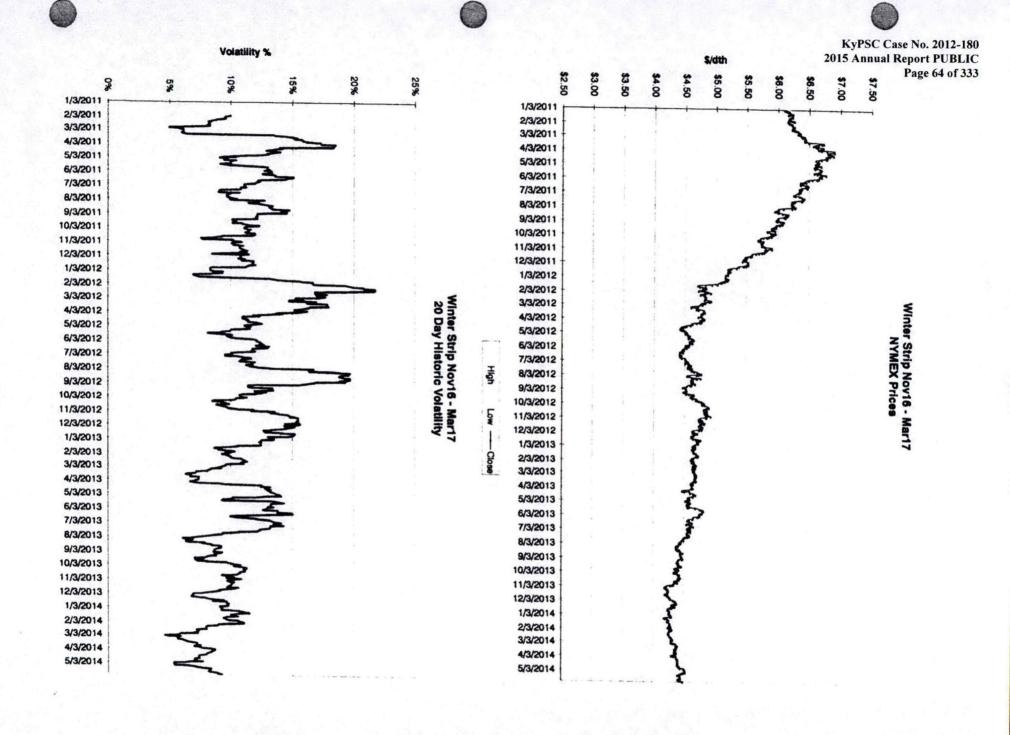


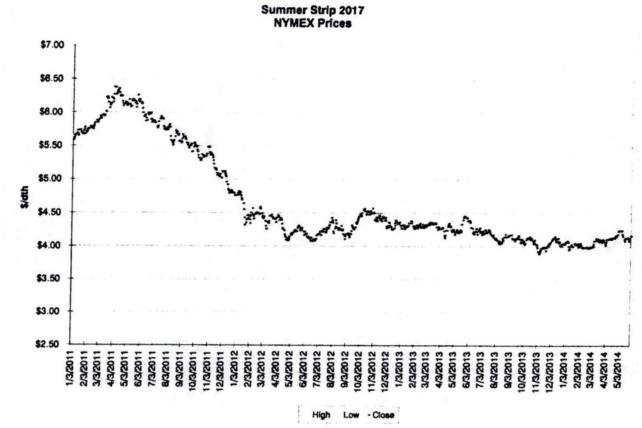


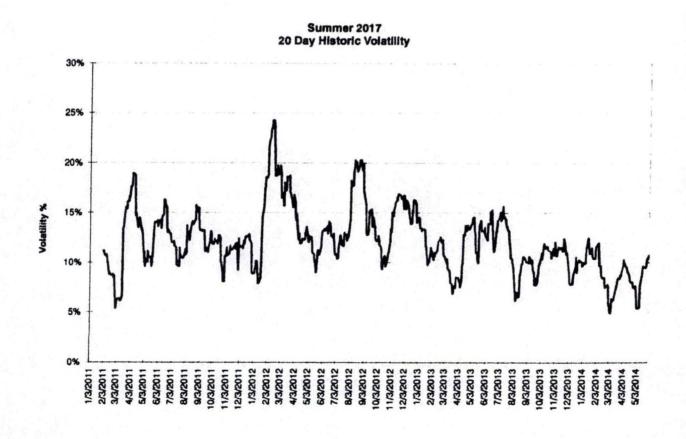














Independent Statistics & Analysis

# U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

#### **Natural Gas**

U.S. Natural Gas Consumption.

EIA expects total natural gas consumption will average 72.3 billion cubic feet per day (Bcf/d) in 2014, an increase of 1.3% from 2013, led by the industrial sector. In 2015, total natural gas consumption falls by 0.1 Bcf/d as a return to near-normal winter weather contributes to lower residential and commercial consumption. Higher natural gas prices this year contribute to a 0.4% decline in natural gas consumption in the power sector to 22.2 Bcf/d in 2014. EIA expects natural gas consumption in the power sector to increase to 23.1 Bcf/d in 2015 with the retirement of some coal plants.

#### U.S. Natural Gas Production and Trade.

EIA expects natural gas marketed production will grow by an average rate of 3.0% in 2014 and 1.8% in 2015. Rapid natural gas production growth in the Marcellus formation is contributing to falling natural gas forward prices in the Northeast, which often fall even with or below Henry Hub prices outside of peak winter demand months. Consequently, some drilling activity may move away from the Marcellus back to Gulf Coast plays such as the Haynesville and Barnett, where prices are closer to the Henry Hub spot price.

Liquefied natural gas (LNG) imports have declined over the past several years because higher prices in Europe and Asia are more attractive to sellers than the relatively low prices in the United States. Several companies are planning to build liquefaction capacity to export LNG from the United States. Cheniere Energy's Sabine Pass facility is expected to be the first to liquefy natural gas produced in the Lower 48 states for export. The facility has a total liquefaction capacity of 3 Bcf/d and is scheduled to come online in stages beginning in late 2015.

Growing domestic production over the past several years has displaced some pipeline imports from Canada, while exports to Mexico have increased. <u>EIA projects net imports of 3.7 Bcf/d in 2014 and 3.1 Bcf/d in 2015</u>, which would be the lowest level since 1987. Over the longer term, the EIA Annual Energy Outlook 2014 projects the United States will be a net exporter of natural gas beginning in 2018.

#### Natural Gas Inventories.

Natural gas working inventories increased by 159 Bcf over the last four weeks to reach 981 Bcf on April 25, which is 790 Bcf lower than the same time last year and 984 Bcf lower than the previous 5-year (2009-2013) average. The injection season has started somewhat slowly, but EIA expects injections will

pick up over the summer to end October at just over 3,400 Bcf. EIA projects the rate of injections between April 25 and the end of October will average about 90 Bcf per week, which is 20 Bcf greater than the average weekly injection during the past five years.



#### **Crude Oil Prices**

North Sea Brent crude oil spot prices averaged \$108/bbl in April. This was the 10th consecutive month in which average Brent crude oil spot prices fell within a relatively narrow range of \$107/bbl to \$112/bbl. The forecast Brent crude oil price averages \$106/bbl and \$102/bbl in 2014 and 2015, respectively, both \$1/bbl higher than in last month's STEO.

The January 2014 startup of TransCanada's Marketlink pipeline, moving crude from Cushing to the Gulf Coast, and strong refinery runs contributed to an increase in the WTI crude oil spot price from an average of \$94/bbl in January to \$102/bbl in April. The discount of WTI crude oil to Brent crude oil, which averaged more than \$13/bbl from November 2013 through January 2014, fell to an average of less than \$6/bbl in April. EIA expects the discount of WTI crude oil to Brent crude oil to grow in the coming months to an average \$10/bbl in 2014 and \$11/bbl in 2015, reflecting the economics of transporting and processing the growing production of high API gravity (very light) sweet crude oil in the United States.

#### Gas Resources Hedging Program Market Indicators Summary June 26, 2014

	Price Pressure	Term	Comments	Page
Weather	Ti i descui e			T Hel
Long Term Forecast (Jul 14Sep 14)	t	Long	NOAA predicting above average temperatures for July 2014September 2014 for the southern portion of the CONUS as well as the East and West coasts. In addition in mid-June, Duke's Meteorology Internal Outlook for the Summer 2014 was updated. The report indicates some sightly warmer changes to the forecast across the Eastern and Southern CONUS for both July and August.	
Mid Term Forecast (30-60 days)	+	Long	July is predicted to be 2.2% colder than normal based on 10 year normals and August weather is predicted to be 3.8% colder than normal.	14
Short Term Forecast (6-10 days)	<b>←→</b>	Short	Above normal temperatures across the Norteast and Mid-Atlantic states. Below normal temperatures in the Midwest. Normal temperatures moving from central portion of CONUS to the east later in the period.	15
Storage Inventory				E 18
EIA Weekly Storage Report	1	Long	Storage injections for the week ending June 20th were 110 Bcf. Storage levels are at 1.829 TCF which is 27.4% lower than last year and 31.0% lower than the 5 year average.	16
Industry Publications				
PIRA Energy Group Winter 2014/15: Summer 2015:	1 1	Long	GAS PRICE SCORECARD: May 2014October 2014 Gas Price Outlook "Bullish" based on fundamentals such as "Imports From Canada", "US Storage Levels", "Industrial Sector", and "Exports to Mexico".	17-1
Gas DailyPricing	-	Long	KPMG survey of energy executives: 72% indicated prices above \$3.00/MMBtu for next 12 months, about 50% say prices between \$3.75 and \$4.50/MMBtu. Private forecaster WSI has forecasted below normal temperatures for July and August in North East, North Central and Southwest. ESAI indicates that mild temperatures should result in soft prices in Northeast and Midwest, mild temperatures should help gas inventory close the deficit. Citing a slow refill, Moody's raised gas price forecast 13% for the remainder of 2014 to \$4.50/MMBtu. Moody's also raised their 2015 price up 6% to \$4.25/MMBtu, longer term price forecast is \$4.00.	19-2
Gas Daily and NextEraStorage	†	Long	Triple-digit injections for a record 7th straight week. Unless the weather is unusually hot in July and August storage on pace to meet 3.4 Tcf expectation. Lack of higher refill rate is telling us: market is tighter than last year despite higher production levels; market may not be concerned that storage inventory will be below average heading into winter. Conversations with market participants shows that there is a growing level of comfort with 3.6 Tcf in storage. Storage could reach 3.85 Tcf level but would require gas prices above \$5/MMBtu to motivate enough coal plant output.	21-2
Government Agencies				
Energy Information Administration Winter 2014/15: \$4.640 Summer 2015: \$4.394	1 1	Long	The projected Henry Hub natural gas spot price averages \$4.743/MMBtu for 2014 and \$4.490/MMBtu for 2015.	23
Fechnical Analysis Winter 2014-15 Strip Chart	<b>→</b>	Short	Closed at \$4.64	04
Summer 2015 Strip Chart	<b>→</b>		Closed at \$4.14	25
Winter 2015-16 Strip Chart	++		Closed at \$4.37	26
Summer 2016 Strip Chart	<b>+</b>		Closed at \$4.18	27
Winter 2016-17 Strip Chart	++		Closed at \$4.49	28
Summer 2017 Strip Chart	-	-	Closed at \$4.33	29
Economy				TE AN
Demand	<b>+</b>	Long	EIA projects total natural gas consumption will average 72.5 Bcf/d in 2014, an increase of 1.7% from 2013, led by the industrial sector. 2015 gas consumption falls by 0.2 Bcf/d based on near-normal winter weather.	30
Supply	++	Long	Total marketed production expected to increase by an average rate of 4% in 2014 and 1.3% in 2015.	30-31
Oil Market	<b>←→</b>	Long	Brent crude projected to average \$108 per barrel in 2014 and \$102 per barrel in 2015.	31

#### Meeting Minutes: 426 Annex Conference Room - 1:00 pm

Attendees: Chuck Whitlock, Mike Brumback, Jeff Kern, Steve Niederbaumer

Reviewed fundamentals such as weather (current to L/T forecasts), storage levels, industry publications, governmental agency, technical analysis and supply and demand fundamentals. Discussed the Kentucky Hedging Programs including the new page that graphically shows the current hedging position within the target range. Significant discussion took place regarding the current storage inventory levels, estimates of end-of-season storage and the weekly injection needed to reach certain storage milestones. A decision was made not to hedge additional volumes at this time.

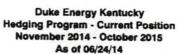
## Duke Energy Kentucky Hedging Program - Current Position November 2013 - October 2014 As of 06/24/14

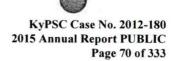
Nov-13 Dec-13 Jan-14 Feb-14 Mar-14 Anr-14 May-14 Load Forecast City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other "Withdrawals" (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) **Fixed Price** Fixed Price Fixed Price Fixed Price Fixed Price Fixed Price Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.









Nov-14 Dec-14 Jan-15 Feb-15 Mar-15 Apr-15 May-15 Jun-15 Jul-15 Aug-15 Sep-15 Oct-15 Load Forecast City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other "Withdrawais" (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Fixed Price Fixed Price Fixed Price Fixed Price ( Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

#### Duke Energy Kentucky Hedging Program - Current Position November 2015 - October 2016 As of 06/24/14

Dec-15 Jan-16 Feb-16 Mar-16 Apr-16 May-16 Jun-16 Jul-16 Aug-16 Sep-16 Oct-16 Load Forecast City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) **Total Requirements (Mcf)** TCO FSS Withdrawals (Mcf) Other "Withdrawals" (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Fixed Price TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawai (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %



<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



Seasonal %



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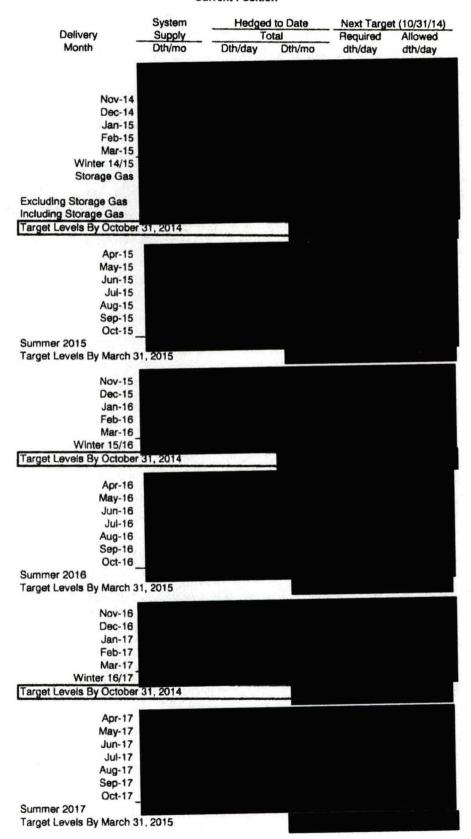
## Duke Energy Kentucky Hedging Program - Current Position November 2016 - October 2017 As of 06/24/14

Nov-16 Dec-16 Jan-17 Feb-17 Mar-17 Apr-17 May-17 Jun-17 Load Forecast Aug-17 Sep-17 Oct-17 City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other "Withdrawals" (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage

8

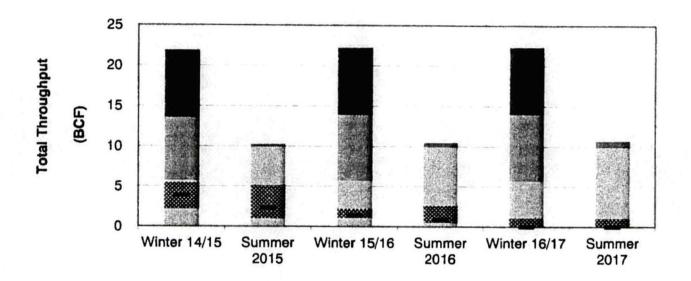
<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

#### Duke Energy Kentucky Hedging Program Current Position

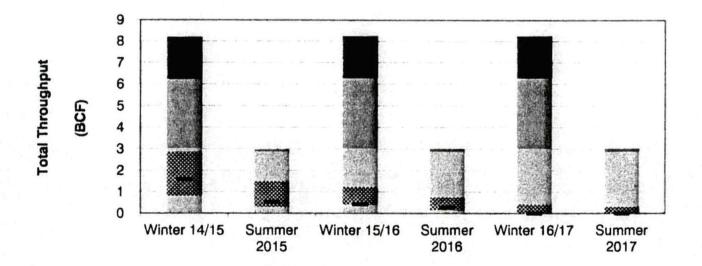


### Hedging Strategy Current Position - June 24, 2014

#### **Duke Energy Ohio**



#### **Duke Energy Kentucky**



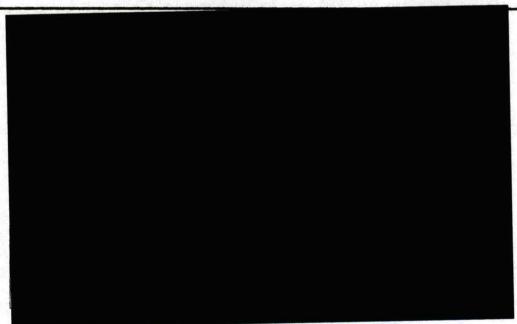
■ Target ■ Base ■ Swing ■ Storage - Hedged

## COMPARISON OF HISTORIC SPOT & PROJECTED PRICES TO CURRENT FUTURES PRICES

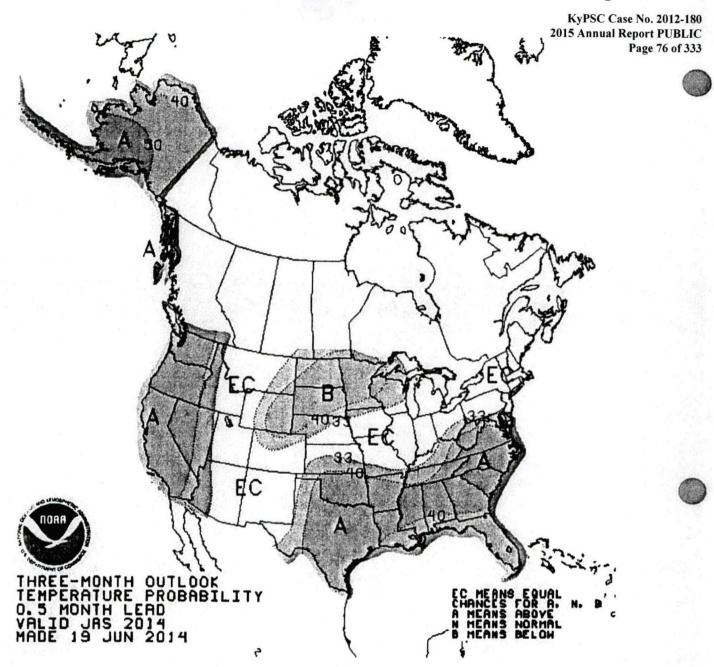
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	NYMEX CI				
	5-yr. avg. (09/10-13/14)	Last Year (2013-2014)	PIRA 23-Jun-14	EIA 10-Jun-14	NYMEX 26-Jun-14
Jul	\$3.90	\$3.71		\$4.590	\$4.575
Aug	\$3.80	\$3.46		\$4.520	\$4.583
Sep	\$3.31	\$3.57		\$4.520	\$4.557
Oct	\$3.57	\$3.50		\$4.530	\$4.553
Nov	\$3.61	\$3.50		\$4.600	\$4.584
Dec	\$3.93	\$3.82		\$4.730	\$4.649
Jan	\$4.18	\$4.41		\$4.760	\$4.716
Feb	\$4.21	\$5.56	7.52	\$4.620	\$4.665
Mar	\$3.87	\$4.86		\$4.490	\$4.565
Apr	\$3.77	\$4.58		\$4.220	\$4.135
May	\$3.93	\$4.80		\$4.130	\$4.107
Jun	\$3.94	\$4.62		\$4.320	\$4.128
Month Avg	\$3.83	\$4.20		\$4.503	\$4.485
Summe Winter A	er Average			\$4.404 \$4.640	\$4.377 \$4.636

\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Ohio	d Prices Kentucky
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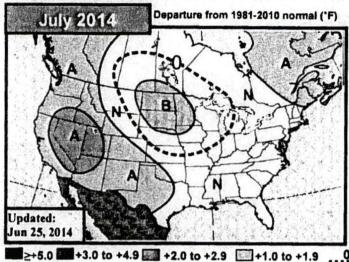
## EarthSat 30-60 Day Outlook

MDA

Wednesday, June 25, 2014

Meteorologists: PV/BH/SS

WEATHER SERVICES



Updated:
Juni 25, 2014

Departure from 1981-2010 normal (°F)

\_\_\_\_ -0.9 to 0.9



Hotter Interior West

Warmer in the East

The July outlook takes on more warm changes this week. Below normal coverage over the mid-continent is reduced again today with the cooler than normal conditions removed from the eastern Ohio Valley into the East. The West shifts a bit hotter as well. With a lack of notable cool influences on the pattern the outlook favors a look more similar to what has been observed in June. This warm-tilted variability is favored to persist at least into the first week or two of July, where a round of early month heat is expected in the East and cool air remains mostly absent elsewhere. Model guidance continues to show a hotter threat lingering over the East where marginal ridging could persist. This model-based threat, along with the potential for the warm-leaning pattern of June to continue, suggests the final July number could lie closer to the 10 year normal, similar to how June is set to finish.

Jul PWCDD\*\* Forecasts

\*10Y Normal '04-13

Jul 2014 Fcst:

350.0

10Y Normal\* 357.8 30Y Normal 338.2 Jul-2013 350.2

Change: +10

"National Pop-Weighted CDDs



More Limited Cool Anomalies in Midwest

Slightly Warmer West

The August outlook continues to trend warmer this week with belows now more limited to the northwestern Midwest and the northem Plains. Warm trends were also seen in the Mid-Atlantic with the zero(0) line edging northward while aboves were slightly more expansive in the West. The warm changes come with increased uncertainty regarding the strength and timing of the developing El Niño. El Niño conditions are still expected to eventually develop, but a recent slowdown in the warming of the tropical Pacific gives pause to the idea that significant impacts from El Niño would be seen by August. This uncertainty is also echoed in some of the model guidance which continues to show warmer, or hotter, threats across portions of the South and East. The greatest confidence still lies in the West where hot conditions are favored to persist.

Aug PWCDD\*\* Forecasts

\*10Y Normal '04-13

Aug 2014 Fcst:

315.0

10Y Normal\* 327.8 30Y Normal 311.8 Aug-2013 306.6

Change: +10

"National Pop-Weighted CDDs







Final 30 Day Outlook



Current verif + forecast (6)1-6/3

The forecast has cooled some since this time last week with aboves a little weaker in the East but a little stronger in the Midwest, while belows are stronger in the northern Rockies and heat is slightly weaker in California. Our forecasts generally hit on the idea of the heat in the West but missed out on the warmth in the Midwest and East. If the current forecast out to the end of the month verifies, June would total 250.2 PWCDDs, 11th warmest since 1950 but just slightly cooler than the 10Y normal (250.7) and 2nd coolest since 2008.



### EarthSat 6-10 Day Forecast—Detailed

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**WEATHER SERVICES** 

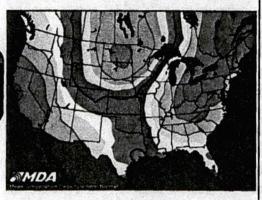
Thursday, June 26, 2014

Day 6: Tuesday, Jul 1

**Previous** Forecast:



**Forecast** Confidence: 8/10



#### Plenty Of Heat Early Across Northeast/Mid-Atlantic

Meteorologist: KT/AC

#### Cold Front Brings Belows To Midwest

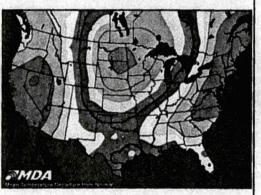
A cold front will advance through the Midwest during the early part of the period and will continue to filter in cooler temperatures in its wake. Temperatures have trended cooler with todays forecast, but significant cool air is still not expected for more than a day or so. There is a risk to the cooler side with this air mass though as the European operational model is most aggressive with this cooler air mass. Early in the period there will be heat across the Mid-Atlantic and Northeast, mostly in the form of moderate above normal anomalies. Isolated much aboves are possible within both areas, but the current forecast is hotter than most models. Meanwhile, the West holds onto the heat throughout most of the period.

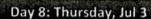
#### Day 7: Wednesday, Jul 2

**Previous** Forecast:



**Forecast** Confidence: 7/10





**Previous** Forecast:



**Forecast** Confidence: 6/10

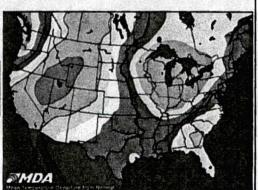


#### Day 9: Friday, Jul 4

**Previous** Forecast:



**Forecast** Confidence: 6/10



#### Day 10: Saturday, Jul 5

**Previous** Forecast:



**Forecast** Confidence: 6/10

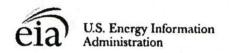


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MDA Information Systems LLC 820 West Diamond Ave. Suite 200, Gaithersburg, MD 20878 Tel 240-833-8300 Fax 240-833-8301 www.mdaus.com ©2014 [029000000102.pdf-Version 3.1]

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#### Weekly Natural Gas Storage Report

for week ending June 20, 2014 | Released: June 26, 2014 at 10:30 a.m. | Next Release: July 3, 2014

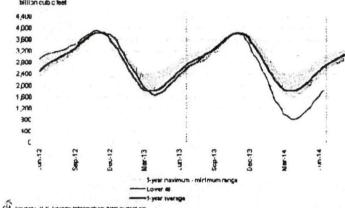
Summary text CSV JSNWorking gas in underground storage, lower 48 states

						Historical C	omparison	ns
		billion	Stocks cubic feet (Bcf)			er ago 3/20/13)		or average 09-2013)
Region	06/20/14	06/13/14	net change	implied flow	(Bcf)	% change	(Bcf)	% change
East	858	790	68	68	1,135	-24.4	1,240	-30.8
West	315	298	17	17	431	-26.9	415	-24.1
Producing	656	631	25	25	954	-31.2	996	-34.1
Salt	185	177	8	8	263	-29.7	208	-11.1
Nonsalt	472	455	17	17	691	-31.7	787	-40.0
Total	1,829	1,719	110	110	2,519	-27.4	2,651	-31.0

#### Summary

Working gas in storage was 1,829 Bcf as of Friday, June 20, 2014, according to EIA estimates. This represents a net increase of 110 Bcl from the previous week. Stocks were 890 Bcf less than last year at this time and 822 Bcf below the 5year average of 2,851 Bcf. In the East Region, stocks were 382 Bcf below the 5-year average following net injections of 68 Bcf. Stocks in the Producing Region were 340 Bcf below the 5-year average of 996 Bcf after a net injection of 25 Bcf. Stocks in the West Region were 100 Bcf below the 5-year average after a net addition of 17 Bcf. At 1,829 Bcf, total working gas is below the 5-year historical range,

#### Working gas in underground storage compared with the 5-year maximum and minimum



(18 Scurce: U.S. Energy Information Form nistration

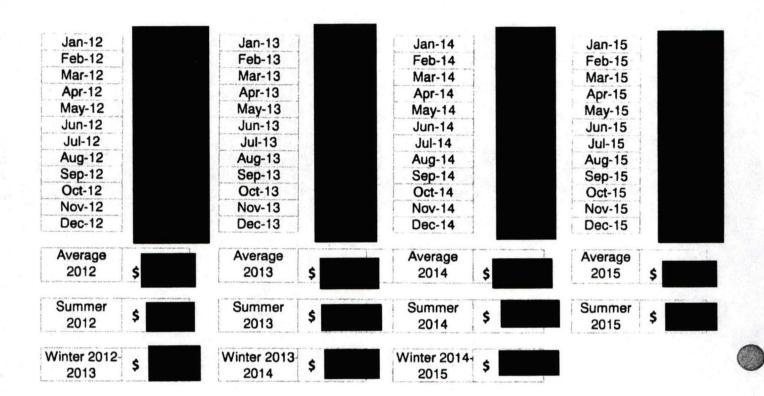
Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2009

Source: Form EIA-912. "Weekly Underground Natural Gas Storage Report." The dashed vertical fines indicate current and year-ago weekly periods.

# PIRA North American Gas Price Overview Per MMBTU June 23, 2014 Release

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North American Gas Forecast Monthly

June 23, 2014 NATURAL GAS

#### U.S. GAS PRICE SCORECARD: MAY 2014 - OCTOBER 2014

Bearish Neutral Bullish

18

2

#### **Pricing Issues**



#### Prices to Stay Above \$3/MMBtu: KPMG Poll—June 25, 2014

"Seventy-two percent of senior energy executives surveyed by accounting firm KPMG think natural gas prices will stay above \$3/MMBtu over the next 12 months, with almost half believing prices will range between \$3.75 and \$4.50/MMBtu.

#### Mild Summer in Key Regions to Pressure Gas Prices, Boost Storage-June 24,

Private forecaster WSI has forecasted below-normal temperatures in the Northeast, North Central and Southwest regions in July and August which will help keep pressure on natural gas prices and refill storage inventories depleted by a cold winter.

WSI also indicated above-normal temperatures are likely in the Southeast, Northwest and South Central regions as El Nino conditions continue to develop in the Pacific.

ESAI Power has assessed the potential energy market impacts of the WSI's forecasts. According to ESAI, outlooks will likely mean aggregate North American gas demand next month is expected to be below normal due to the cooler-than-normal conditions.

"These mild summer temperatures should result in relatively soft energy prices, particularly in the Northeast and Midwest markets. Natural gas prices in the Northeast and Midwest will continue to see significant discounts to Henry Hub due to mild weather demand and continued production growth from Marcellus Shale."

"ESAI said that continued mild temperatures in the Midwest should help gas inventories close the deficit to last year's storage levels. We expect generally mild temperatures across the Consuming East region this summer will allow natural-gas inventories to recover from the very large drawdown this past winter."

#### Moody's Raises 2014 Gas Price Assumption 13% to \$4.50/MMBtu—June 20, 2014

Citing a slow refill of gas storage, Moody's raised their gas price forecast 13% for the rest of 2014 to \$4.50/ MMBtu.

"Natural gas prices in North America will get a continued boost from a slow refill of underground storage following a severe winter. Prices will rise sharply if producers fail to fill storage to about the 3.5 Tcf during the refill season."



Moody's also raised its 2015 price 6% to \$4.25/MMBtu and left intact its long-term forecast of \$4.00/MMBtu.

"Natural gas prices in North America will rise eventually, with demand from new petrochemical plants and the start-up of facilities to liquidify and natural gas for export, but not until later this decade."

#### Storage

#### Refill Worries Linger Despite Another Large Build-June 20, 2014

The gas industry recorded triple-digit injections for a record 6<sup>th</sup> straight week. The deficit from last year fell to 706 Bcf or 29.1%, while the deficit to the 5-year average of 2.57 TCF dropped to 851 Bcf, or 33.1%.

"The fact that we are in the middle of June and are still experiencing injections above 100 Bcf is encouraging. Thus, unless the country experiences an unusually hot July and August or an abnormally early start to winter, we should be on pace to meet the 3.4 Tcf expectation." Some analysts are still concerned about whether growing summertime heat will curb refills down the road.

"Despite much of the hoopla surrounding the big injections of the past month or so, the US natural gas market still has a long way to go to rebuild itself to a comfortable level. Right now, the 3.4 Tcf target that many have for the end of October balance is still being threatened to the downside."

## NextEra Energy Newsletter—Natural Gas Storage Outlook: Is a Glass Half-Full Good Enough?—June 17, 2014

According to NextEra, the lack of a much higher refill pace may be telling us two things: first, that the market is much tighter than last year despite higher production levels—there simply may not be more gas for storage injections, and/or second, that the market may not be concerned that recent storage injections put the market on pace for a below-average storage inventory heading into winter.

NextEra indicates that their conversations with market participant, there is growing comfort with and end-of-October storage level closer to 3.6 Tcf. Yet, other's question whether the market will truly be content with such a deficit once we are closer to winter. History suggests that the market will continue to seek a storage level of between 3.6—3.8 Tcf heading into the winter, even if the current pace of injections is for a storage level in October well below this level.

NextEra estimates that the market is on pace to reach 3.45 Tcf at the end of October, which is a 370 Bcf deficit from last year. The market has historically moved prices higher on deficits at this level.

NextEra indicates that the market could achieve a storage level close to the historical norm of 3.85 Tcf, but this would require gas prices of over \$5/MMBtu to motivate

enough coal plant output. In addition, to get to the 3.6 Tcf inventory levels prices over \$5/MMBtu would be required according to NextEra.

## EIA See US Gas Storage Inventories Refilling to 3.42 Tcf by Heating Season—June 10, 2014

"The injection season began April somewhat slowly but has picked up in May, with injections over the last 4 weeks totaling 444 Bcf. EIA now expects gas in storage to reach 3.424 Tcf at the end of October, 392 Bcf below the same time last year but still a level most analysts consider ample to begin the heating season."

# Energy Information Administration Henry Hub Pricing Per MMbtu June 10, 2014 Release

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Summer 2012	\$	2.686	Summer 2013	\$	3.770	Summer 2014	\$ 4.567	Summer 2015	\$	4.394
Average 2012	\$	2.753	Average 2013	\$	3.728	Average 2014	\$ 4.743	Average 2015	\$	4.490
Dec-12	the same	3.34	Dec-13	-	4.24	Dec-14	4.73	Dec-15		4.58
Nov-12	1	3.54	Nov-13		3.64	Nov-14	4.60	Nov-15		4.67
Oct-12		3.32	Oct-13		3.68	Oct-14	4.53	Oct-15		4.61
Sep-12		2.85	Sep-13		3.62	Sep-14	4.52	Sep-15	1	4.50
Aug-12		2.84	Aug-13	Tax-	3.43	Aug-14	4.52	Aug-15		4.50
Jul-12	1	2.95	Jul-13	1	3.62	Jul-14	4.59	Jul-15		4.48
Jun-12		2.46	Jun-13		3.83	Jun-14	4.57	Jun-15	4	4.32
May-12		2.43	May-13	1	4.04	May-14	4.58	May-15		4.13
Apr-12		1.95	Apr-13		4.17	Apr-14	4.66	Apr-15	1	4.22
Mar-12	1	2.18	Mar-13		3.81	Mar-14	4.90	Mar-15	į.	4.49
Feb-12		2.50	Feb-13		3.33	Feb-14	6.00	Feb-15		4.62
Jan-12	1	2.67	Jan-13	1	3.33	Jan-14	4.71	Jan-15		4.76

4.698

Winter 2014-

2015

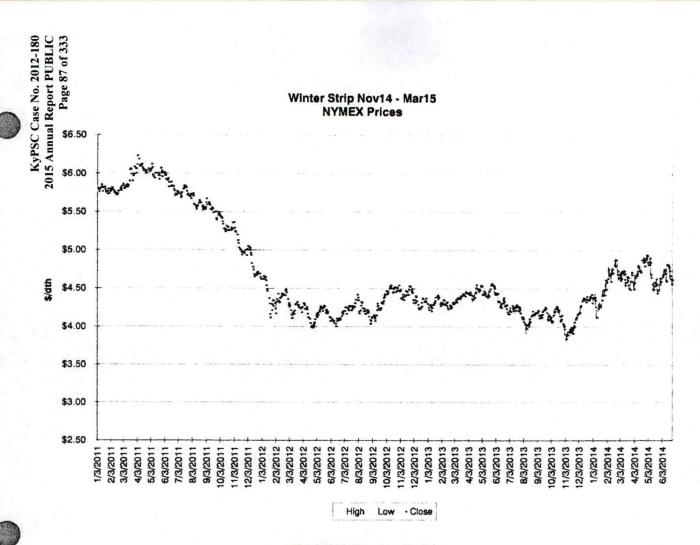
\$ 4.640

Winter 2013-

2014

Winter 2012-

2013



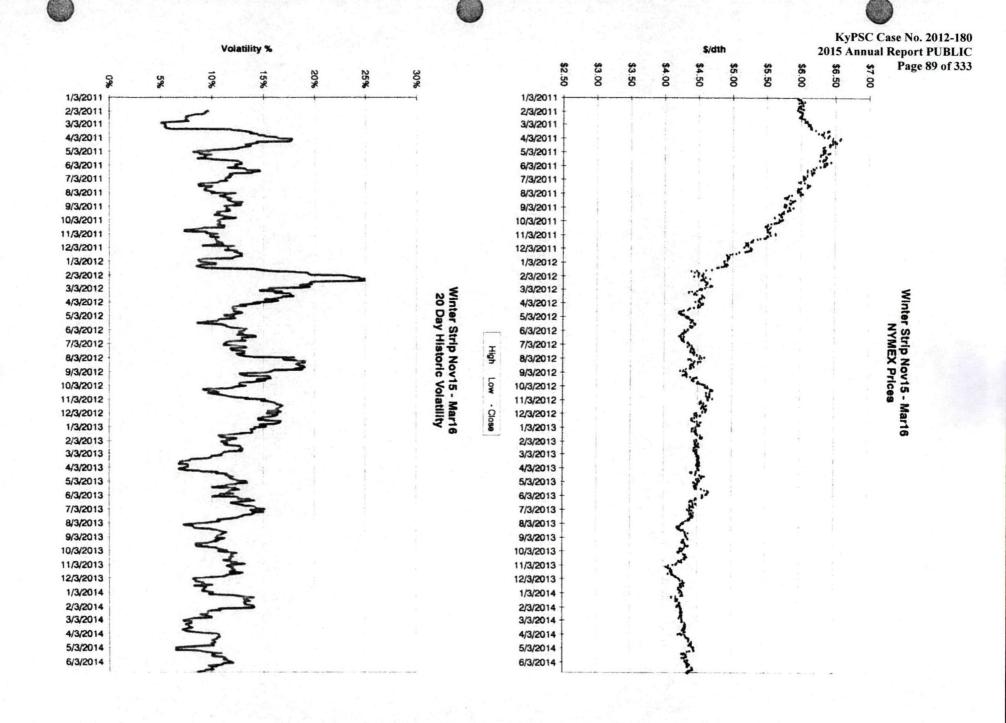


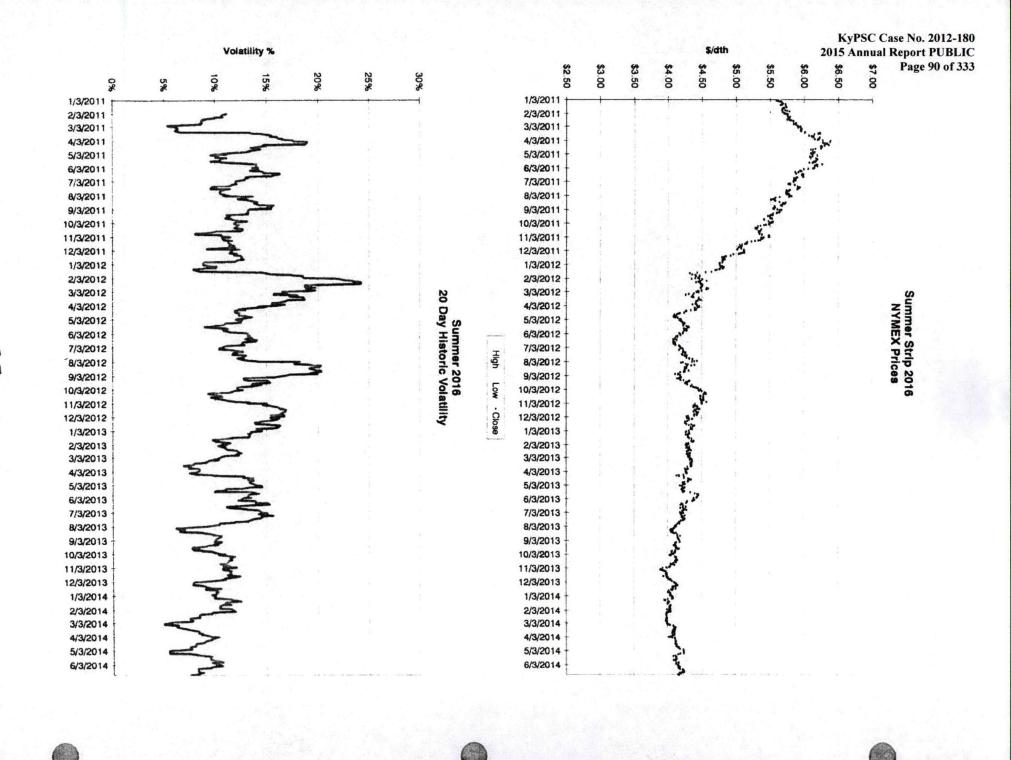


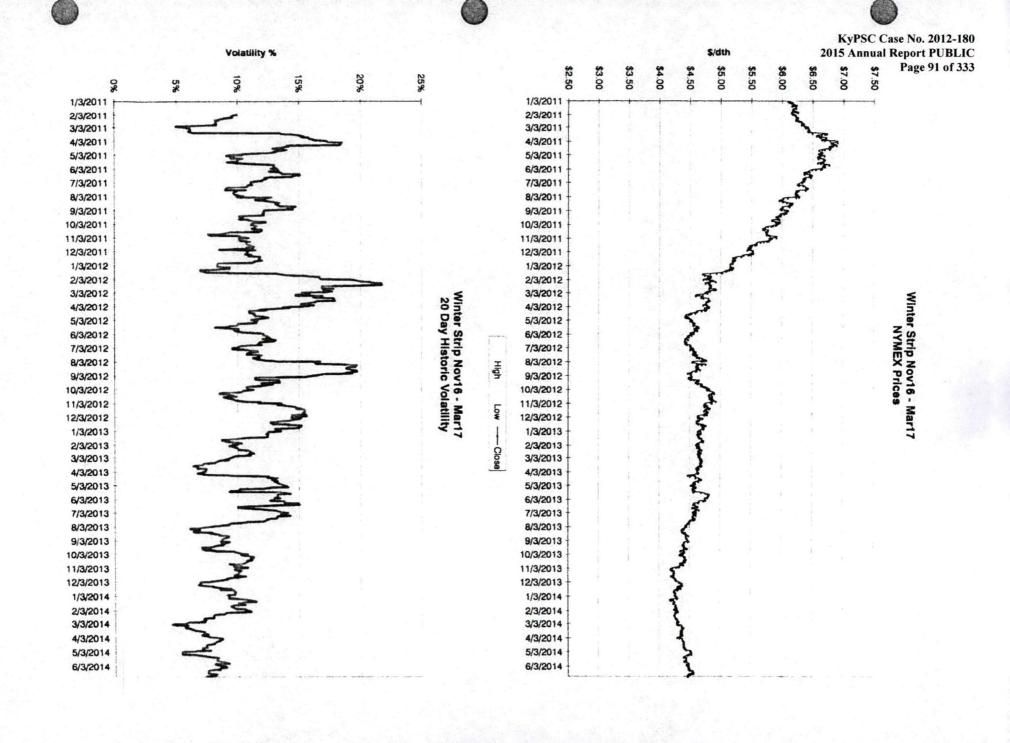
KyPSC Case No. 2012-180

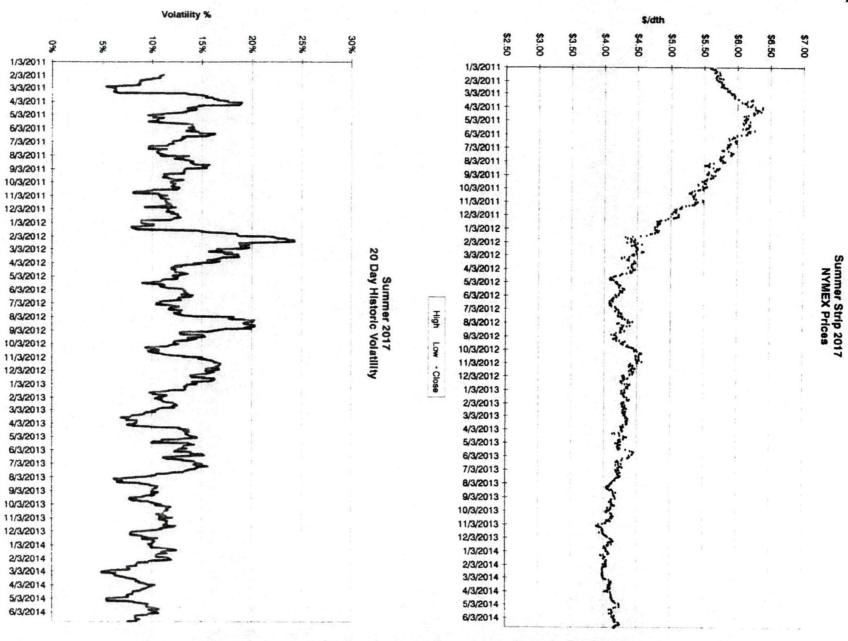
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Independent Statistics & Analysis

## U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

#### **Natural Gas**

U.S. Natural Gas Consumption.

EIA expects total natural gas consumption will average 72.5 Bcf/d in 2014, an increase of 1.7% from 2013, led by the industrial sector. In 2015, total natural gas consumption falls by 0.2 Bcf/d as a return to near-normal winter weather contributes to lower residential and commercial consumption. Higher natural gas prices this year contribute to a 0.5% decline in natural gas consumption in the power sector to 22.2 Bcf/d in 2014. EIA expects natural gas consumption in the power sector to increase to 23.0 Bcf/d in 2015 with lower natural gas prices and the retirement of some coal plants.

#### U.S. Natural Gas Production and Trade.

EIA expects natural gas marketed production to grow by an average rate of 4.0% in 2014 and 1.3% in 2015. Rapid natural gas production growth in the Marcellus formation is contributing to falling natural gas forward prices in the Northeast, which often fall below Henry Hub prices outside of peak winter demand months. Consequently, some drilling activity may move away from the Marcellus back to Gulf Coast plays such as the Haynesville and Barnett, where prices are closer to the Henry Hub spot price.

NOAA predicts a relatively quiet hurricane season this year with near- to below-normal tropical weather activity in the Atlantic basin. Based on NOAA's projections, EIA's mean estimate is for 30 Bcf of natural gas production in the federally administered Gulf of Mexico to be shut in at some point as a result of disruptions during the 2013 hurricane season (see the 2014 Outlook for Gulf of Mexico Hurricane-Related Production Outages). EIA's simulation results indicate a 69% probability of offshore natural gas production experiencing outages during the 2014 hurricane season that are equal to or larger than the 6.7 Bcf of production shut in last season. Despite the potential for significant outages if a strong hurricane were to pass through the GOM producing region, the overall effect on U.S. supply would not be as severe as in past years because the share of total U.S. natural gas production originating in the GOM has declined sharply. In 1997, 26% of the nation's natural gas was produced in the federal Gulf of Mexico; by 2013, that share had fallen to 5%.

Growing domestic production is expected to continue to put downward pressure on natural gas imports from Canada. EIA projects net imports of 3.6 Bcf/d in 2014 and 3.1 Bcf/d in 2015, which would be the lowest level since 1987. Liquefied natural gas (LNG) imports have fallen over the past several years because higher prices in Europe and Asia are more attractive to sellers than the relatively low prices in the United States. Several companies are planning to build liquefaction capacity to export LNG from the United States. Cheniere Energy's Sabine Pass facility is expected to be the first to liquefy natural gas

produced in the Lower 48 states for export. It is scheduled to come on line in stages beginning in late 2015.



#### Natural Gas Inventories.

Natural gas working inventories totaled 1,499 Bcf on May 30, which is 737 Bcf lower than the same time last year and 896 Bcf lower than the previous five-year (2009-2013) average. The injection season began April somewhat slowly, but has picked up in May, with injections over the last four weeks totaling 444 Bcf. EIA expects working gas stocks will reach 3,424 Bcf at the end of October, 392 Bcf lower than at the same time last year.

#### **Crude Oil Prices**

North Sea Brent crude oil spot prices averaged \$110/bbl in May, an increase of \$2/bbl from April. This was the 11th consecutive month in which average Brent crude oil spot prices fell within a relatively narrow range of \$107/bbl to \$112/bbl. Reported record-high levels of Chinese crude oil imports in recent months and the ongoing tensions in Libya and Ukraine contributed to the upward price pressure for Brent crude oil. China's net crude oil imports reached a reported 6.8 million bbl/d in April, compared with an average of 5.6 million bbl/d during 2013. Higher volumes of crude oil imports and domestic production are outpacing China's refining input, indicating some crude oil is being stored in strategic or commercial reserves. The forecast Brent crude oil price averages \$108/bbl in 2014, \$2/bbl higher than in last month's STEO, and \$102/bbl in 2015.

#### Gas Resources Hedging Program Market Indicators Summary July 25, 2014

	Price Pressure	Term	Comments	Page
Weather				
Long Term Forecast (Aug 14Oct 14)	<b>+</b>	Long	NOAA predicting above average temperatures for August 2014October 2014 for the southern portion of the CONUS as well as the East and West coasts and below average temperatures in the upper midwest portion of CONUS. In addition in mid-July, Duke's Meteorology Internal Outlook for the August 2014 was updated. The report indicates an area of below normal temperatures covering the Upper Midwest and parts of the Great Lakes.	13
Mid Term Forecast (30-60 days)	1	Long	August is predicted to be 8.4% colder than normal based on 10 year normals and September weather is predicted to be 7.8% colder than normal.	14
Short Term Forecast (6-10 days)	+	Short	Above normal temperatures in West Coast states. Normal and Below normal temperatures over the rest of the CONUS for the period.	15
Storage Inventory				
EIA Weekly Storage Report		Long	Storage injections for the week ending July 18th were 90 Bcf. Storage levels are at 2.219 TCF which is 20.2% lower than last year and 23.5% lower than the 5 year average.	16
ndustry Publications	The second	riu , i		
PIRA Energy Group Winter 2014/15: Summer 2015:	<b>†</b> ↓	Long	GAS PRICE SCORECARD: May 2014October 2014 Gas Price Outlook "Bullish" based on fundamentals such as "Imports From Canada", "US Storage Levels", "Industrial Sector", and "Exports to Mexico".	17-1
Gas DailyStorage	<b>+</b>	Long	Storage fears eased with storage at 2.2 Tcf at halfway point. Injections above 5-year average for last 14 weeks. Average weekly injected of 85.4 Bcf needed to reach 3.5 Tcf, Below normal temperatures are forecasted. NYMEX below \$4 for the first time since December. Bernstein Research price forecast: 2014\$4.75, 2015\$4.50, 2017\$5.00. USB price forecast: 2014\$4.75, 2015\$4.50. \$3 gas prices will bring about increased gas usage for electricity generation.	19-2
Gas DailyMiscellaneous	† <b>†</b>	Long	LNG exports led to tripling of Aussie natural gas prices. Manufactures are closing doors and power companies are switching to coal. The problems that plague Appalachian shale gas producers—lack of pipeline takeaway and lack of national demand will ease by 2016. In September Marcellus output will equal Qatar's national production.	21-2
Government Agencies				
Energy Information Administration Winter 2014/15: \$4.694 Summer 2015: \$4.389	1	Long	The projected Henry Hub natural gas spot price averages \$4.765/MMBtu for 2014 and \$4.502/MMBtu for 2015.	23
Fechnical Analysis	5.			
Winter 2014-15 Strip Chart	+	Short	Closed at \$3.99	24
Summer 2015 Strip Chart	+		Closed at \$3.78	25
Winter 2015-16 Strip Chart	+		Closed at \$4.09	26
Summer 2016 Strip Chart	+	Short	Closed at \$3.95	27
Winter 2016-17 Strip Chart	+		Closed at \$4.26	28
Summer 2017 Strip Chart	+	Short	Closed at \$4.13	29
conomy				
Demand	++	Long	EIA projects total natural gas consumption will average 72.4 Bcf/d in 2014, an increase of 1.4% from 2013, led by the industrial sector. 2015 gas consumption falls by 0.3 Bcf/d based on near-normal winter weather.	30
Supply	<b>←→</b>	Long	Total marketed production expected to increase by an average rate of 4.1% in 2014 and 1.2% in 2015.	30-3

Meeting Minutes: 428 Annex Conference Room - 1:00 pm Attendees: Chuck Whitlock, Mitch Martin, Steve Niederbaumer

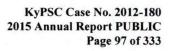
Discussed market fundamentals including weather, storage levels, PIRA and EIA price forecasts, analysts projections of gas prices, amount of supply available, economic influences on supply and demand and the current positions of the DEK Hedging Programs. Significant discussions took place regarding the dramatic drop in prices specifically the Winter 14/15, Summer 2015 and Winter 15/16 Strips. The primary driver of the decrease in prices has been the strong storage injections over the past 14 weeks. Storage fears have eased and that has been reflected in pricing. Based on discussions, a decision was made that additional hedging is necessary at this time. Significant discussion took place regarding the amount and type of hedging that was recommended. Consensus was reached for the following: Dth/d (DEK) for Apr. 1, 2015--Mar. 31, 2016 a Costless Collar with a provided ceiling of \$\frac{1}{2}\$

# Duke Energy Kentucky Hedging Program - Current Position November 2013 - October 2014 As of 07/23/14

	Nov-13 Dec-13 Jan-14 Feb-14 Mar-14 Apr-14 May-14 Jun-14	Jul-14	Aug-14	Sep-14	Oct-1
Load Forecast City Gate Load Forecast (Mcf)					
TCO FSS Injections (Mcf)					
Total Requirements (Mcf)					
rotal requirements (MCI)					
TCO FSS Withdrawais (Mcf)					
Other "Withdrawals" (Mcf)					
Total Withdrawals (Mcf)					
mount Hedged (dth/day)					
Fixed Price					
Fixed Price					
Fixed Price					
Fixed Price					
Fixed Price					
Fixed Price					
Total Hedged (dth/day)					
Total Hedged (dth)					
ypes of Hedging Products (1)					
Fixed Price	is K				
Price Caps					
No-Cost Collars					
Embedded Hedged Cost					
Winter					
Summer					
Estimated System Supply (Gross)					
Hedged % of System Supply					
Seasonal % of System Supply					
mt Hedged with Storage @ City Gate					
Hedged (City Gate) (Dth)					
Storage Withdrawal (Dth)					
Market (Dth)					
Total (incl. Injections) (Dth)					
% Hedged & Storage					
Seasonal %					

(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



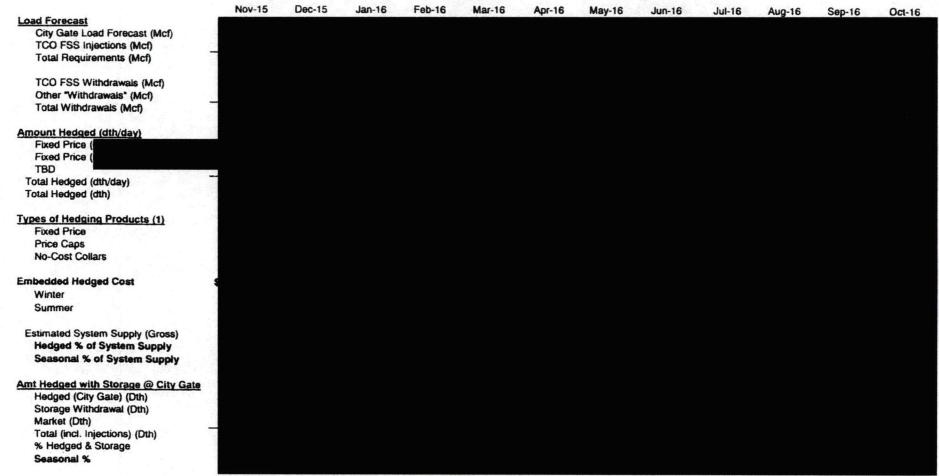


# Duke Energy Kentucky Hedging Program - Current Position November 2014 - October 2015 As of 07/23/14

	Nov-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15
Load Forecast		42.000.00		*							•	
City Gate Load Forecast (Mcf)												
TCO FSS Injections (Mcf)												
Total Requirements (Mcf)												
TCO FSS Withdrawals (Mcf)												
Other "Withdrawals" (Mcf)												
Total Withdrawals (Mcf)												
Amount Hedged (dth/day) Fixed Price												
Fixed Price												
Fixed Price												
Fixed Price												
Fixed Price												
Total Hedged (dir/day)												
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Types of Hedging Products (1)												
Fixed Price												
Price Caps												
No-Cost Collars												
Embedded Hedged Cost												
Winter												
Summer												
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Estimated System Supply (Gross)												
Hedged % of System Supply												
Seasonal % of System Supply												
ant Hadrad with Starage & City Cate												
Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth)												
Storage Withdrawal (Dth)												
Market (Dth)												
Total (incl. Injections) (Dth)												
% Hedged & Storage												
Seasonal %												

<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

## Duke Energy Kentucky Hedging Program - Current Position November 2015 - October 2016 As of 07/23/14



(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



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## Duke Energy Kentucky Hedging Program - Current Position November 2016 - October 2017 As of 07/23/14

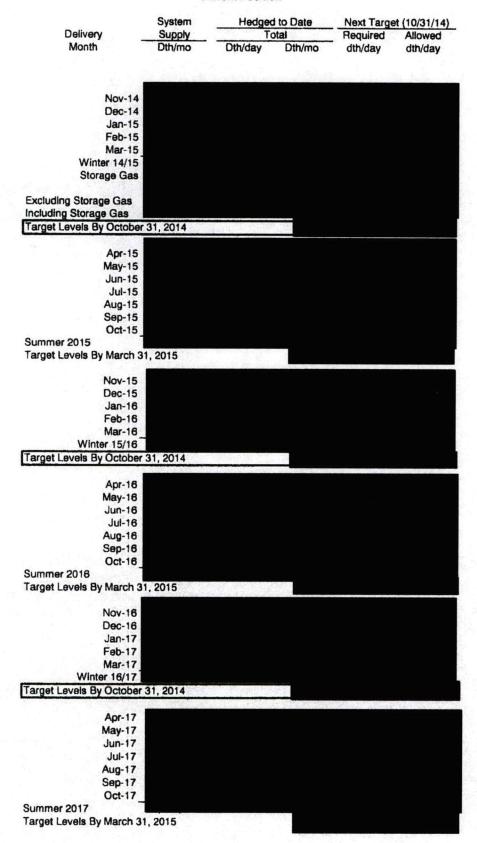
Nov-16 Dec-16 Jan-17 Feb-17 Mar-17 Apr-17 May-17 Jun-17 Aug-17 Sep-17 Oct-17 Load Forecast City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other "Withdrawals" (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) Fixed Price Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage

00

Seasonal %

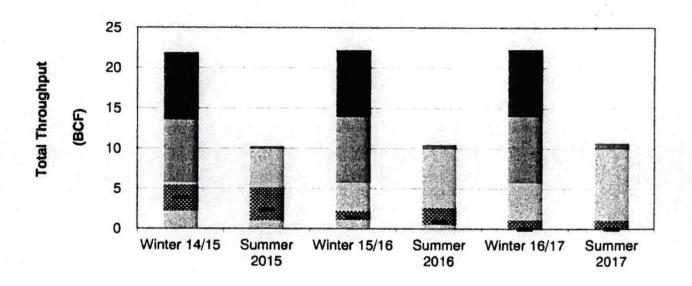
<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

#### Duke Energy Kentucky Hedging Program Current Position

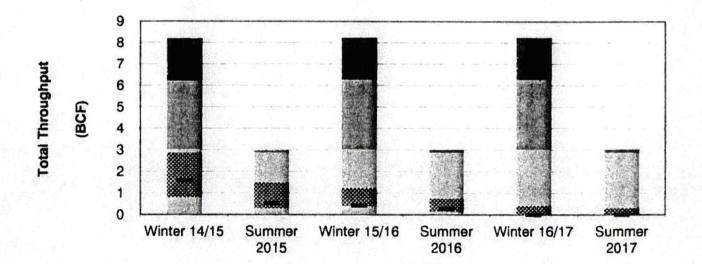


#### Hedging Strategy Current Position - July 23, 2014

#### **Duke Energy Ohio**



#### **Duke Energy Kentucky**

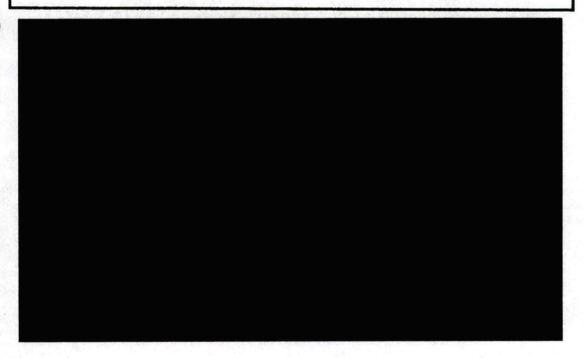


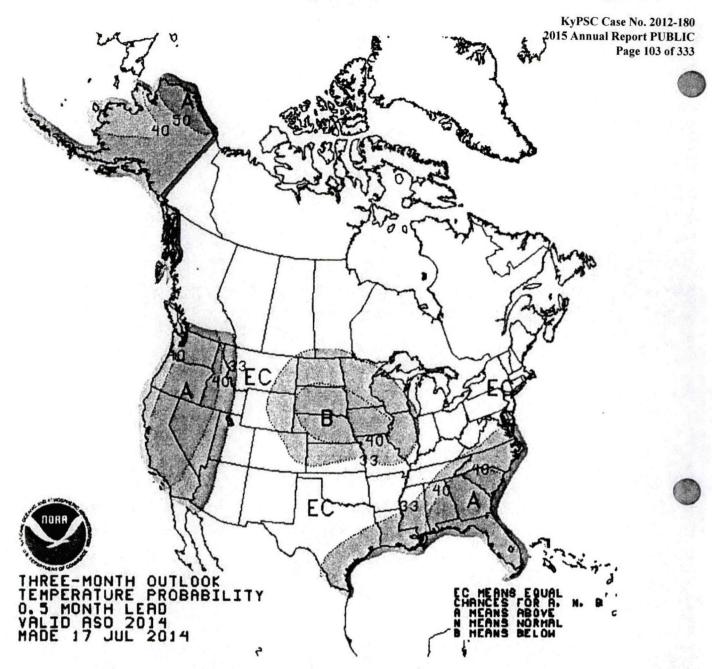
■ Target ■ Base ■ Swing ■ Storage - Hedged

# COMPARISON OF HISTORIC SPOT & PROJECTED PRICES KyPSC Case No. 2012-180 TO CURRENT FUTURES PRICES Page 102 of 333

		ic Prices: osing Price			
	5-yr. avg. (09/10-13/14)	Last Year (2013-2014)	PIRA 23-Jun-14	EIA 8-Jul-14	NYMEX 25-Jul-14
Aug	\$3.80	\$3.46	7	\$4.550	\$3.828
Sep	\$3.31	\$3.57		\$4.560	\$3.836
Oct	\$3.57	\$3.50		\$4.590	\$3.847
Nov	\$3.61	\$3.50		\$4.650	\$3.900
Dec	\$3.93	\$3.82		\$4.780	\$3.974
Jan	\$4.18	\$4.41		\$4.810	\$4.048
Feb	\$4.21	\$5.56		\$4.680	\$4.054
Mar	\$3.87	\$4.86		\$4.550	\$3.958
Apr	\$3.77	\$4.58		\$4.260	\$3.750
May	\$3.93	\$4.80		\$4.160	\$3.758
Jun	\$3.94	\$4.62		\$4.350	\$3.771
Jul	\$3.99	\$4.40		\$4.460	\$3.805
2 Month Avg	\$3.84	\$4.25		\$4.533	\$3.877
Summe Winter A	er Average verage			\$4.419 \$4.694	\$3.799 \$3.987

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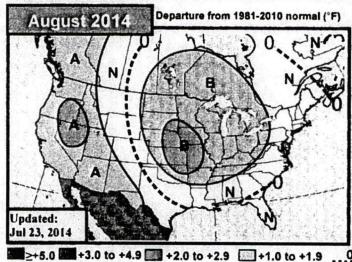


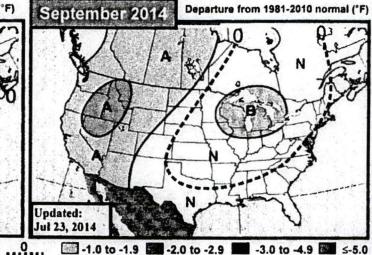
# EarthSat 30-60 Day Outlook

Wednesday, July 23, 2014

Meteorologists: PV/BH/SS

**WEATHER SERVICES** 





\_\_\_\_-0.9 to 0.9



Much Cooler Central US Remaining Hot in the West

Significant cooler trends are found in this week's August outlook, with a focus on the Central US. After a couple of months with fairly weak temperature anomalies, July has come with a more amplified pattern lending to substantial cool anomalies across the mid-continent and warm anomalies in the West. August is now expected to feature a continuation of that pattern at least to some extent. This pattern results from ridging over the north-central Pacific and over the higher latitudes of Canada, with some enhancement of these features potentially coming from additional recurving typhoons in the west Pacific. The rise in AAM and drop in the QBO also support the big picture themes / changes. This all comes despite ENSO remaining neutral thus far. limiting the direct influences of the anticipated El Niño.

Aug PWCDD\*\* Forecasts

\*10Y Normal \*04-13

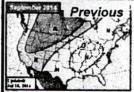
Aug 2014 Fcst:

300.0

10Y Normal\* 327.6 30Y Normal 311.8 Aug-2013 306.6

Change: -15

\*National Pop-Weighted CDDs



Cooler Eastern Half

Heat Persists in the West

Cool changes continued into the September outlook with belows appearing in the upper Midwest and negative normals expanding elsewhere over the Eastern US. Confidence in the direct influences of ENSO being a significant factor at this point is low, so the pattern looks to remain fairly similar to that of the latter part of Summer with ridging persisting in the West while occasional cool shots are seen downstream in the mid-continent. The outlook shows fairly decent agreement with the latest CFS model, though that model extends cool anomalies a bit further south and west into the southern Rockies. Risks remain to the hotter side in California as drought conditions take their toll and Santa Ana season begins.

Sep PWCDD\*\* Forecasts

\*10Y Normal '04-13

Sep 2014 Fcst:

170.0

10Y Normal\* 184.4 30Y Normal 172.6

Sep-2013

Change: -8

"National Pop-Weighted CDOs

195.4

far

Final 60 Day Outlook



Final 30 Day Outlook



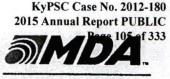
The forecast for the rest of the month plus the ventication of the past 22 days yields a much cooler-looking map across the mid-continent and South with widesprea anomalies of 3-5F below normal seen. It also yields notable heat in the West with some relatively strong anomalies in the Northwest, Great Basin, and California. While the final July forecast shared a few similarities with regards to the general pattern, it certainly underestimated the magnitude of the anomalies on both ends. If the current forecast out to July 31 verifies. July would total 316.3 PWCDDs, coolest since 2009 (291.0) and well below the 30-year normal of 338.2.



# EarthSat 6-10 Day Forecast—Detailed

Friday, July 25, 2014

Meteorologist: PV/AC



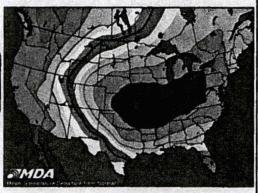
**WEATHER SERVICES** 

### Day 6: Wednesday, Jul 30

Previous Forecast:



Forecast Confidence: 9/10



### South-Central Maintains MBs Through Mid-Period

### The West Holds Onto Heat Early In Period

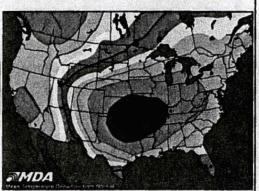
Strong cool air continues to dominate the forecast period with some cooler adjustments still seen across the South and the East. Much below normal temperatures will drop into the South during the first half of the period as high pressure allows these readings to filter into the region. Even a portion of Texas will take on much below normal anomalies. Cooler risks accompany the peak of the cool air early. The early period comes with some cooler changes in the East as more high pressure influence is expected. Wet weather along the East may keep the region toward the cooler side late. Any of the warmth is maintained over the West through the early period, but even the West is not as warm due to progression of the forecast.

### Day 7: Thursday, Jul 31

Previous Forecast:



Forecast Confidence: 9/10

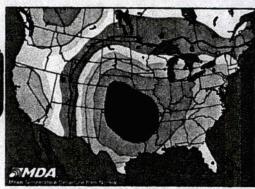


### Day 8: Friday, Aug 1

Previous Forecast:



Forecast Confidence: 8/10

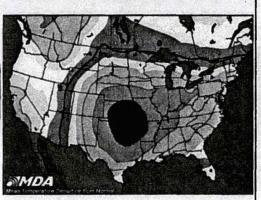


### Day 9: Saturday, Aug 2

Previous Forecast:



Forecast Confidence: 8/10

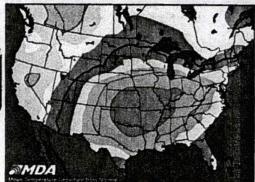


### Day 10: Sunday, Aug 3

Previous Forecast:



Forecast Confidence: 7/10



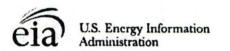
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8 R 5 R 3

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3 A +5 A +8 MA+15 SA



### Weekly Natural Gas Storage Report

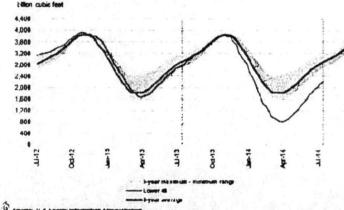
for week ending July 18, 2014 | Released: July 24, 2014 at 10,30 a.m. | Next Release: July 31, 2014

JSNWorking gas in underground storage, lower 48 states

					Historical Comparisons			
		billion	Stocks cubic feet (Bcf)			r/18/13)		or average 09-2013)
Region	07/18/14	07/11/14	net change	Implied flow	(Bcf)	% change	(Bcf)	% change
East	1,100	1,044	56	56	1.302	-15.5	1,419	-22.5
West	369	358	11	11	454	-18.7	449	-17.8
Producing	750	727	23	23	1.023	-26.7	1,034	-27.5
Sett	207	201	8	6	274	-24.5	205	1.0
Nonsalt	543	525	18	18	749	-27.5	829	-34.5
Total	2,219	2,129	90	90	2,780	-20.2	2,902	-23.5

Working gas in storage was 2,219 Bcl as of Friday, July 18, 2014, according to EIA estimates. This represents a net increase of 90 Bcf from the previous week. Stocks were 581 Bcf less than last year at this time and 683 Bcf below the 5year average of 2,902 Bcf. In the East Region, stocks were 319 Bcf below the 5-year average following net injections of 56 Bcf. Stocks in the Producing Region were 284 Bcf below the 5-year average of 1,034 Bcf after a net injection of 23 Bcf. Stocks in the West Region were 80 Bcf below the 5-year average after a net addition of 11 Bcf. At 2.219 Bcf, total working gas is below the 5-year historical range.

#### Working gas in underground storage compared with the 5-year maximum and maintrum



Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2009

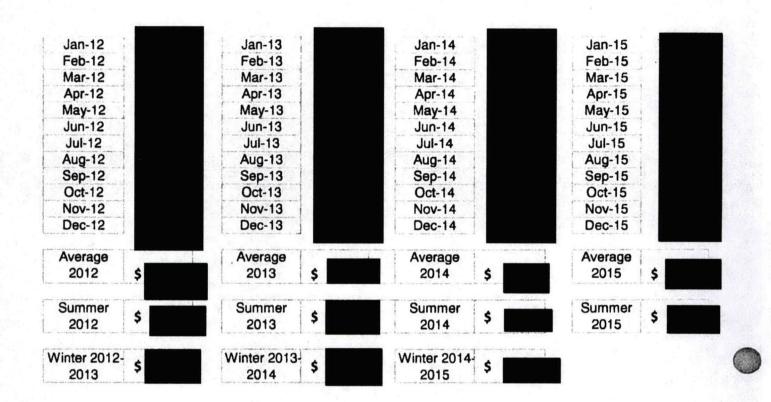
through 2013.

Source: Form EIA-912, "Weekly Underground Natural Gale Storage Report." The dashed vertical lines indicate current and year-ago.

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# PIRA North American Gas Price Overview Per MMBTU June 23, 2014 Release





### North American Gas Forecast Monthly

June 25, 2013

NATURAL GAS

# U.S. GAS PRICE SCORECARD: JULY 2013 - OCTOBER 2013

Bearish Neutral Bullish

### **Storage**



### Storage Surges Past 2.2 Tcf at Halfway Point—July 25, 2014

Mild summer weather and strong as production have eased storage fears, with most analyst upping their forecasts for end of season inventory levels due to the strong injection season. Injections have been above the 5-year average for the last 14 weeks.

Many analysts who had predicted the level might reach 3.4 Tcf are now predicting 3.5 Tcf and higher. The industry has now injected about 1.4 Tcf since the end of March, or an average of 87.3 Bcf/week. The deficit has been reduced by 31% to 683 Bcf from the 992 Bcf at the end of March. It will take 85.4 Bcf/w to reach 3.5 Tcf by the end of October.

WSI's August 7<sup>th</sup> forecast is calling for above-normal temperatures only in a sliver of the US from Nevada north to Montana. A larger area encompassing much of the South and Midcontinent can expect below-normal temperatures.

"We have 99 days left until November –In 9 of the last 11 weeks, we've injected more than 14 Bcf/d. All you have to do is look back at last year, when we had 16/Bcf/d injection rates in September and October. If that milder weather pattern is sustained, you could definitely come up with 3.6 Tcf or thereabouts in storage to start November "according to Chris McGill of the American Gas Association.

### PIRA—Gas Flash Weekly—July 21, 2014

The NYMEX Henry Hub prompt contract settled below the \$4 mark for the first time since early December following another higher-than-expected weekly storage build.

So far in 2014 there have been nine weekly injections at or above 100 Bcf, compared to only two last year. Moreover there were only eight 100+ injections from 2010-2013 in total. Both the magnitude of such high weekly builds this year, as well as the concentration in June and July—peak cooling months—underscore the increasingly bearish forces weighing on gas prices. Indeed, the lofty heights injections have reached highlight not only a lack of weather support thus far during the peak cooling period, but also the overall weakness in weather-adjusted US electricity demand since the start of the injection season.



### \$4.40--\$5 Gas Needed to Fill Storage: Bernstein-July 14, 2014

According to Bob Brackett an analyst with Bernstein Research, US natural gas prices will range between \$4.40 and \$5/Mcf for the second half of this year, as gas storage levels struggle to top 3.5 Tcf.

Brackett calls for an average price of \$4.75/Mcf for this year, \$4.50/ Mcf next year and stretching to \$5/Mcf by 2017.

Despite the fastest eight weeks of the filling in history, we are still slightly behind track to reach minimum fill levels by mid-November, Bracket said of his contrarian views, noting that futures strip prices are only in the mid-\$4/Mcf range.

UBS is predicting gas prices will average \$4.75/MMBtu in 2014, declining to \$4.50/MMBtu in 2015, as more power demand shifts to coal.

Analysts believe that when gas goes above \$4/Mcf, power producers shift back to cheaper coal.

The fundamental picture in the market hasn't changed. As natural gas gets cheaper it becomes more attractive to power generators; however there isn't much demand for power generation at the moment. Upward price potential continues to hinge on hotter.

### Big July Injection Lifts Storage to 2.129 Tcf-July 18, 2014

A 107-Bcf injection to storage came in well above expectations continuing a string of 13 weeks of above-average builds.

"The net injection of 107 Bcf was more than expected, implying a further weakening of the background supply/demand balance, presumably on a further increase in supply", said Tim Evans, analyst at Citi Futures Perspective. This has bearish implications for storage injections going forward. "This mild weather is really putting the lid on most refill concerns. We still have a long way to go with a lot of unknowns, but at this pace topping 3.5 Tcf by the end of October shouldn't be a huge problem."

Aaron Calder, senior market analyst at Gelber & Associates predicted that \$3 gas prices "will bring about increased natural gas usage and this is the largest injection we'll see until late September". However, the massive July injection shows the extent of the recent production boom. The large injections will offer more winter cushion than originally thought, but these low prices will bring about power generation demand and cut into the excess supply.

## **Miscellaneous Information**

# LNG Exports Led to Tripling Aussie Gas Prices: Report—July 25, 2014

Australian gas prices have tripled as a result of the growth of LNG exports according to the Industrial Energy Consumers of America (IECA). IECA is a vocal opponent of increasing US exports of LNG.

"Even though Australia is the third largest producer of natural gas in the world, Australian natural gas prices have tripled in response to significant LNG exports. Like the US, the Australian natural gas market was once a free market whereby domestic supply and demand determined the price. Now, because of LNG exports, natural gas suppliers have market power and can dictate higher prices. Australian manufactures are closing their doors and power companies are taking action to switch from natural gas to coal."

### Appalachian Shale Woes Gone by 2016: Analyst—July 18, 2014

The problems that plague Appalachian shale gas producers—lack of pipeline takeaway and lack of national demand—will ease by 2016, even as natural gas production continues to grow at double-digit rates according to Canaccord Genuity.

Demand from gas-burning power plants, particularly in the PJM market, which straddles the Marcellus and Utica shale's, will buffer gas prices as utilities replace coal plants retired by government policies.

Per PJM's latest auction results, by 2018 new gas-fired generation in PJM results in new gas demand of 2.7 Bcf/d with direct access to Utica and Marcellus gas.

"We anticipate the unprecedented uplift in natural gas demand from domestic utilities, international power companies via LNG exports and multinational industrial companies re-locating to the US Gulf Coast will narrow the spread between Henry Hub and the Appalachian Basis points".

According to Canaccord, Appalachian gas production will more than double to 35 Bcf/d by 2018 with the Utica Shale providing most of the additional supply coupled with a 10% increase in well performance in the Marcellus.

### Marcellus Output to Equal Qatar's: EIA Report—July 15, 2014

Marcellus Shale gas production is expected to hit 15.48 Bcf/d in August, a 247,000 Mcf/d increase from July to August. At the rate Marcellus production is increasing, it will

surpass the national production of Qatar, the world's third largest gas producer, in September.

"We see the potential that rising Marcellus production is poised to permanently disrupt the traditional Gulf-based pricing paradigm according to BNP Paribas analyst Teri Viswanath. With the eastern half of the US market increasingly dependent on the Appalachian Basin, we see the possibility that a new supply proxy for this region will emerge. If verified, Henry Hub may well be relegated as a supply proxy for only the Gulf and western markets."

### Producers Will Return to Haynesville: Analyst-July 14, 2014

The anticipated boom in the construction of oil and gas industry mega-projects in Louisiana should push gas prices higher, providing producers with an incentive to turn their attention once again to the dry-gas Haynesville Shale according to Loren Scott & Associates.

About \$90 billion worth of projects—including LNG facilities and petrochemical plants—have been proposed to be built in South Louisiana in the 2013-17 time frame.

"I think it's going to put upward pressure on the price of natural gas. All it has to do is get a little above \$5/MMBtu—and right now it's at about \$4.50—and suddenly you're going to have all those firms coming back to the Haynesville Shale because there's just a ton of natural gas there."

In recent years, drilling has declined significantly in Haynesville, as drillers moved their rigs to oilier and more liquids-rich plays such as the Eagle Ford Shale of South Texas. Another factor working against the Haynesville is that it is a deep-shale play, with relatively high drilling costs.

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# Energy Information Administration Henry Hub Pricing Per MMbtu July 8, 2014 Release



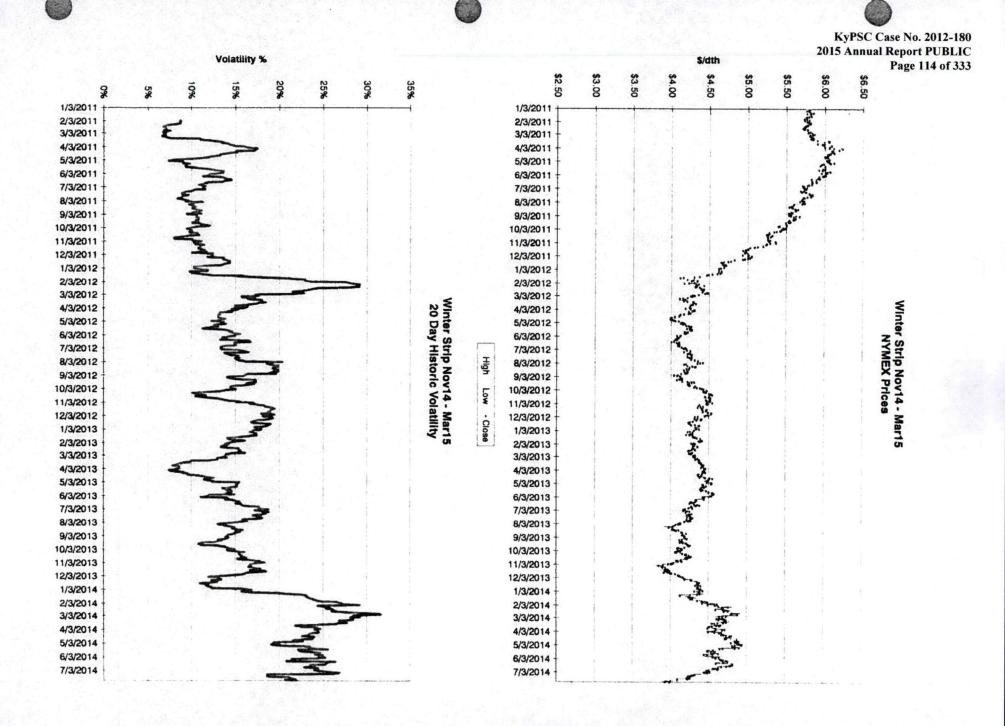
Jan-12		2.67
Feb-12		2.50
Mar-12		2.18
Apr-12		1.95
May-12		2.43
Jun-12		2.46
Jul-12		2.95
Aug-12		2.84
Sep-12		2.85
Oct-12		3.32
Nov-12		3.54
Dec-12		3.34
Average		2 752
2012	>	2.753
Summer		
2012	\$	2.686
Winter 2012-	\$	3.470
	Feb-12 Mar-12 Apr-12 May-12 Jun-12 Jul-12 Aug-12 Sep-12 Oct-12 Nov-12 Dec-12 Average 2012 Summer 2012	Feb-12 Mar-12 Apr-12 May-12 Jun-12 Jul-12 Aug-12 Sep-12 Oct-12 Nov-12 Dec-12  Average 2012  \$ Summer 2012 \$ Winter 2012 \$

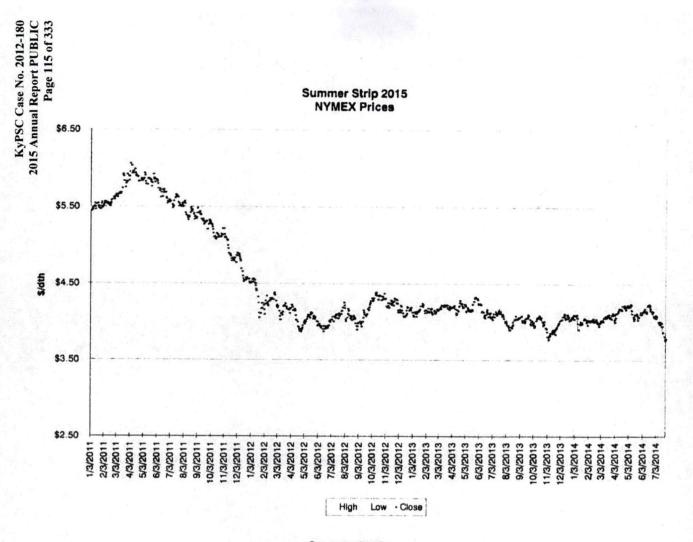
Nov-13 Dec-13 Average 2013
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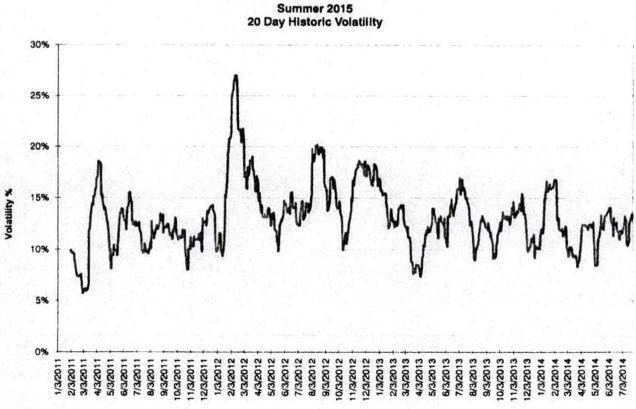
2014

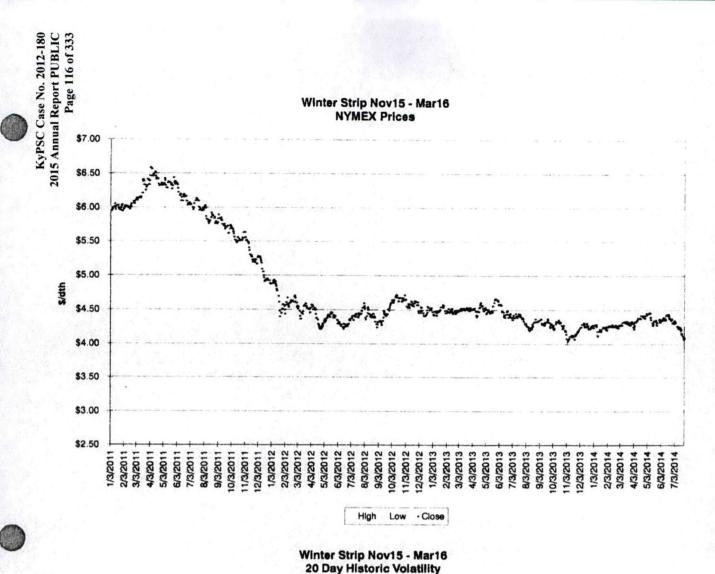
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	4.90
	4.66
	4.58
	4.59
	4.61
	4.55
	4.56
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a particular	4.78
\$	4.765
\$	4.591
\$	4.694
	\$

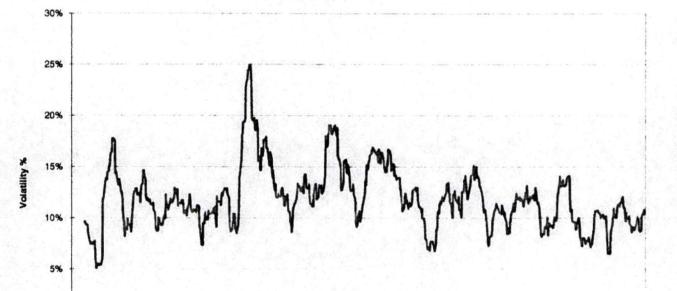
2015 Summer	\$	4.502		
Average				
Dec-15		4.65		
Nov-15	4.61			
Oct-15		4.57		
Sep-15	10	4.44		
Aug-15		4.48		
Jul-15		4.46		
Jun-15	- Property	4.35		
May-15		4.16		
Apr-15	\$ 5	4.26		
Mar-15		4.55		
Feb-15	1	4.68		
Jan-15		4.81		











1/3/2013

2/3/2013

3/3/2013 4/3/2013 5/3/2013 6/3/2013 7/3/2013 8/3/2013

9/3/2013

0/3/2013 11/3/2013 12/3/2013 1/3/2014 2/3/2014 3/3/2014 4/3/2014 5/3/2014

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1/3/2011

5/3/2011 7/3/2011

9/3/2011

11/3/2011 1/3/2012 2/3/2012

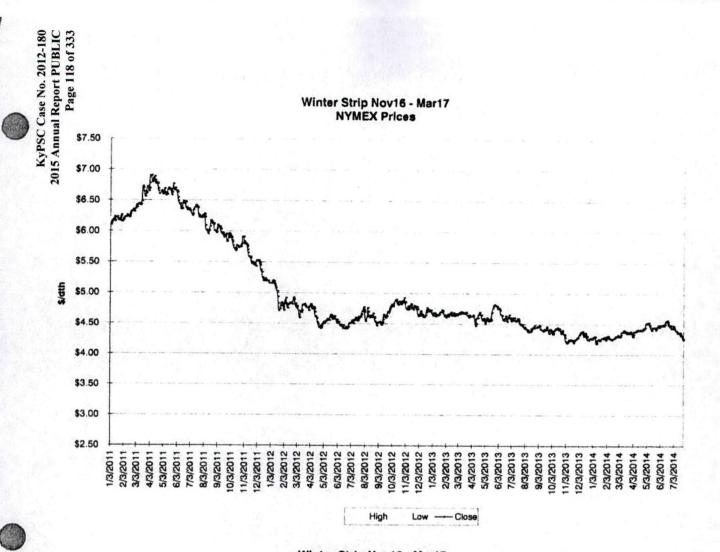
4/3/2012

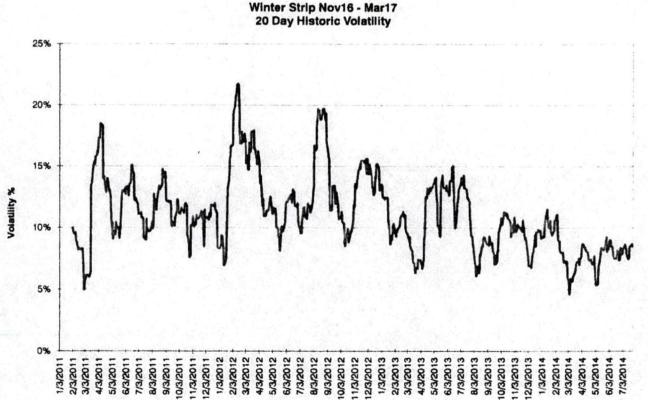
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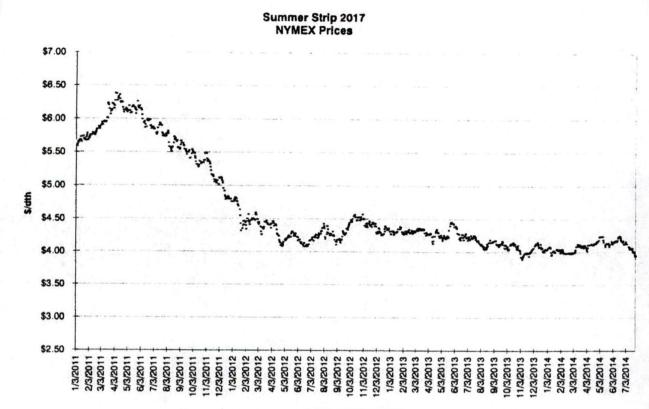
8/3/2012 9/3/2012 0/3/2012 1/3/2012 2/3/2012

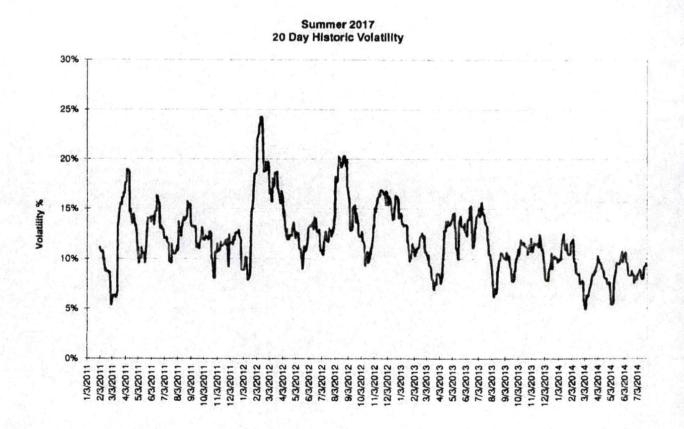
7/3/2012

KyPSC Case No. 2012-180











Independent Statistics & Analysis

# U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

### **Natural Gas**

### U.S. Natural Gas Consumption.

EIA expects total natural gas consumption will average 72.4 Bcf/d in 2014, an increase of 1.4% from 2013, led by the industrial sector. In 2015, total natural gas consumption falls by 0.3 Bcf/d as a return to near-normal winter weather contributes to lower residential and commercial consumption. Higher natural gas prices this year contribute to a 1.1% decline in natural gas consumption in the power sector to 22.1 Bcf/d in 2014. EIA expects natural gas consumption in the power sector to increase to 22.8 Bcf/d in 2015 with lower natural gas prices and the retirement of some coal plants.

#### U.S. Natural Gas Production and Trade.

EIA expects natural gas marketed production to grow by an average rate of 4.1% in 2014 and 1.2% in 2015. Rapid natural gas production growth in the Marcellus formation has contributed to low natural gas forward prices in the Northeast, and as a result new infrastructure has been proposed to take gas to other market regions. In June, the eastward-flowing Rockies Express Pipeline (REX) began service on its Seneca Lateral pipeline, which will take Marcellus gas westward to the Midwest. REX's parent company, Tallgrass Energy, plans to add bidirectional capability on a significant portion of REX's easternmost segment.

Growing domestic production is expected to continue to put downward pressure on natural gas imports from Canada. EIA projects net imports of 3.7 Bcf/d in 2014 and 3.1 Bcf/d in 2015, which would be the lowest level since 1987. Liquefied natural gas (LNG) imports have fallen over the past several years because higher prices in Europe and Asia are more attractive to sellers than the relatively low prices in the United States. Several companies are planning to build liquefaction capacity to export LNG from the United States. Cheniere Energy's Sabine Pass facility is expected to be the first to liquefy natural gas produced in the Lower 48 states for export. It is scheduled to come online in stages beginning in late 2015.

#### Natural Gas Inventories.

Natural gas working inventories totaled 1,929 Bcf as of June 27, which was 666 Bcf lower than the same time last year and 790 Bcf lower than the previous five-year (2009-2013) average. The injection season began somewhat slowly in April, but picked up in May and June with more than 1 Tcf was added to storage. EIA expects working gas stocks will reach around 3,430 Bcf at the end of October, 380 Bcf lower than at the same time last year.

### **Crude Oil Prices**

North Sea Brent crude oil spot prices averaged \$112/bbl in June, an increase of \$2/bbl from May. This was the 12th consecutive month in which average Brent crude oil spot prices fell within a relatively narrow range of \$107/bbl to \$112/bbl. The escalating conflict in Iraq, continued record-high levels of Chinese crude oil imports in 2014, and ongoing delays to Libyan oil exports have contributed to upward price pressure. The forecast Brent crude oil price averages \$110/bbl in 2014, \$2/bbl higher than estimated for 2014 in last month's STEO, and \$105/bbl in 2015, which is \$3/bbl higher than in last month's STEO.

The WTI crude oil spot price increased from an average of \$102/bbl in May to \$106/bbl in June. Driven in part by the relocation of crude oil to refining centers along the Gulf Coast through new pipelines, crude oil inventory levels at the Cushing, Oklahoma, storage hub, the delivery point for WTI, have fallen by more than half since the start of the year, from 42 million barrels on January 24 to below 21 million barrels on June 27, the lowest level since November 2008. The discount of WTI crude oil to Brent crude oil, which averaged more than \$13/bbl from November 2013 through January 2014, has since fallen to \$6/bbl in June. The U.S. Commerce Department's Bureau of Industry and Security (BIS) recently authorized two companies to export stabilized lease condensate processed in a distillation tower. EIA now expects the discount of WTI to Brent crude oil to average \$9/bbl in the second half of 2014, which is \$1/bbl lower than last month's STEO. EIA expects the discount to average \$10/bbl in 2015.

### Gas Resources Hedging Program Market Indicators Summary August 21, 2014

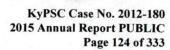
	Price Pressure	Term	Comments	Page
Weather	Triessure			Ref
Long Term Forecast (Aug 14Oct 14)	NOAA predicting above average temperatures for 2014 for the southern portion of the CONUS as we have a contract the contract of the conus as we have a contract the contract that the contract the contract that t		NOAA predicting above average temperatures for August 2014October 2014 for the southern portion of the CONUS as well as the East and West coasts and below average temperatures in the upper midwest portion of CONUS.	13
Mid Term Forecast (30-60 days)	+	Long	September is predicted to be 10.5% colder than normal based on 10 year normals and October weather is predicted to be 9.1% colder than normal.	14
Short Term Forecast (6-10 days)	++	Short	Above normal temperatures early in the period in Central US. Normal and Below normal temperatures over the CONUS later in the period.	15
Tropical Storm Activity	-	Short	National Hurricane Center states that conditions are expected to be conductive for the development of a tropical depression during the next day or two. Formation chance through 48 hours50%, Formation chance through 5 days70%.	
Storage Inventory	2020,537			
EIA Weekly Storage Report	1	Long	Storage injections for the week ending August 8th were 78 Bcf. Storage levels are at 2.467 TCF which is 17.7% lower than last year and 18.9% lower than the 5 year average.	16
ndustry Publications				
PIRA Energy Group Winter 2014/15: Summer 2015:	1	Long	EARLY BIRD GAS PRICE SCORECARD: 2015 Gas Price Outlook "Bearish" based on fundamentals such as "Lower 48 Gas Production", "US Storage Levels", and "Residential/Commercial".	17-18
Gas DailyGas Price Predictions	<b>†</b>	Another price blowout may be coming this year as Appalachian shale a production from the region overwhelms demand. The area has about Long Bcf/d or 40% higher production than two years ago, the area in the neaterm is materially oversupplied. FBR gas price forecast has been adjusted down for the rest of 2014 from \$4.50/Mcf to \$4.00/Mcf.		
Gas DailyMiscellaneous	† ↓	Long	A survey of electric executives indicates growth in natural gas generation, greater distributed generation, replacement of coal and nuclear generation and stagnant load growth in the next 10 years. Marcellus shale production exceeded 15 Bcf/d. Production from that region has increased from 2 Bcf/d to its current rate in four years. US demand should grow between 12.5 Bcf/d to 19.5 Bcf/d in the next 10 years according to BP. LNG exports to account for the bulk of the increase, but the earliest increases will come from the industrial sector as it responds to the market signal of \$4/Mcf gas.	20-2
Government Agencies				
Energy Information Administration Winter 2014/15: \$4.114 Summer 2015: \$3.901	1 +	Long	The projected Henry Hub natural gas spot price averages \$4.458/MMBtu for 2014 and \$3.995/MMBtu for 2015.	22
echnical Analysis	1			
Winter 2014-15 Strip Chart	+->		Closed at \$4.04	23
Summer 2015 Strip Chart	<b>←→</b>		Closed at \$3.82	24
Winter 2015-16 Strip Chart	++		Closed at \$4.12	25
Summer 2016 Strip Chart			Closed at \$3.97	26
Winter 2016-17 Strip Chart	-		Closed at \$4.28	27
Summer 2017 Strip Chart	++	Short	Closed at \$4.11	28
conomy				
Demand	•	Long	EIA projects total natural gas consumption will average 72.6 Bcf/d in 2014 an increase of 1.7% from 2013, led by the industrial sector. 2015 gas consumption increases by 0.4 Bcf/d based on continued growth in the industrial sector.	
Supply	<b>+</b>	Long	Total marketed production expected to increase by an average rate of 5.3% in 2014 and 2.1% in 2015.	29-30
	137 00 0000	FEE WEET	Brent crude projected to average \$108 per barrel in 2014 and \$105 per	1471278

Meeting Minutes: 428 Annex Conference Room	m - 1:00 pm
Attendees: Jeff Kern, Joachim Fischesser, Ric	ck Colvin, Mitch Martin, Steve Niederbaumer
as analyst forecasts for future price movement the extremly cold winter has eased due to high since the last Hedging meeting. Called three Mainline. The suppliers were asked to provide and FOMI supply at Texas Gas Zone 1 to a fixed provided the supply at Texas	ather, storage, consumption, supply, winter and summer strip charts, DEK's hedging program as well ints. Discussion focused on the level of storage and that the concern about the low level resulting from helvel of storage injections. In addition, discussed the two deals that Duke Kentucky entered into suppliers to provide 2,000 dth/d for DEK for the period 4/1/20153/31/2016 at Columbia Gulf as Floor for a Costless Collar with a provided Ceiling of The suppliers and their bids were:  Floor was the lowest and it was accepted. In addition, contacted to convert price for the Winter 14/15. Accepted price of the Winter 14/15 bed on these factors a decision was made not to hedge additional volumes at this time.

# Duke Energy Kentucky Hedging Program - Current Position November 2013 - October 2014 As of 08/19/2014

Nov-13 Dec-13 Jan-14 Feb-14 Mar-14 Apr-14 May-14 Jun-14 Jul-14 Aug-14 Sep-14 Oct-14 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other "Withdrawals" (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Fixed Price Fixed Price Fixed Price Fixed Price **Fixed Price** Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal % (1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.





# Duke Energy Kentucky Hedging Program - Current Position November 2014 - October 2015 As of 08/19/2014

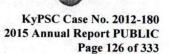
Nov-14 Dec-14 Jan-15 Feb-15 Mar-15 Apr-15 May-15 Jun-15 Jul-15 Aug-15 Sep-15 Oct-15 Load Forecast City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Fixed Price Fixed Price Fixed Price Collar Fixed Price Fixed Price Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. injections) (Dth) % Hedged & Storage Seasonal %

<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

# Duke Energy Kentucky Hedging Program - Current Position November 2015 - October 2016 As of 08/19/2014

Nov-15 Dec-15 Jan-16 Feb-16 Mar-16 Apr-16 May-16 Jun-16 Jul-16 Aug-16 Sep-16 Oct-16 Load Forecast City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawais (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price ( Fixed Price ( Collar Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated EGC per Dth at City Gate Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



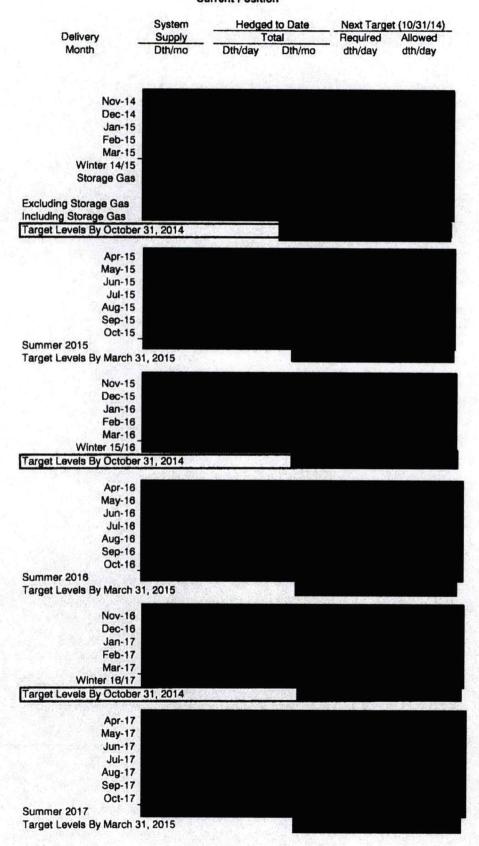
# Duke Energy Kentucky Hedging Program - Current Position November 2016 - October 2017 As of 08/19/2014

Nov-16 Dec-16 Jan-17 Feb-17 Mar-17 Apr-17 May-17 Jun-17 Jul-17 Aug-17 Sep-17 Oct-17 Load Forecast City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) Fixed Price Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

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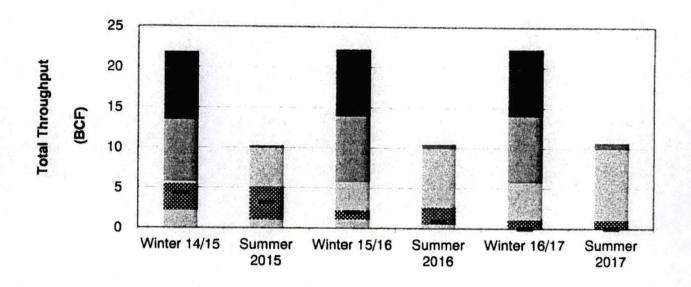
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#### Duke Energy Kentucky Hedging Program Current Position

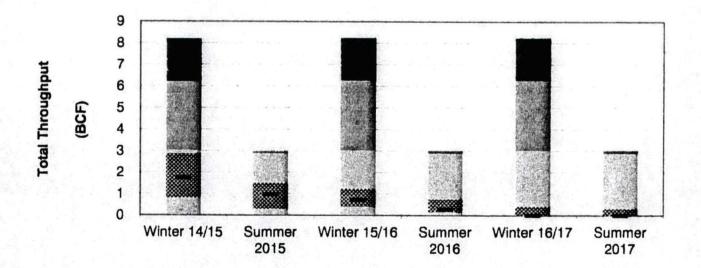


### Hedging Strategy Current Position - August 22, 2014

### **Duke Energy Ohio**



### **Duke Energy Kentucky**

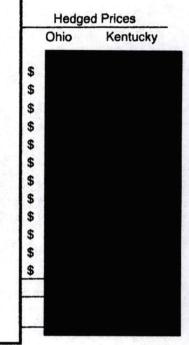


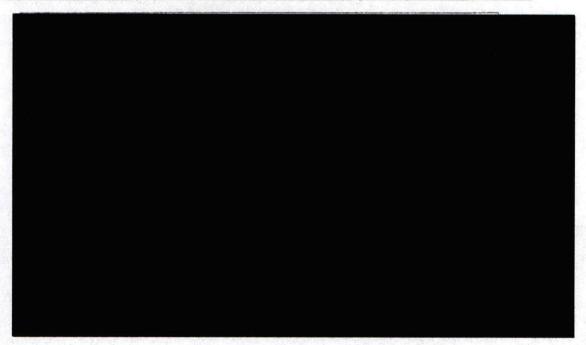
■ Target Base Swing Storage - Hedged

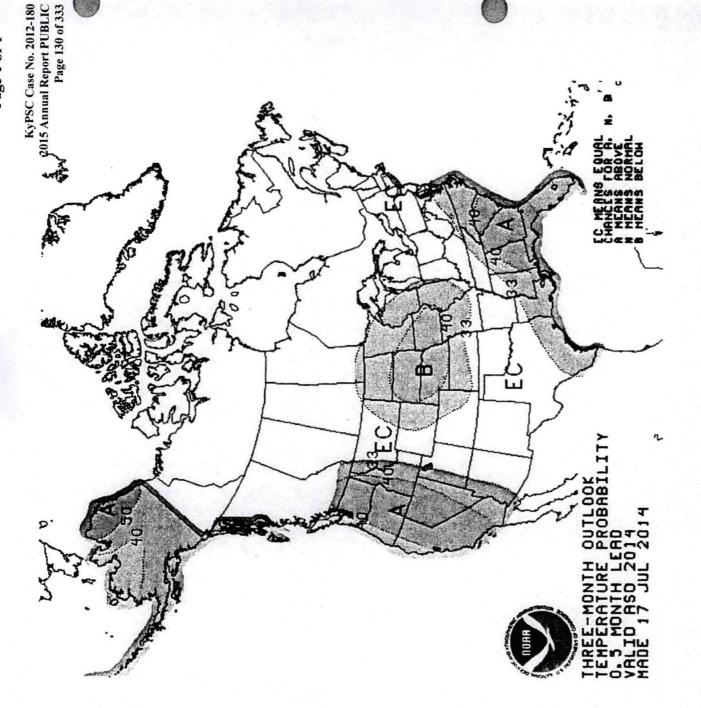
# COMPARISON OF HISTORIC SPOT & PROJECTED PRICES TO CURRENT FUTURES PRICES

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		ic Prices: osing Price			
	5-yr. avg. (09/10-13/14)	(2013-2014)	PIRA 25-Jul-14	EIA 8-Jul-14	NYMEX 21-Aug-14
Sep	\$3.31	\$3.57		\$4.560	\$3.906
Oct	\$3.57	\$3.50		\$4.590	\$3.940
Nov	\$3.61	\$3.50		\$4.650	\$4.010
Dec	\$3.93	\$3.82		\$4.780	\$4.110
Jan	\$4.18	\$3.35		\$4.810	\$4.177
Feb	\$4.21	\$3.23		\$4.680	\$4.212
Mar	\$3.87	\$3.43	45	\$4.550	\$4.093
Apr	\$3.77	\$3.98		\$4.260	\$3.841
May	\$3.93	\$4.15		\$4.160	\$3.830
Jun	\$3.94	\$4.15		\$4.350	\$3.837
Jul	\$3.99	\$3.71		\$4.460	\$3.836
Aug	\$3.88	\$3.46		\$4.480	\$3.849
12 Month Avg	\$3.85	\$3.65		\$4.528	\$3.970
	er Average			\$4.409	\$3.863
Winter	Average			\$4.694	\$4.120



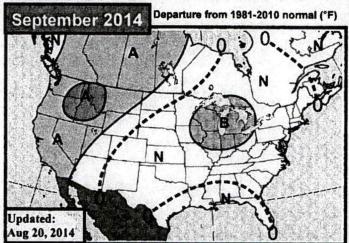




# EarthSat 30-60 Day Outlook

Wednesday, August 20, 2014

Meteorologists: KT/BH/SS



+3.0 to +4.9 +2.0 to +2.9 +1.0 to +1.9

Departure from 1981-2010 normal (°F) October 2014 Updated: Aug 20, 2014 . 0 -1.0 to -1.9 -2.0 to -2.9 -3.0 to -4.9

-0.9 to 0.9



### General pattern remains unchanged

Warmth still based out West

The September outlook is mostly unchanged except for a slight reduction of the +2F area in the Northwest. The overall pattern is generally consistent with what has been experienced through most of the summer with heat remaining focused in the West while cool opportunities are seen across the eastern half of the US with below normal temperatures expected in the upper Midwest. Overall confidence remains limited as El Niño continues to flounder and is unlikely to be a significant factor by September. A negative NAO may be a marginal pattern driver at least at the start of the month, lending to cool potential in the upper Midwest and East, while a continued negative SOI also lends to cool risks. Meanwhile, the ECMWF weeklies showed cool potential across the northern tier through the first half of the month and warm potential in the South.

Sep PWCDD\*\* Forecasts

\*10Y Normal \*04-13

Sep 2014 Fcst:

165

10Y Normal\* 184.4 30Y Normal 172.6 Sep-2013 195.4

No Change

\*\*National Pop-Weighted CDDs



#### No changes to the forecast

### Uncertainty with El Niño limits confidence

The October outlook remains unchanged, but forecast confidence continues to decrease as the development of El Niño remains very uncertain. The forecast includes somewhat of a persistent pattern, but one that would gain some support if El Niño did develop by October as El Niño correlates strongly with cool conditions in the mid-continent. However, if El Niño does not develop, the main pattern driver becomes quite uncertain. One teleconnection that could become a more significant pattern driver heading into the cold season in lieu of El Niño is the QBO which has been trending strongly negative over the past few months. A negative QBO has a fairly weak correlation in Fall versus the Winter, but does have at least some correlation with a pattern that is nearly opposite of the current forecast with warmth in the mid-continent and East and cool conditions in the West.

Oct GWHDD\*\* Forecasts

\*10Y Normal '04-13

Oct 2014 Fcst:

305

10Y Normal\* 279.6 30Y Normal 289.7 Oct-2013

Oct PWCDD\*\* Fcst: 63 (30 Y N 57.9)

No Change

"National Pop-Weighted CDDs

Aug SO far







Final 30 Day Outlook

Current verif + forecast (8/1-8/31)

With the current forecast now valid out to the end of the month we have a better idea of what August will look like, and it's a pattern that shows some notable differences from our 30/60 forecast. We did capture the idea of heat in the West Coast, but we had belows centered over the mid-continent when in fact the coolest anomalies look to be in the East and in the Interior West while the Midwest and South come in warmer than forecast. The current forecast shows 310.8 PWCDDs for August, just a hair cooler of the 30 year normal of 311.8, cooler than the 10 year normal of 327.6, but warmer than last August (306.6).

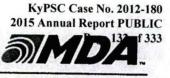


MDA Information Systems LLC 820 West Diamond Ave, Suite 300, Gaithersburg, MD 20878 Tel 240-833-8300 Fax 240-833-8301 www.mdaus.com ©2014 [029000000107.pdf-Version 2.3]

# EarthSat 6-10 Day Forecast—Detailed

Thursday, August 21, 2014

Meteorologist: KT/AC



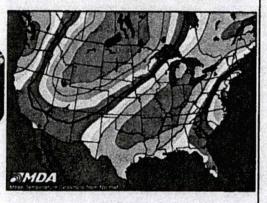
WEATHER SERVICES

### Day 6: Tuesday, Aug 26

Previous Forecast:



Forecast Confidence: 8/10



### Mixed Changes Today

### **Brief Northeast Warmth Mid-Period**

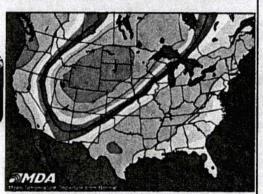
The trough diving into the Central U.S. during the course of the forecast period is less impressive compared to yesterday's outlook, which yields warmer readings across the Midwest during the latter part of the period. Above normal readings only linger along the Midwest through the first half of the period, but there is a warm risk to the Midwest late as the European operational model is much warmer in the Midwest. The warmer push into the Northeast is lacking widespread above normal anomalies during the latter stages of the period. Another trough entering the Pacific Northwest late permits cooler air to filter into the region for then. A potential tropical system is not expected to threaten the South as its track has shifted more to the east.

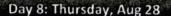
### Day 7: Wednesday, Aug 27

Previous Forecast:



Forecast Confidence: 7/10

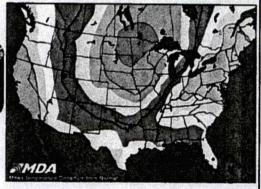




Previous Forecast:



Forecast Confidence: 7/10



### Day 9: Friday, Aug 29

Previous Forecast:



Forecast Confidence: 6/10



### Day 10: Saturday, Aug 30

Previous Forecast:



Forecast Confidence: 6/10



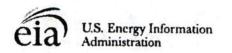
SE -15 | -8 E -5 B

0°F +



3 A +5 A +8 MA+15 SA

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### Weekly Natural Gas Storage Report

for week ending August 8, 2014 | Released: August 11, 2014 at 10:30 p.m. | Next Release: August 21, 2014

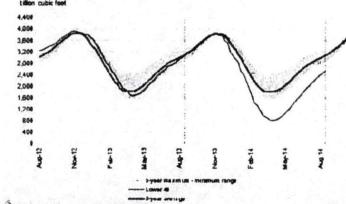
Summary text CSV JSNWorking gas in underground storage, lower 48 states

					Historical Comparisons			
Region		billion	Stocks cubic feet (Bcf)	Year ago (06/08/13)		5-Year average (2009-2013)		
	08/08/14	08/01/14	net change	implied flow	(Bcf)	% change	(Bcf)	% change
East	1,277	1,219	58	58	1,452	-12.1	1,547	-17.5
West	398	387	-11	11	493	-19.3	484	-142
Producing	792	783	9	9	1.052	-24.7	1,031	-23.2
Salt	213	212	1	1	262	-18.7	189	12.7
Nonsait	580	570	10	10	791	-26.7	841	-31.0
Total	2,467	2,389	78	78	2.997	-17.7	3.042	-18.9

#### Summary

Working gas in storage was 2,487 Bcf as of Friday. August 8, 2014, according to EIA estimates. This represents a net increase of 78 Bcf from the previous week. Stocks were 530 Bcf less than last year at this time and 575 Bcf below the 5-year average of 3,042 Bcf. In the East Region, stocks were 270 Bcf below the 5-year average following net injections of 58 Bcf. Stocks in the Producing Region were 239 Bcf below the 5-year average of 1,031 Bcf after a net injection of 9 Bcf. Stocks in the West Region were 68 Bcf below the 5-year average after a net addition of 11 Bcf. At 2,467 Bcf, total working gas is below the 5-year historical range.

#### Working gas in underground storage compared with the 5-year maximum and militimum



Source: U.S. Energy Information Attenuestration

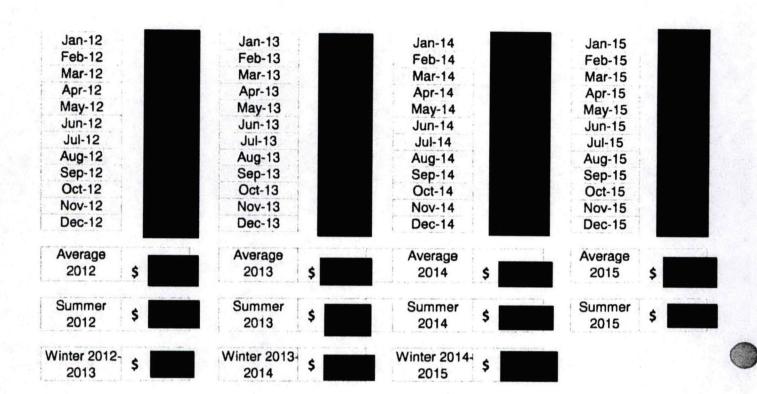
Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2009 through 2013

Source: Form EIA-912, "Weekly Underground Natural Gas Storage Report." The dashed vertical lines indicate ourrent and year-ago weekly particle.

# PIRA North American Gas Price Overview Per MMBTU July 25, 2014 Release

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North American Gas Forecast Monthly

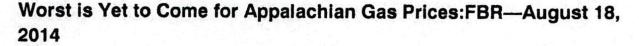
July 25, 2014

NATURAL GAS

# EARLY BIRD U.S. GAS PRICE SCORECARD: 2015

Bearish Neutral Bullish

## **Gas Price Predictions**



Another price blowout may be coming this year as Appalachian shale gas production from the region overwhelms demand.

"With the backdrop of about 4 Bcf/d or 40% higher area production than two years ago, the area is near-term materially oversupplied; as such, we believe the worst of realized prices for the Northeast are yet to come" according FBR Capital.

"If winter does not show up, the consequences on regional oversupply could be significant, and importantly it would take a long while to equilibrate as summer electric demand in the Northeast is simply not elastic enough to absorb gas left over from high spot production plus high current storage plus a warm winter."

FBR gas price forecast has been adjusted down for the rest of 2014 from \$4.50/Mcf to \$4.00.

# Miscellaneous Information

# Utilities Eye Generation Replacement Options—August 14, 2014

In a report from consulting firm Black & Veatch, electric executives see the growth of natural gas generation, greater distributed generation, replacement of coal and nuclear generation, and stagnant load growth in the next 10 years. 43% of the respondents have indicated that load growth rates have not returned to historical levels since the economic downturn of 2008. As a result, many utilities are holding off on large investments in generation.

The trend toward natural gas-fired generation remains strong over the next five years with 50% of the respondents indicating they plan to replace retiring nuclear and coal capacity with gas-fired generation.

"The report also found that industry executives are more concerned about cybersecurity than they were in the past. Cybersecurity jumped from sixth into fourth place among the top concerns in the industry, leaping over concern about aging infrastructure. Reliability remained the top concern in the survey, with environmental regulation ranked second and economic regulation ranked third."

# Marcellus Production Passes 15 Bcf/d With a Whole Lot More Expected—August 6, 2014

For the first time, gas production from the Marcellus Shale exceeded 15 Bcf/d in July. The Appalachian play continues to comprise a growing share of North American gas output.

"The Marcellus region, mostly located in West Virginia and Pennsylvania, is the largest producing shale basin in the United States, accounting for almost 40% of US shale gas production and around 20% of total US gas output." Production from that region has increased from 2 Bcf/d to its current in just over four years.

# Driven by LNG, Industrials, US Demand to Grow 18%--28% by 2024: BP—August 11, 2014

US demand for natural gas should grow between 12.5 Bcf/d to 19.5 Bcf/d, or 18% to 28%, in the next 10 years according to BP analyst Dawn Constantin. LNG exports to account for the bulk of increased demand, but the earliest increases will come from the industrial sector as it responds to the market signal of \$4/Mcf gas.

Constantin cautioned that most increases in demand have big risk associated with regulatory approvals or finding the capital to finance new factories. "But \$4/Mcf natural gas prices sent a clear signal that big multinational industries need to build plants in North America, and those plants will provide the first push to gas demand—2.5 Bcf/d in the next two years."

"How you change demand in power is you change the rules, she said, saying that about one-half of all US coal plants aren't compliant with recent EPA emissions regulations. She thinks gas demand will grow between 1 Bcf/d and 6 Bcf/d from the power sector as utilities sort through their dispatch stack to toss coal plants that are too expensive to bring into compliance."

### DOE Finalizes Changes to LNG Export Review—August 15, 2014

The Department of Energy has finalized changes to the process for reviewing applications to export LNG to countries that do not have free trade agreements with the US.

DOE will not wait for FERC to complete its environmental review of an LNG export project before beginning work on an export authorization request. DOE had been considering applications in the order in which they were filed.

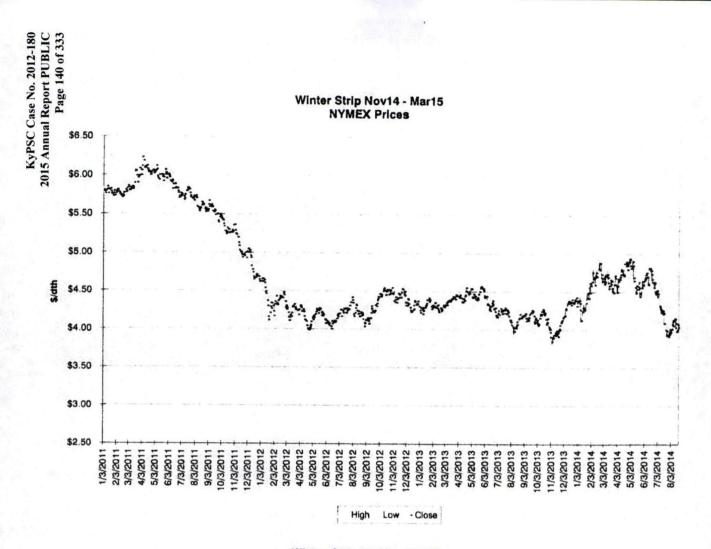
"DOE makes public interest determinations for energy export projects, while FERC is responsible for reviewing the export facility design, engineering and environmental footprint—a far more detailed and lengthy review process than DOE's."

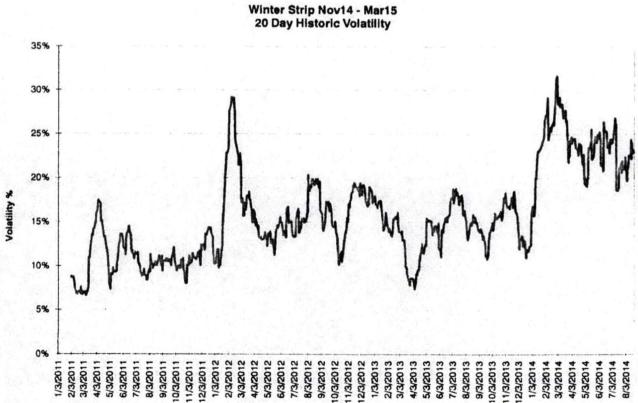


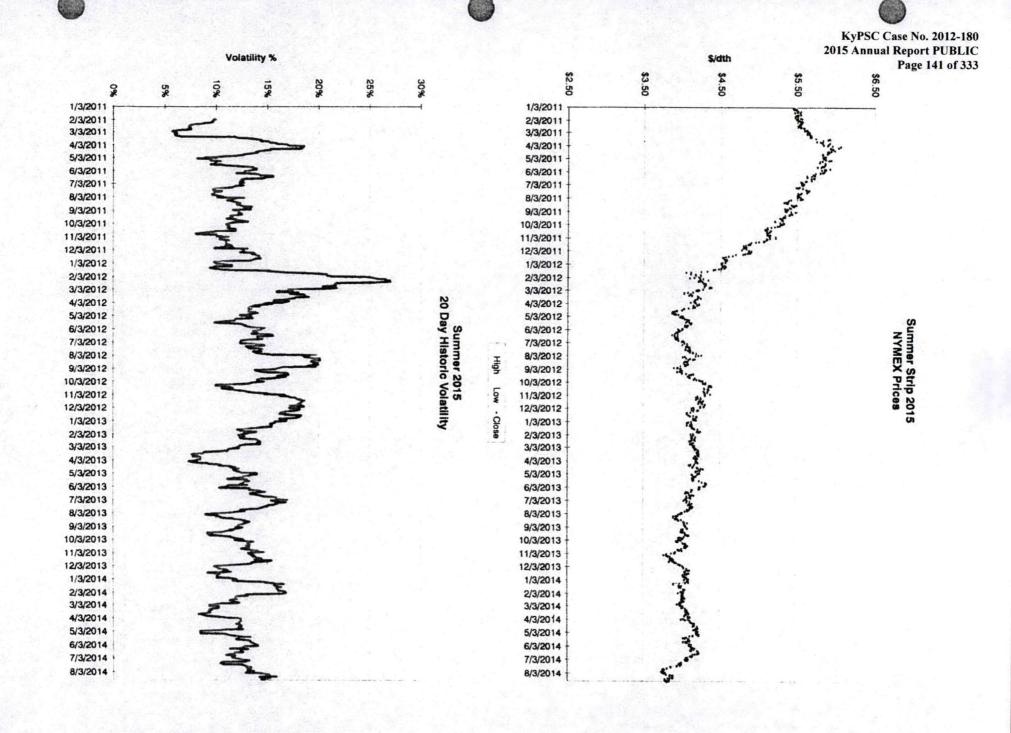
#### KyPSC Case No. 2012-180 2015 Annual Report PUBLIC Page 139 of 333

# Energy Information Administration Henry Hub Pricing Per MMbtu August 12, 2014 Release

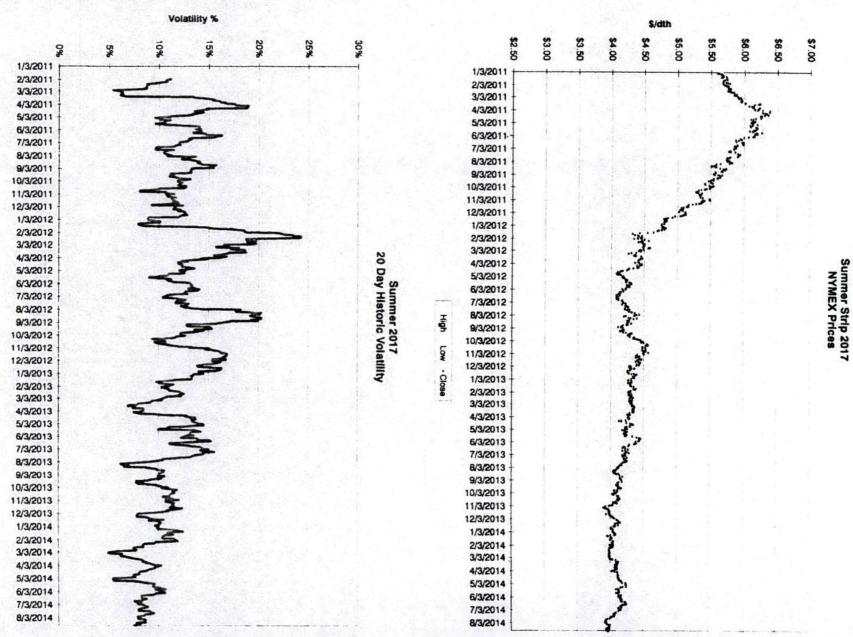
Winter 2012- 2013	\$ 3.470	Winter 2013- 2014	\$ 4.698	Winter 2014- 2015	\$ 4.114			
Summer 2012	\$ 2.686	Summer 2013	\$ 3.770	Summer 2014	\$ 4.237	Summer 2015	\$	3.901
Average 2012	\$ 2.753	Average 2013	\$ 3.728	Average 2014	\$ 4.458	Average 2015	\$	3.995
Dec-12	3.34	Dec-13	4.24	Dec-14	4.18	Dec-15		4.17
Nov-12	3.54	Nov-13	3.64	Nov-14	4.04	Nov-15		4.11
Oct-12	3.32	Oct-13	3.68	Oct-14	3.96	Oct-15		4.06
Aug-12 Sep-12	2.85	Aug-13 Sep-13	3.43 3.62	Aug-14 Sep-14	3.90 3.92	Aug-15 Sep-15		3.98
Jul-12	2.95 2.84	Jul-13	3.62	Jul-14	4.05	Jul-15		3.98
Jun-12	2.46	Jun-13	3.83	Jun-14	4.59	Jun-15		3.88
May-12	2.43	May-13	4.04	May-14	4.58	May-15		3.70
Apr-12	1.95	Apr-13	4.17	Apr-14	4.66	Apr-15		3.77
Mar-12	2.18	Mar-13	3.81	Mar-14	4.90	Mar-15		4.01
Feb-12	2.50	Feb-13	3.33	Feb-14	6.00	Feb-15	t L	4.11
Jan-12	2.67	Jan-13	3.33	Jan-14	4.71	Jan-15		4.23







KyPSC Case No. 2012-180



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Independent Statistics & Analysis

## U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

#### **Natural Gas**

U.S. Natural Gas Consumption.

EIA expects total natural gas consumption will average 72.6 Bcf/d in 2014, an increase of 1.7% from 2013, led by the industrial sector. In 2015, total natural gas consumption increases by 0.4 Bcf/d as continued industrial sector growth offsets lower residential and commercial consumption. Higher natural gas prices this year contribute to a 2.2% decline in natural gas consumption in the power sector to 21.8 Bcf/d in 2014. EIA expects natural gas consumption in the power sector to increase to 22.7 Bcf/d in 2015 with lower natural gas prices and the retirement of some coal plants.

#### U.S. Natural Gas Production and Trade.

EIA expects natural gas marketed production to grow by an annual rate of 5.3% in 2014 and 2.1% in 2015. STEO projects that strong increases in the Lower 48 states will offset Gulf of Mexico declines. As of May 2014, the most recent month for which EIA data are available, marketed production was more than 4 Bcf/d greater than it was in May 2013. Rapid natural gas production growth in the Marcellus formation has contributed to low natural gas forward prices in the Northeast, and as a result new infrastructure has been proposed to take gas to other market regions. In June, the eastward-flowing Rockies Express Pipeline (REX) began service on its Seneca Lateral, which will take Marcellus gas westward to the Midwest. REX's parent company, Tallgrass Energy, plans to add bidirectional capability on a significant portion of REX's easternmost segment.

Growing domestic production is expected to continue to put downward pressure on natural gas imports from Canada, and increase exports to Mexico. As a result, EIA projects net imports to decline to 3.3 Bcf/d in 2014 and to 2.6 Bcf/d in 2015. Liquefied natural gas (LNG) imports have fallen over the past several years because higher prices in Europe and Asia are more attractive to sellers than the relatively low prices in the United States. Several companies are planning to build liquefaction capacity to export LNG from the United States. Cheniere Energy's Sabine Pass facility is expected to be the first to liquefy natural gas produced in the Lower 48 states for export. It is scheduled to come online in stages beginning in late 2015.

#### Natural Gas Inventories.

Natural gas working inventories totaled 2,389 Bcf as of August 1, which was 538 Bcf lower than the same time last year and 608 Bcf lower than the previous five year (2009-13) average. The injection season began somewhat slowly in April, but has continued at a strong pace, with injections averaging

above the five-year average throughout most of the injection season. EIA expects working gas stocks will reach 3,463 Bcf at the end of October, 353 Bcf lower than at the same time last year.

#### **Crude Oil Prices**

North Sea Brent crude oil spot prices averaged \$107/bbl in July, a decrease of \$5/bbl from June. July was the 13th consecutive month in which average Brent crude oil spot prices fell within a relatively narrow range of \$107/bbl to \$112/bbl. The forecast Brent crude oil price averages \$108/bbl in 2014, \$1/bbl lower than in last month's STEO, and \$105/bbl in 2015, which is unchanged from last month's STEO.

The WTI crude oil spot price increased from an average of \$102/bbl in May to \$106/bbl in June, before falling to \$104/bbl in July. Driven in part by the relocation of crude oil to refining centers along the Gulf Coast through new pipelines, crude oil inventory levels at the Cushing, Oklahoma, storage hub, the futures market's delivery point for WTI, have fallen by more than half since early this year, from nearly 42 million barrels on January 24 to below 18 million barrels on July 25, the lowest level since October 2008. The discount of WTI crude oil to Brent crude oil averaged more than \$13/bbl from November 2013 through January 2014. Record high refinery runs contributed to the WTI discount falling to \$3/bbl in July, which was the same level seen during July 2013 when refinery runs were similarly at their seasonal peak for the year. EIA now expects the discount of WTI to Brent crude oil to average \$7/bbl in the second half of 2014 and \$9/bbl in 2015, reductions of \$2/bbl and \$1/bbl, respectively, from last month's STEO.

#### Gas Resources Hedging Program Market Indicators Summary September 25, 2014

	Price Pressure	Term	Comments	Page
Weather				
Long Term Forecast (Dec 14Feb 15)	<b>+</b>	Long	NOAA predicting above average temperatures for December 2014 February 2015 from the west coast bisecting the CONUS through New England. Below normal temperatures in Texas.	13
Mid Term Forecast (30-60 days)		Long	October is predicted to be 1.9% colder than normal based on 10 year normals and November weather is predicted to be 6.5% colder than normal.	14
Short Term Forecast (6-10 days)	<b>→</b>	Short	Above normal temperatures early in the period in Central US moving to the East later in the period.	15
Tropical Storm Activity		Short	Tropical cyclone formations not expected for the next 5 days.	
Storage Inventory				35.7
EIA Weekly Storage Report		Long	Storage injections for the week ending September 19th were 97 Bcf. Storage levels are at 2.988 TCF which is 11.4% lower than last year and 12.5% lower than the 5 year average.	16
Industry Publications				
PIRA Energy Group Winter 2014/15: Summer 2015:	1	Long	U.S. GAS PRICE SCORECARD: November 2014 to March 2015 Gas Price Outlook "Bearish" based on fundamentals such as "Lower 48 Gas Production", "US Storage Levels", and "Residential/Commercial".	17-1
Gas DailyGas Price Predictions	+	Long	Barclay's revised price target down 5% to \$4.01 for 2015 citing production gains will offset any demand increase. Also citing gas supplies continuing to outpace increase in demand, Bernstein cut 2015 price forecast 11% to \$4/Mcf. According to Bernstein, there is light at the end of the tunnel but is 3 years away with increased demand from LNG exports, Mexico exports and EPA regulations becoming effective. Raymond James cut 2015 price forecast from \$4.25/MMBtu to \$3.65/MMBtu citing same reasons.	19-20
Gas DailyMiscellaneous			According AGA, growing competition from industrial and electric generation users will increase gas bills slightly higher this winter based on more normal temperatures this winter. Heating bills will increase about 7% on average this winter. Carib Energy project is the second major proposed terminal to receive full federal authorization. 1st liquefaction train is expected to be placed in service in 2017, with the other two trains scheduled to follow in 2018. Barclay's expects demand for gas to climb 1.66 Bcf/d in 2015 as coal plants retire.	21-2
Government Agencies				
Energy Information Administration Winter 2014/15: \$4.076 Summer 2015: \$3.753	↑ ↓	Long	The projected Henry Hub natural gas spot price averages \$4.457/MMBtu for 2014 and \$3.870/MMBtu for 2015.	23
Fechnical Analysis		LLAL		
Winter 2014-15 Strip Chart	<b>←→</b>		Closed at \$4.06	24
Summer 2015 Strip Chart	++		Closed at \$3.85	25
Winter 2015-16 Strip Chart	++		Closed at \$4.15	26
Summer 2016 Strip Chart	-		Closed at \$3.99	27
Winter 2016-17 Strip Chart	<b>←→</b>		Closed at \$4.31	28
Summer 2017 Strip Chart	1 + > 1	Short	Closed at \$4.14	29
Demand	-	Long	EIA projects total natural gas consumption will average 72.6 Bcf/d in 2014, an increase of 1.8% from 2013, led by the industrial sector. 2015 gas consumption increases by 0.2 Bcf/d based on continued growth in the industrial sector.	30
Supply	-	Long	Total marketed production expected to increase by an average rate of 5.3% in 2014 and 2.1% in 2015.	30-31
Oil Market	-	Long	Brent crude projected to average \$106 per barrel in 2014 and \$103 per barrel in 2015.	31

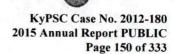
#### Meeting Minutes: 428 Annex Conference Room - 1:00 pm

Attendees: Jeff Kern, Chuck Whitlock, Rick Colvin, Mitch Martin, Steve Niederbaumer

Discussed market fundementals such as weather, storage inventory levels, and economic factors such as supply and demand. Discussed the PIRA and EIA forecasts as well as analyst predictions concerning price expectations and discussed Winter and Summer Strip Charts based on Technical Analysis. Significant discussion regarding storage took place, while there still is a large deficit from the five-year and one-year average, storage injections this injection season have been significantly above average and end of the injection season balance is estimated to be 3.5 Tcf. Discussed our current postions within Kentucky hedging plans and that hedging percentages will change November 1st. DEK have nothing hedged after the Summer 2016 strip. Based on current prices, a decision was made to hedge additional volumes for the April 2016—March 2017 strip. Discussion took place regarding the product to be used—Cost Averaging was choosen due to low volatility and the belief that prices may drop as the result of strong storage injections.

#### Duke Energy Kentucky Hedging Program - Current Position November 2013 - October 2014 As of 09/23/14

Nov-13 Dec-13 Jan-14 Feb-14 Mar-14 May-14 Jun-14 Jul-14 Aug-14 Apr-14 Sep-14 Oct-14 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other "Withdrawals" (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) **Fixed Price Fixed Price Fixed Price Fixed Price Fixed Price** Fixed Price Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal % (1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



# Duke Energy Kentucky Hedging Program - Current Position November 2014 - October 2015 As of 09/23/14

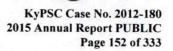
Nov-14 Dec-14 Jan-15 Feb-15 Mar-15 Apr-15 May-15 Jun-15 Jul-15 Aug-15 Sep-15 Oct-15 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) **Total Requirements (Mcf)** TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price ( Fixed Price ( Fixed Price ( Fixed Price ( Collar Fixed Price ( Fixed Price ( Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

## Duke Energy Kentucky Hedging Program - Current Position November 2015 - October 2016 As of 09/23/14



<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



#### **Duke Energy Kentucky Hedging Program - Current Position** November 2016 - October 2017 As of 09/23/14

Mar-17

Feb-17

Nov-16

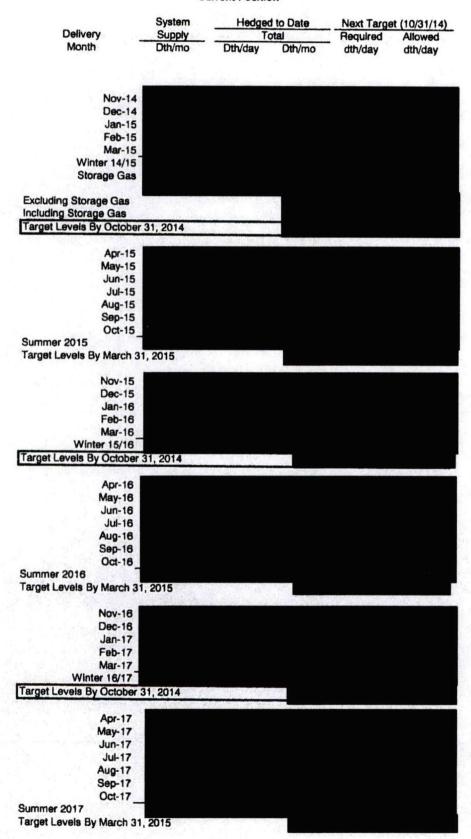
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Dec-16

Jan-17

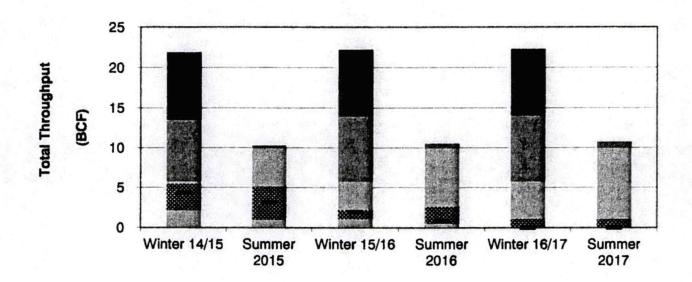
Apr-17 May-17 Jun-17 Jul-17 Aug-17 Sep-17 Oct-17 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal % (1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

#### Duke Energy Kentucky Hedging Program Current Position

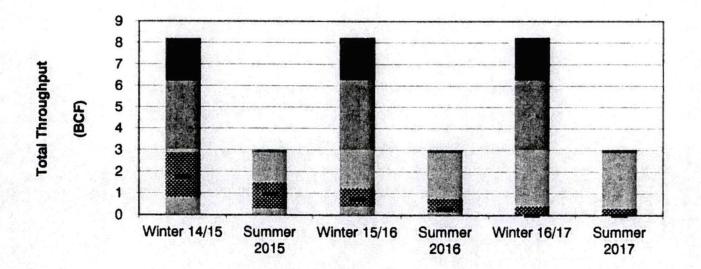


### Hedging Strategy Current Position - September 23, 2014

#### **Duke Energy Ohlo**



#### **Duke Energy Kentucky**

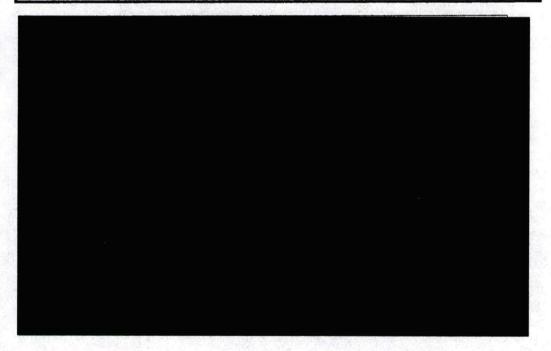


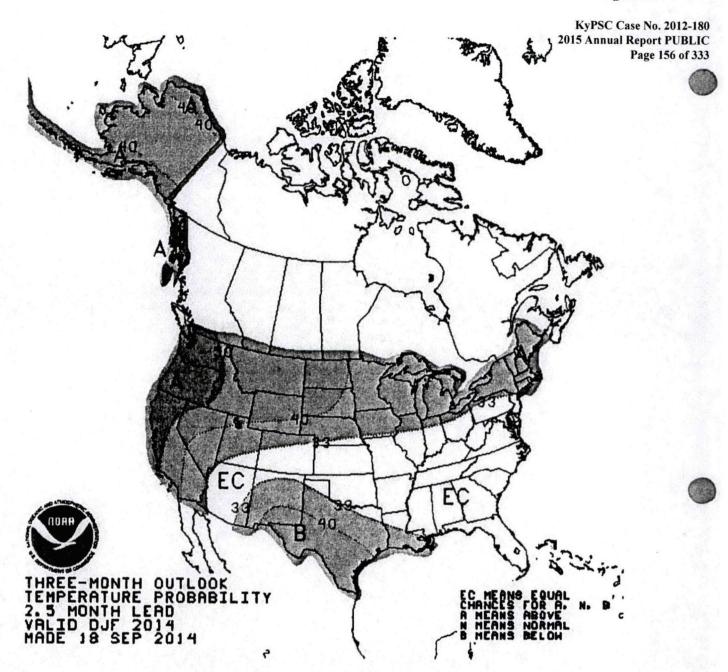
■ Target ■ Base ■ Swing ■ Storage - Hedged

## COMPARISON OF HISTORIC SPOT & PROJECTED PRICES TO CURRENT FUTURES PRICES

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	5-yr. avg.	Last Year	PIRA	EIA	NYMEX	Hedg	ged Prices
	(09/10-13/14)	(2013-2014)	23-Sep-14	9-Sep-14	25-Sep-14	Ohio	Kentucky
Oct	\$3.57	\$3.50		\$3.960	\$3.891	s	
Nov	\$3.61	\$3.50		\$4.030	\$3.941	\$	
Dec	\$3.93	\$3.82		\$4.160	\$4.028	\$	
Jan	\$4.18	\$3.35		\$4.200	\$4.103	\$	
Feb	\$4.21	\$3.23		\$4.060	\$4.096	\$	
Mar	\$3.87	\$3.43		\$3.930	\$4.029	\$	
Apr	\$3.77	\$3.98		\$3.670	\$3.791	\$	
May	\$3.93	\$4.15		\$3.580	\$3.800	\$	
Jun	\$3.94	\$4.15		\$3.750	\$3.829	\$	
Jul	\$3.99	\$3.71		\$3.820	\$3.860	\$	
Aug	\$3.88	\$3.46		\$3.810	\$3.871	\$	
Sep	\$3.53	\$3.57		\$3.760	\$3.858	\$	
2 Month Avg	\$3.87	\$3.65	12 - 12 - 12 - 12 - 12 - 12 - 12 - 12 -	\$3.894	\$3.925		
	er Average			\$3.764	\$3.843		
Winter	Average			\$4.076	\$4.039		





### EarthSat 30-60 Day Outlook

Wednesday, September 24, 2014

Meteorologists: PV/BH/SS





Departure from 1981-2010 normal (°F) November 2014 Updated: Sep 24, 2014 +3.0 to +4.9 +2.0 to +2.9 +1.0 to +1.9 0 -1.0 to -1.9 -2.0 to -2.9 -3.0 to -4.9

\_\_\_\_\_-0.9 to 0.9



#### Warmer East and West Coasts Still cool mid-continent

The final October outlook shifts warmer for much of the nation, though cooler than normal readings remained favored over the middle part of the country. These warm changes today result in more aboves favored along the East Coast and an area of +2F anomalies added to California while the area of belows across the mid-continent was reduced slightly in the central Midwest. The underlying pattern remains the same with ridging expected to build across the West heading into the second week of October, allowing for cool conditions downstream in the midcontinent, while a lingering +NAO keeps conditions warmer in the East. There is some potential risk that the pattern could become more amplified in the Northeast Pacific due to increased tropical activity in the Western Pacific with the potential for stronger cool anomalies in the mid-continent and stronger warmth in the West evolving at mid-month.

Oct GWHDD\*\* Forecasts

\*10Y Normal '04-13

Oct 2014 Fcst:

285

10Y Normal\* 30Y Normal 289.7 Oct-2013

Oct PWCDD\*\* Fcst: 65 (+5) (30 Y N 57.9)

Change: -15



Belows shift to south-central US

Warmer in the West

Some modifications were made to the November outlook, though none of these changes were overly strong nor do they result in a drastic change in expectations. Cooler than normal readings remain favored from the Midwest and much of the Plains into the Southeast, but the core of the coldest conditions is now expected back a bit further west from the Lower Midwest into the South-Central US. In the West the outlook was shifted warmer to better account for potential ridging that lingers from October into late fall. Aside from the western ridge the outlook remains guided by an expected weak El Niño as well as the -QBO. Much like October a stronger northwest ridge could leave more belows over the Midwest and the Plains. Most of the long-range model guidance presents some warmer risks to the forecast, especially along the northern tier of the US.

Nov GWHDD\*\* Forecasts

\*10Y Normal '04-13

Nov 2014 Fcst:

575

10Y Normal\* 540.1 30Y Normal 561.7 Nov-2013 606.2

Change: +5

"National Pop-Weighted CDDs







Final 60 Day Outlook

Final 30 Day Outlook

Cuttent verif + forecast (8/1-9/30)

The pattern has changed notably since this time last week with a much warmer look for the end of the month across the eastern half of the US. As a result. September as a whole now looks to be on the positive side of normal in most of the US except for the central and southwestern Midwest. Both the final 60 and 30 Day outlooks were too cool as a whole, missing on the strong warmth in the West and the aboves in Texas and in the far north-central US. At this point, September is expected to total 194.0 PWCDDs, warmer than the 10-year normal but slightly cooler than last year (195 4).

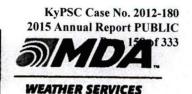


MDA Information Systems LLC 820 West Diamond Ave, Suite 300, Gaithersburg, MD 20878 Tel 240-833-8300 Fax 240-833-8301 www.mdaus.com @2014 [029000000107.pdf-Version 2.3]

### EarthSat 6-10 Day Forecast—Detailed

Thursday, September 25, 2014

Meteorologist: PV/AC



Day 6: Tuesday, Sep 30

Previous Forecast:



Forecast Confidence: 8/10



Ridging In Midwest Permits Widespread Much Aboves

Cool Air Builds Over the West

While upper level remains favored to build into the Midwest and eventually the East the East Coast comes in cooler today compared to yesterday's forecast. This is due to concerns from a potential coastal low early followed high pressure wedging into the region, with cooler risks if this high is stronger. Meanwhile, confidence is high across the Midwest under the ridge as much above normal temperatures will loom over much of the region through most of the period. A high pressure system in the West and a trough building over this region permits a cooler outlook to exist mid to late period. Confidence is lower later in the period in the West and Mid-Continent due to model disagreement with regard to cool air potential and timing.

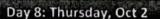
#### Day 7: Wednesday, Oct 1

Previous Forecast:



Forecast Confidence: 8/10





Previous Forecast:



Forecast Confidence: 7/10



#### Day 9: Friday, Oct 3

Previous Forecast:



Forecast Confidence: 7/10

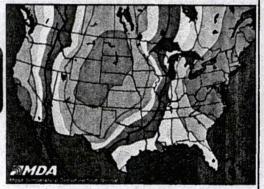


#### Day 10: Saturday, Oct 4

Previous Forecast:



Forecast Confidence: 6/10



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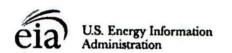
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#### Weekly Natural Gas Storage Report

for week ending September 19, 2014 | Released: September 25, 2014 at 10 30 a.m. | Next Release: October 2, 2014

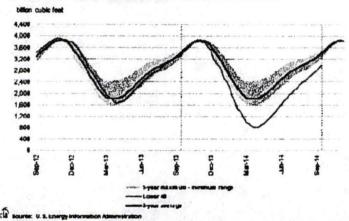
Summary text CSV JSNWorking gas in underground storage, lower 48 states

						Historical C	ompariso	ns
		billion		ear ago 9/19/13)	5-Year average (2009-2013)			
Region	09/19/14	09/12/14	net change	implied flow	(Bcf)	% change	(Bcf)	% change
East	1,646	1,580	68	86	1,734	-5.1	1,836	-10.3
West	445	445	0	0	518	-14.1	489	-9.0
Producing	897	866	31	31	1,121	-20.0	1,089	-17.6
Salt	234	222	12	12	266	-12.0	197	18.8
Nonsalt	664	644	20	20	856	-22.4	893	-25.6
Total	2.988	2,891	97	97	3,374	-11.4	3,414	-12.5

#### Summary

Working gas in storage was 2,988 Bcf as of Friday, September 19, 2014, according to EIA estimates. This represents a net increase of 97 Bcf from the previous week. Stocks were 386 Bcf less than lest year at this time and 426 Bcf below the 5-year average of 3,414 Bcf. In the East Region, stocks were 190 Bcf below the 5-year average following net injections of 66 Bcf. Stocks in the Producing Region were 192 Bcf below the 5-year average of 1,089 Bcf after a net injection of 31 Bcf. Stocks in the West Region were 44 Bcf below the 5-year average after no net change. At 2,988 Bcf, total working gas is below the 5-year historical range.

#### Working gas in underground a torage compared with the 8-year maximum and manimum



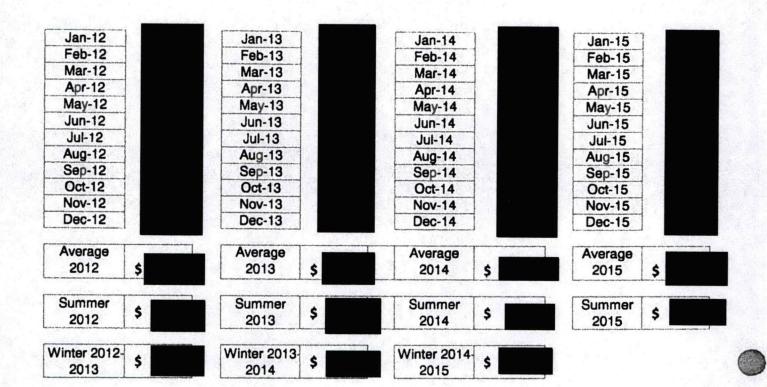
Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2009 through 2013.

Source: Form EIA-912, "Weekly Underground Natural Gee Storage Report." The dashed vertical lines indicate current and year-ago weekly periods.

# PIRA North American Gas Price Overview Per MMBTU September 23, 2014 Release

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North American Gas Forecast Monthly

September 23, 2014

NATURAL GAS

#### U.S. GAS PRICE SCORECARD: NOVEMBER 2014 - MARCH 2015

Bearish Neutral Bullish

#### **Pricing Predictions**



#### Barclays Trims 2015 Forecast to \$4.01/MMBtu—September 15, 2014

Despite a 40% increase in their forecast of natural gas demand for power in 2015, Barclays revised its price target for the year down 5% to \$4.01/MMBtu, saying production gains will offset any demand increase.

According to Barclays, 30 GW of coal-fired generation will retire in 2015, adding to the demand for more gas-for-power, even though they expect total power demand for gas will shrink slightly.

Gas prices will find a level that displaces just enough coal, while keeping storage at normal end-of-season levels, Barclays said of next year's dynamics. Coal-to-gas displacement helps balance the market and prevents storage injections from overshooting available capacity when prices fall too low.

Barclays indicated there will be some continued growth within the industrial sector next year along with higher exports to Mexico, but the growth in production will likely put downward pressure on prices unless we get another winter like the one we just had."

## Bernstein Cuts 2015 Price Forecast 11% to \$4/Mcf—September 11, 2014

Bernstein Research cut its 2015 price forecast 11% to \$4/Mcf from \$4.50/Mcf stating that natural gas supplies, primarily from wet gas plays, will continue to outpace any increase in demand in 2015

Bernstein said gas production associated with oil and liquids drilling will continue to stay at its frantic pace until oil prices move lower and meanwhile, the associated gas from oily and wet plays is outstripping any demand for the commodity.

According to Bernstein, gas production will increase a net 3 Bcf/d in 2015 while demand will grow 1.2 Bcf/d, primarily from retirement of coal power plants.

Bernstein offered a ray of hope for gas producers but it's at least three years away. "There is a light at the end of the tunnel: LNG exports begin to grown in earnest beyond 2017 and reach 6 Bcf/d by 2020," Bernstein said in a note to clients. "If the EPA's proposed carbon dioxide regulations come into effect, an incremental 7 Bcf/d of gas demand would be required by 2020." "The biggest risk to our outlook is a drop in oil

price that would force E&Ps to reduce drilling and limit gas supply growth over the next 24 months."

#### Ray James Cuts 2015 Forecast 14%--September 9, 2014

Gas production will continue to oversupply the market without a repeat of last winter's frigid winter according to investment bank Raymond James. "Another abnormally cold winter could temporally support US natural gas prices, but counting on abnormal weather is usually not a good investment strategy."

Adkins cut his fourth quarter prediction of \$4.70/MMBtu to \$3.85/MMBtu and his 2015 forecast average to \$3.65/MMBtu from \$4.25/MMBtu. The analyst also cut his long-term expectation to \$4.25/MMBtu from \$4.50/MMBtu through 2020.

"US producers can economically grow US gas supply more than 3 Bcf/d annually through 2020 at gas prices of \$4.25 or lower.

Demand drivers such as LNG exports, Mexican exports, coal retirements, and new industrial plants will start to firm up gas prices starting in 2016, Adkins said, but only to just above \$4/MMBtu.

"The reality is that US gas producers are finding ways to bring online staggering amounts of natural gas at prices well below \$4.50," Adkins said. "These lower gas drilling breakdown costs are likely to fall even further over the next few years as operators continue to drive better gas production efficiencies."

#### Miscellaneous Information



#### Demand To Drive Gas Bills Up This Winter: AGA—September 23, 2014

US residential and commercial natural gas customers can anticipate more normal temperatures this winter, but the price they pay for gas will be "Slightly higher" than last winter because of growing competition from industrial and electric generation users, according to the AGA.

Looking forward, the commodity price of gas has been about 9% higher than the price paid last year. The fixed-charge delivery cost of the gas is about 1.5% higher. As a result of these factors, residential home heating bills will probably increase about "7% on average this winter".

AGA expects US storage inventories may reach a peak of 3.5 Tcf this fall with continued strong supply injections due to the mild weather expected over much of the country.

#### Carib Energy, Cameron LNG Clear Final Hurdle—September 11, 2014

Cameron LNG export project in Louisiana is the second major proposed terminal to receive full federal authorization.

The authorization allows Cameron to export to countries that do not have a Free Trade Agreement with the US the LNG equivalent of 1.7 Bcf/d for 20 years through a large-scale liquefaction and tanker operation in Cameron Parish.

The DOE authorization "marks the last major regulatory hurdle for our Cameron LNG liquefaction-export project, clearing the way for construction to begin on the largest capital project in Sempra Energy's history."

The first liquefaction train is expected to be placed in service in 2017, with the other two scheduled to follow in 2018.

The Sabine Pass terminal in Louisiana, which is being developed by Cheniere Energy, was the first LNG export project to secure final approval from both DOE and FERC.

## Demand For Gas to Climb 1.66 Bcf/d by 2015 as Coal Plants Retire: Barclays—August 27, 2014

US natural gas demand will pick up significantly in 2015 as a number of coal-fired power plants are shuttered, according to Barclays.

Barclays said demand growth in 2015 should be driven by the electricity and industrial sectors, offsetting expected declines in residential and commercial demand.

By far the largest demand growth factor in 2015 is the increase in underlying power demand since a large slew of coal-fired plants are due to retire as a result of upcoming environmental regulations.

Barclays estimates that 45 GW of coal-fired capacity is set for retirement from 2015-2017 due to the upcoming MATS rule, including 30 GW in 2015. Overall, Barclays expects gas demand for power generation in 2015 to increase by an average of 1.66 Bcf/d.

Industrial demand is expected to grow at an annual rate of 570,000 Mcf/d in 2015.

# Energy Information Administration Henry Hub Pricing Per MMbtu September 9, 2014 Release

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4.20

4.06

3.93

3.67

3.58



Jan-12		2.67
Feb-12		2.50
Mar-12		2.18
Apr-12		1.95
May-12		2.43
Jun-12		2.46
Jul-12		2.95
Aug-12		2.84
Sep-12		2.85
Oct-12		3.32
Nov-12		3.54
Dec-12	-	3.34
Average		tuan vita southouseur ean
2012	\$	2.753
Summer		
2012	\$	2.686
Winter 2012- 2013	\$	3.470

Winter 2013- 2014	\$	4.698
Summer 2013	\$	3.770
Average 2013	\$	3.728
Dec-13		4.24
Nov-13		3.64
Oct-13	1 min	3.68
Sep-13		3.62
Aug-13		3.43
Jul-13	i Luni	3.62
Jun-13		3.83
May-13		4.04
Apr-13		4.17
Mar-13		3.81
Feb-13		3.33
Jan-13		3.33

Jan-14	4.71
Feb-14	6.00
Mar-14	4.90
Apr-14	4.66
May-14	4.58
Jun-14	4.59
Jul-14	4.05
Aug-14	3.91
Sep-14	3.93
Oct-14	3.96
Nov-14	4.03
Dec-14	 4.16
Average 2014	\$ 4.457
Summer 2014	\$ 4.240

59	Jun-15	3.75
05	Jul-15	3.82
91	Aug-15	3.81
93	Sep-15	3.76
96	Oct-15	3.88
03	Nov-15	3.94
16	Dec-15	4.04
457	Average 2015	\$ 3.870
240	Summer 2015	\$ 3.753

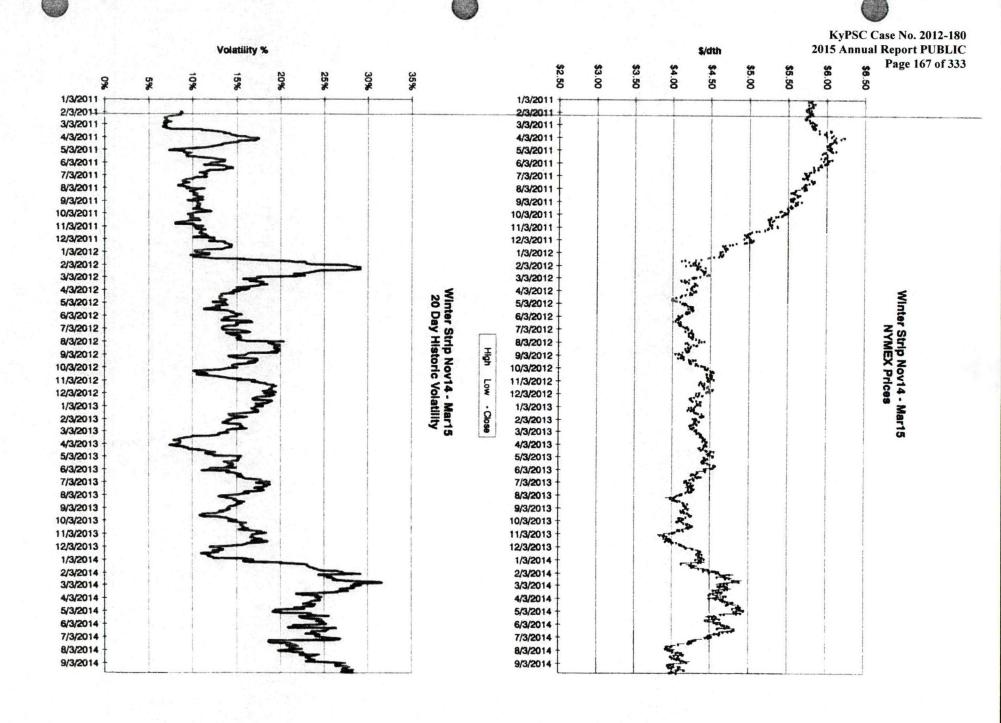
Jan-15 Feb-15

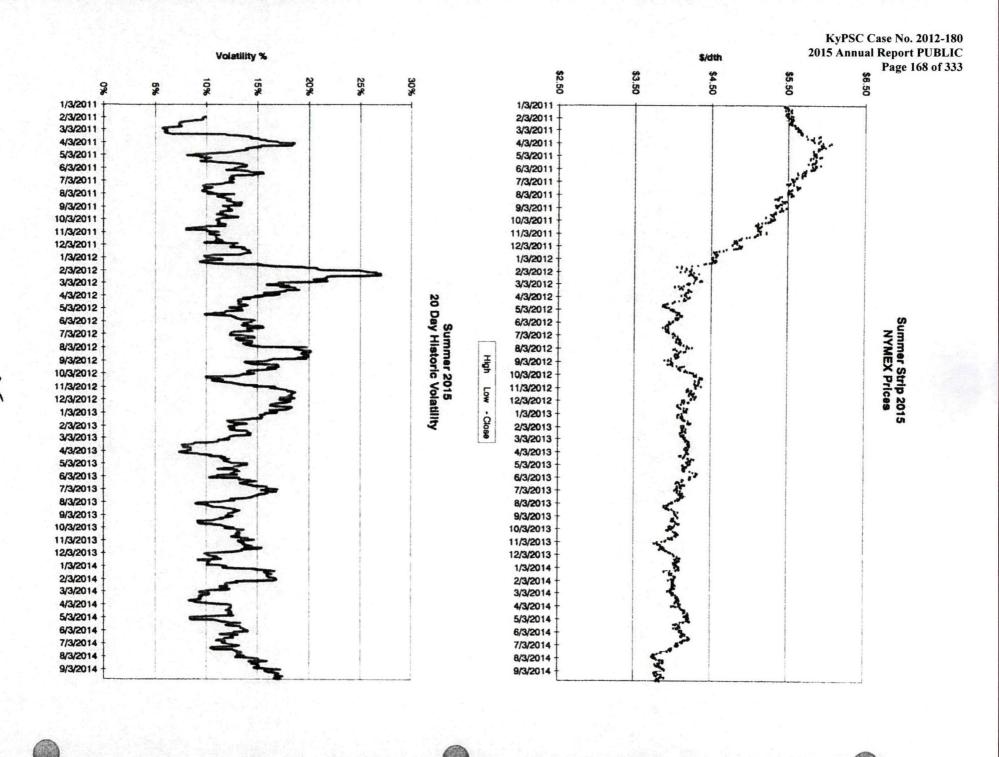
Mar-15

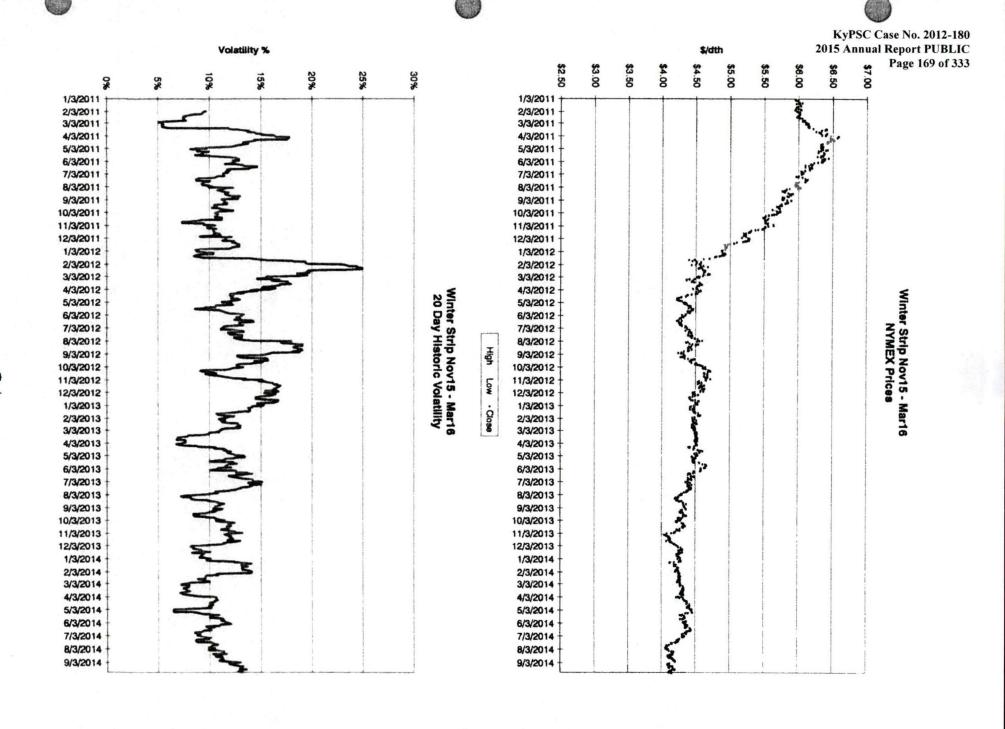
Apr-15

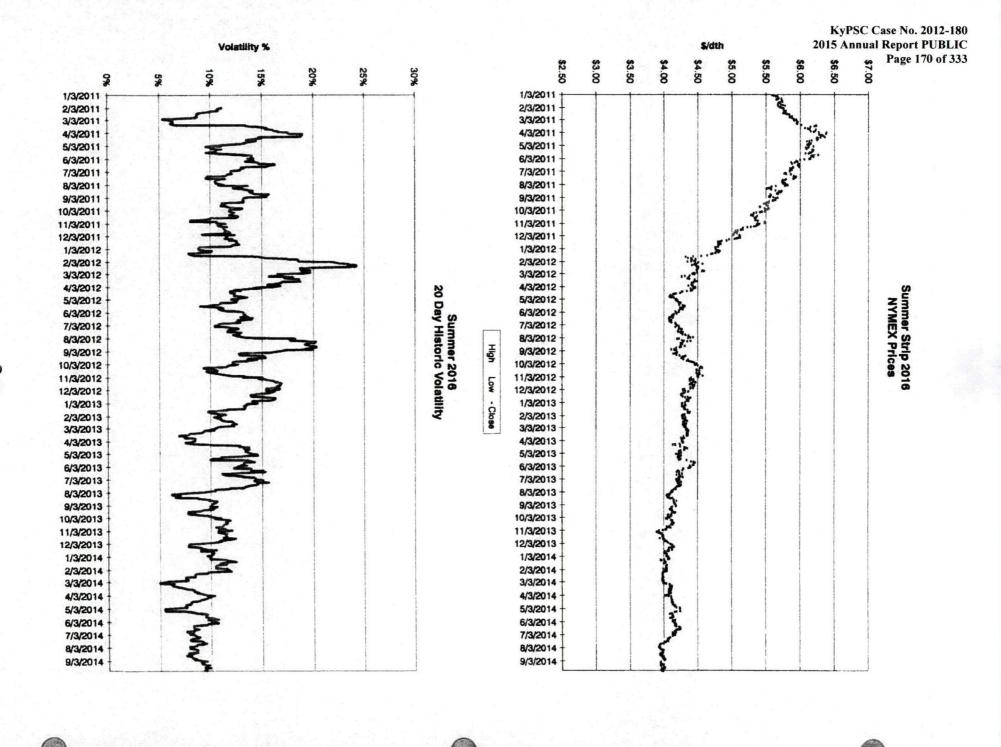
May-15

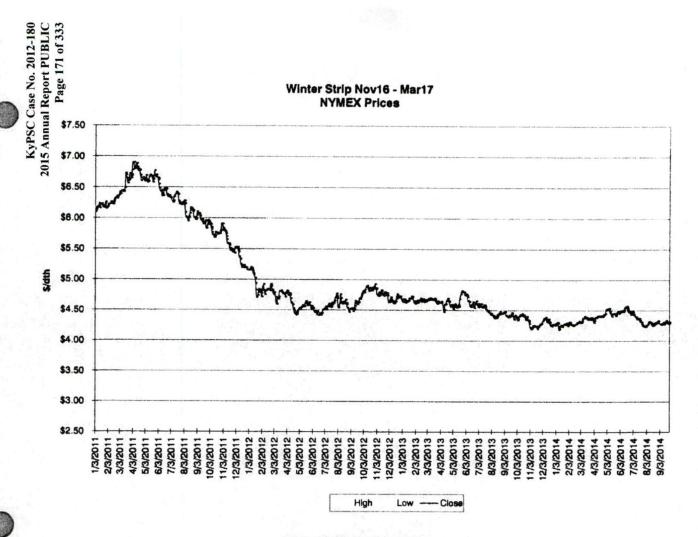
Winter 2014-	4 076
2015	\$ 4.076



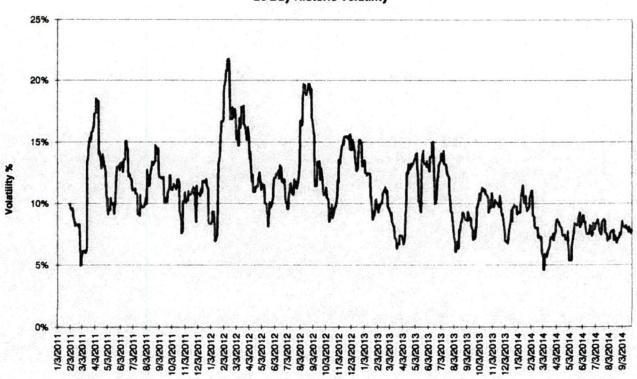




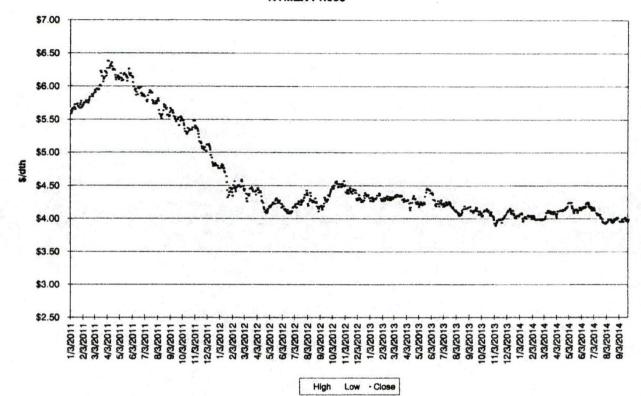




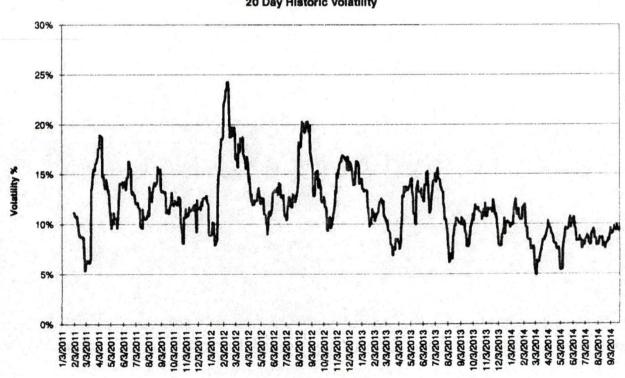




Summer Strip 2017 NYMEX Prices



Summer 2017 20 Day Historic Volatility





Independent Statistics & Analysis

## U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

#### **Natural Gas**

U.S. Natural Gas Consumption.

EIA expects total natural gas consumption will average 72.6 Bcf/d in 2014, an increase of 1.8% from 2013 led by the industrial sector. In 2015, total natural gas consumption increases 0.2% as continued industrial sector growth offsets lower residential and commercial consumption. Higher natural gas prices this year contribute to a 2.0% decline in natural gas consumption in the power sector to 21.9 Bcf/d in 2014. EIA expects natural gas consumption in the power sector to increase to 22.8 Bcf/d in 2015.

#### U.S. Natural Gas Production and Trade.

EIA expects natural gas marketed production to grow by an annual rate of 5.3% in 2014 and 2.1% in 2015. STEO projects that strong increases already seen in the Lower 48 states this year will continue, offsetting declines in the Gulf of Mexico. As of June, the most recent month for which EIA data are available, marketed production was 4.6 Bcf/d greater than it was in June 2013. Rapid natural gas production growth in the Marcellus formation has contributed to low natural gas forward prices in the Northeast, and as a result new infrastructure has been proposed to flow gas to other market regions. In June, the eastward-flowing Rockies Express Pipeline (REX) began service on its Seneca Lateral, which flows Marcellus gas westward to the Midwest. REX's parent company, Tallgrass Energy, plans to add bidirectional capability on a significant portion of REX's easternmost segment.

<u>Growing domestic production is expected to continue to put downward pressure on natural gas imports from Canada, and spur exports to Mexico</u>. Exports to Mexico have been increasing in recent months because of growing demand from Mexico's electric power sector and flat Mexican production. Mexico has been an outlet for U.S. production, particularly from the Eagle Ford Shale in South Texas.

Liquefied natural gas (LNG) imports have fallen over the past four years because higher prices in Europe and Asia are more attractive to sellers than the relatively low prices in the United States. This month's STEO revises the forecast for 2015 LNG net imports to reflect Cheniere Energy's Sabine Pass export terminal beginning service in 2015. EIA now expects the United States will be a net exporter of LNG in 2015. LNG exports are still a very small part of the total picture, however, and overall the United States will remain a net importer of natural gas because of pipeline imports from Canada.

#### Natural Gas Inventories.

Natural gas working inventories totaled 2,709 Bcf as of August 29, which was 471 Bcf lower than the same time last year and 495 Bcf lower than the previous five-year (2009-13) average. The injection season began somewhat slowly in April, but has continued at a strong pace, with injections averaging above the five-year average throughout most of the injection season. EIA expects working gas stocks will reach 3,477 Bcf at the end of October, 339 Bcf lower than at the same time last year.

#### **Crude Oil Prices**

North Sea Brent crude oil spot prices averaged \$102/bbl in August, a decrease of \$5/bbl. Or 4.7%, from July. Brent crude oil prices were driven downward in large part because of weakening global oil demand as well as growing Libyan oil exports. August was the first in 13 consecutive months in which average Brent crude oil spot prices fell outside the relatively narrow range of \$107/bbl to \$112/bbl. The forecast Brent crude oil price averages \$106/bbl in 2014, \$2/bbl lower than in last month's STEO, and \$103/bbl in 2015, \$2/bbl lower than in last month's STEO.

The monthly average WTI crude oil spot price fell from a high of \$106/bbl in June to \$97/bbl in August. After falling to an annual low of \$3/bbl in July, the discount of WTI crude oil to Brent crude oil increased to \$5/bbl in August. While record high refinery runs contributed to the WTI discount falling to \$3/bbl in July, the discount widened in August while refinery runs remained elevated. EIA now expects WTI crude oil prices to average \$93/bbl in the fourth quarter of 2014, \$5/bbl lower than in last month's STEO, and \$95/bbl in 2015. The discount of WTI to Brent crude oil is forecast to widen from current levels, averaging \$10/bbl in the fourth quarter of 2014 and \$8/bbl in 2015.

### Duke Energy Hedging Program Remaining Base Not Yet Locked In Winter 2014-15

			Dth/Day			% System	
November	December	January	February	March	Total	Supply	
					er and the second state of the		
Total Control	(A) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		and Market States				
		Section 2	Programme and the second	The state of the s			

Duke Energy Ohlo
Previously Hedged

Col Gulf Mainline
Tex Gas Zone 1
Tex Gas Zone 1
Tex Gas Zone 1

Previously Hedged

Col Gulf Mainline
Col Gulf Mainline
Total

<u>Duke Energy—Total</u>
Previously Hedged
Total

System Supply

#### Gas Resources Hedging Program Market Indicators Summary October 23, 2014

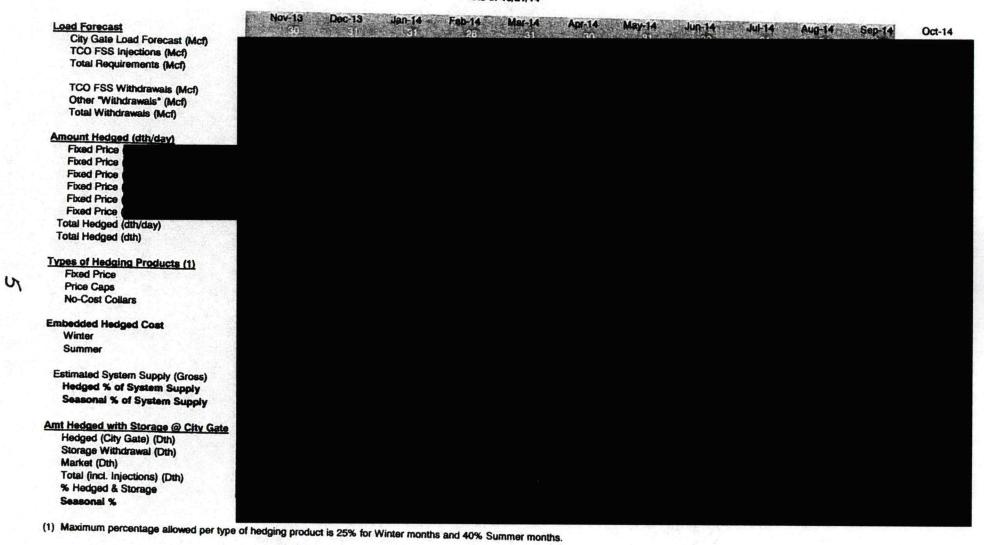
	Price Pressure	Term	Comments	Page
Weather				
Long Term Forecast (Dec 14Feb 15)	<b>←→</b>	Long	NOAA predicting above average temperatures for December 2014 February 2015 from the west coast through New England. Below normal temperatures in the southern states.	13
Mid Term Forecast (30-60 days)	-	Long	November is predicted to be 1.8% colder than normal based on 10 year normals and December weather is predicted to be 3.5% colder than normal.	14
Short Term Forecast (6-10 days)	-	Short	Above normal temperatures over the majority of CONUS during the period with much above east of the Mississippi River early in the period.	15
Storage Inventory				
EIA Weekly Storage Report	1	Long	Storage injections for the week ending October 17th were 94 Bcf. Storage levels are at 3.393 TCF which is 9.0% lower than last year and 9.1% lower than the 5 year average.	16
ndustry Publications				
PIRA Energy Group Winter 2014/15: Summer 2015:	<b>†</b> ↓	Long	U.S. GAS PRICE SCORECARD: November 2014 to March 2015 Gas Price Outlook "Bearish" based on fundamentals such as "Lower 48 Gas Production", "US Storage Levels", and "Residential/Commercial".	17-1
Gas DaliyWinter Weather Forecasts  WSI predicts mild weather through the fall Year's. Cold weather farther east and sour Accuweather, the Polar Vortex will return the around as long as last year. Polar Vortex of February but not as persistent as last year months but not as extreme as last year. Methan last year. Farmer's Almanac predicting Continental Divide east to the Appalachian warm November slowly transition to below			WSI predicts mild weather through the fall and cold weather after New Year's. Cold weather farther east and south than last year. According to Accuweather, the Polar Vortex will return this winter but will not stick around as long as last year. Polar Vortex expected in mid-January into February but not as persistent as last year. Midwest will see several cold months but not as extreme as last year. Midwest 7 to 9 degrees warmer than last year. Farmer's Almanac predicting very cold temps east of the Continental Divide east to the Appalachians. Duke Meteorlogy forecastwarm November slowly transition to below normal temperatures into January and February for much of the Eastern US.	19
Gas DailyGas Price Predictions	<b>†</b>	Long	S&P cuts 2015 forecast 12% to \$3.75/MMBtu citing strong growth in supply and only moderate growth in demand. Prices to stabilize at \$4/MMBtu in 2016 and beyond. Prices will rise in the next several years due to coal generation retirement, growth in exports to Mexico and exports of LNG. BofA reduced 2015 forecast by 11% to \$3.90/MMBtu, predicting 3.1 Bcf/d growth in supply in 2015. ICF 2015 price forecast of \$3.70, Long range prices expected to stabilize between \$5.00 and \$6.00/MMBtu. UBS lowers 2015 forecast 17% to \$3.75/MMBtu, 2016 forecast of \$4.25/MMBtu.	20-2
Government Agencies				
Energy Information Administration Winter 2014/15: \$4.016 Summer 2015: \$3.727	1	Long	The projected Henry Hub natural gas spot price averages \$4.446/MMBtu for 2014 and \$3.839/MMBtu for 2015.	22
Technical Analysis		. 76		
Winter 2014-15 Strip Chart	+	Short	Closed at \$3.76	23
Summer 2015 Strip Chart	+	Short	Closed at \$3.63	24
Winter 2015-16 Strip Chart	+		Closed at \$3.93	25
Summer 2016 Strip Chart	+		Closed at \$3.80	26
Winter 2016-17 Strip Chart	+		Closed at \$4.12	27
Summer 2017 Strip Chart	+	Short	Closed at \$3.97	28
conomy				(1.4)
Demand	-	Long	EIA projects total natural gas consumption will average 72.5 Bcf/d in 2014, an increase of 1.6% from 2013, led by the industrial sector. 2015 gas consumption increases by 0.3 Bcf/d based on continued growth in the industrial sector and higher electric power sector consumption.	29
Supply	-	Long	Total marketed production expected to increase by an average rate of 5.4% in 2014 and 2.0% in 2015.	29
Oil Market	Brent crude oil spot prices averaged \$97/bbl in Septemberwhich is the firmonth Brent crude have averaged below \$100/bbl since June 2012. Brend crude projected to average \$104 per barrel in 2014 and \$102 per barrel in 2015.			

Meeting Minutes: 428 Annex Conference Room - 1:00 pm

Attendees: Jeff Kern, Chuck Whitlock, Rick Colvin, Mitch Martin, Steve Niederbaumer

Discussed market fundamentals including weather (end of the hurricane season), storage levels, PIRA and EIA price forecasts, analysts projections of gas prices, economic influences on supply and demand and the current positions of the DEK Hedging Programs. Significant discussion took place regarding the various Winter Weather Forecasts and the cuts recently announced by several analysts for their 2015 price forecasts. In addition, discussed that all Strips that we are following have hit there low since 2011. After discussion, DEK to hedge Dth/d for the term November 2016--October2017. In addition, discussed the results of the hedge for the storage injections on Texas Gas to replace the withdrawals during the Winter 2014-2015 with and a Cost Averaging deal currently being priced based on trigger prices from October 1, 2014 through November 14, 2014 with

# Duke Energy Kentucky Hedging Program - Current Position November 2013 - October 2014 As of 10/21/14





Duke Energy Kentucky
Hedging Program - Current Position
November 2014 - October 2015
As of 10/21/14

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	Nov-14	D 44			2.00							
oad Forecast	NOV-14	Dec-14	Jan-15	Feb-15	Mar-15	Apr-15	May-15	Jun-15	Jul-15	Aug-15	Sep-15	Oct-15
City Gate Load Forecast (Mcf)												
TCO FSS Injections (Mcf)												
Total Requirements (Mcf)												
TCO FSS Withdrawals (Mcf)												
Other Withdrawals (Mcf)												
Total Withdrawals (Mcf)												
nount Hedged (dth/day)												
Fixed Price (												
Fixed Price (												
Fixed Price (												
Collar												
Fixed Price (												
Fixed Price (												
Total Hedged (dth/day)												
Total Hedged (dth)												
roes of Hedging Products (1)												
Fixed Price												
Price Caps												
No-Cost Collars												
nbedded Hedged Cost												
Winter												
Summer												
stimated System Supply (Gross)												
Hedged % of System Supply												
Seasonal % of System Supply												
it Hedged with Storage @ City Gate												
Hedged (City Gate) (Dth)												
Storage Withdrawal (Dth)												
Market (Dth)												
Total (incl. Injections) (Dth)												
% Hedged & Storage												
Seasonal %												

<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

# Duke Energy Kentucky Hedging Program - Current Position November 2015 - October 2016 As of 10/22/14

Nov-15 Dec-15 Jan-16 Feb-16 Mar-16 Apr-16 May-16 **Load Forecast** Jun-16 Jul-16 Aug-16 Sep-16 Oct-16 City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Fixed Price Cost Ave Collar Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) Fixed Price Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated EGC per Dth at City Gate Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. injections) (Dth) % Hedged & Storage Seasonal %



<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



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# Duke Energy Kentucky Hedging Program - Current Position November 2016 - October 2017 As of 10/21/14

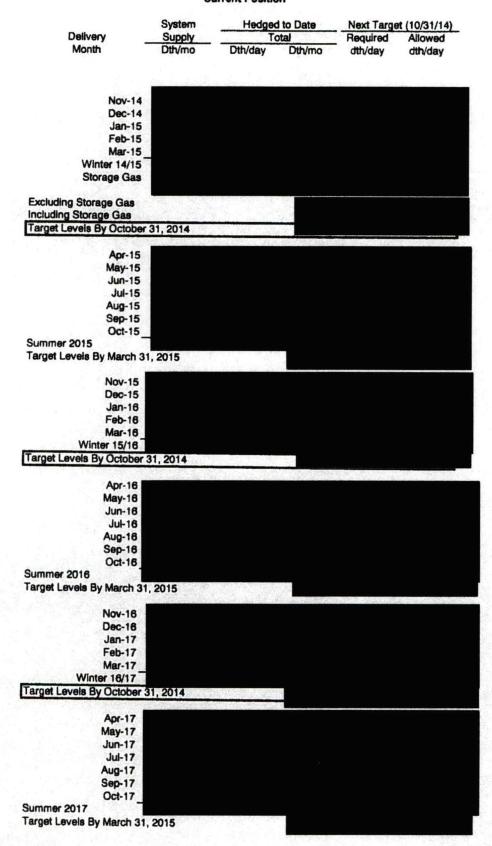
Nov-16 Dec-16 Jan-17 Feb-17 Mar-17 Apr-17 May-17 Jun-17 Jul-17 Aug-17 Load Forecast Sep-17 Oct-17 City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawais (Mcf) Amount Hedged (dth/day) Cost Ave TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

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<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

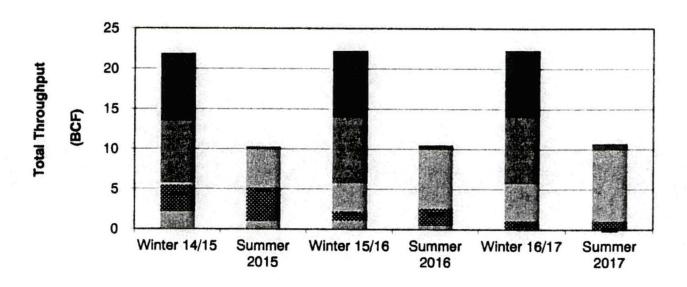
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#### Duke Energy Kentucky Hedging Program Current Position

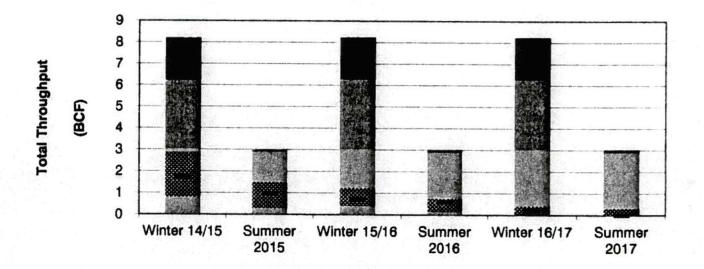


## Hedging Strategy Current Position - October 22, 2014

## **Duke Energy Ohlo**



## **Duke Energy Kentucky**

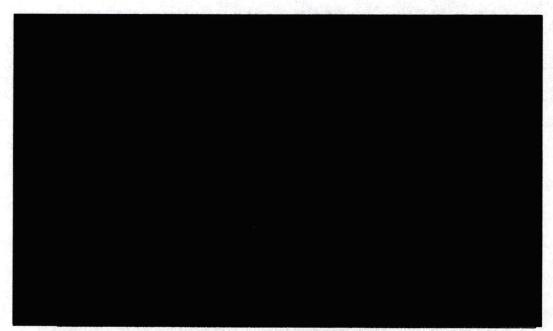


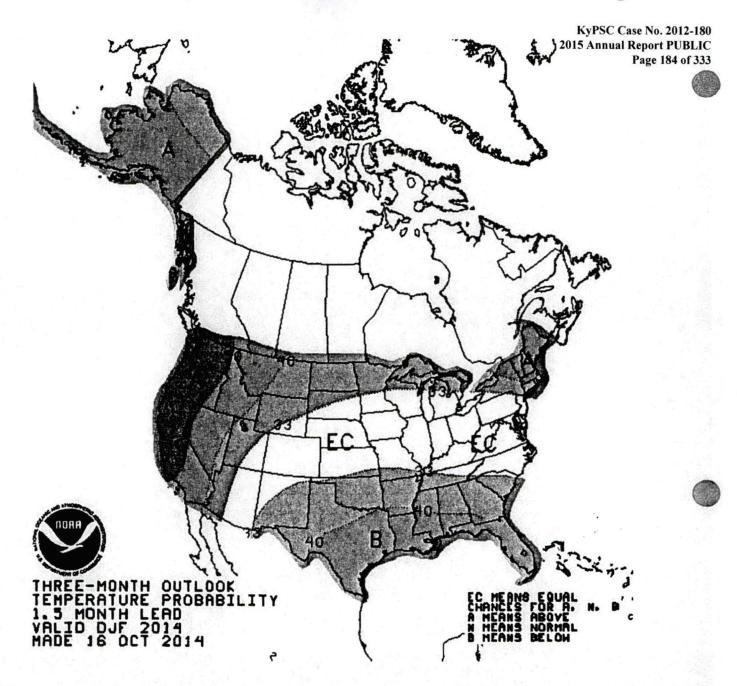
■ Target ■ Base ■ Swing ■ Storage - Hedged

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# COMPARISON OF HISTORIC SPOT & PROJECTED PRICES TO CURRENT FUTURES PRICES

						NAMEX CIC	
Hedged Prices	NAWEX	AIB	ARIQ	186Y 188J	5-yr. avg.		
Kentucky	OidO	23-Oct-14	7-0ct-14	53-Sep-14	(2013-2014)	(\$1/61-01/60)	
		\$3.628	066.6\$		03.6\$	19.6\$	voM
		\$3.716	001.4\$		\$3.62	£6.E\$	DeC
		\$3.803	\$4.130		36.6\$	81.48	nal
		\$97.6\$	066.6\$		£3.E\$	12.48	Feb
		\$3.742	078.6\$		£4.E\$	78.E\$	16M
		972.5\$	\$3.620		86.6\$	77.E\$	1qA
		\$3.554	\$3.550		\$1.15	66.6\$	YaM
		\$3.585	017.6\$		31.4\$	#6°E\$	nul
	4	\$3.640	067.E\$		17.6\$	66.6\$	lut
		129.6\$	067.6\$		94.6\$	88.6\$	guA
		019.6\$	027.6\$	4-5	73.6\$	\$3.53	deS
		\$3.654	088.6\$		09.6\$	\$3.62	toO.
		83.666	818.6\$		\$3.65	<b>78.6</b> \$	<b>BvA rtnoM</b>
		\$3.615	\$3.727			egstevA 1	
		767.E\$	84.016			egsnev	A 1etniW



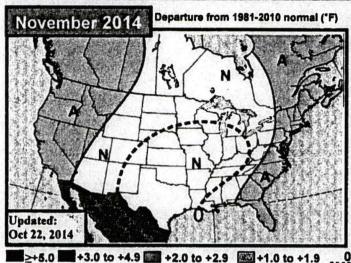


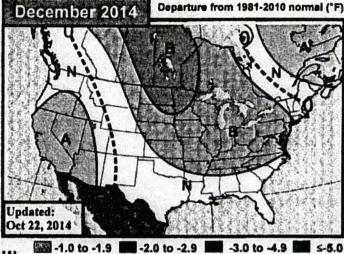
# EarthSat 30-60 Day Outlook

KyPSC Case No. 2012-180 2015 Annual Report PUBLIC

**WEATHER SERVICES** 

Wednesday, October 22, 2014 Meteorologists: PV/BH/SS





-0.9 to 0.9



Significant warm changes across eastern half

Limited cold anomalies overall

The November forecast features a substantial shift to the warmer direction with aboves continuing in the West but also increasing in the East while only negative-normal anomalies are now seen in the southcentral US. The change comes in part from persistence as October has come in far warmer than expected with more of an influence from a Gulf of Alaska low and a lack of a connection to Arctic air seen thus far. This exact pattern may not persist through the next several weeks, but with a positive AO and negative PNA expected to start out the month there is reason to believe that conditions will remain warm in the East at least for the first part of the month. Beyond that, weak El Niño influences favor warmth across the northern tier, and the long-range ECMWF and CFS models also show warmth, so there may be further warm risk to the forecast. Confidence remains low overall.

Nov GWHDD\*\* Forecasts

\*10Y Normal '04-13

Nov 2014 Fcst:

550

10Y Normal\* 540 4 30Y Normal 561.7 Nov-2013 606.2

Change: -25

"National Pop-Weighted CDDs



No changes to the forecast

Cold still favored across much of eastern half

No changes were made to the December forecast, which continues to favor cold conditions from the Plains to the Midwest, Mid-Atlantic, and part of the South while warmth is seen in the West. Despite the much warmer look to November, cold influences are still expected to increase In December as the ongoing -QBO and weak El Niño continue to favor cold. Preferred analog years show a blocking ridge over northeast Canada and a ridge over the North Pacific allowing for the transport of cold air southward from Canada and across the Central US. The forecast comes with timing concerns for how quickly the pattern switches from the warmer look of mid to late fall into this anticipated colder winter set up. Early December could feature less cool air than the expected monthly composite before the blocking influences take place. But once these influences set in the risks turn to the colder side.

Dec GWHDD\*\* Forecasts

\*10Y Normal '04-13

Dec 2014 Fcst:

890

10Y Normal\* 30Y Normal 873.8 Dec-2013 911.2

No Change

"National Pop-Weighted CDDs



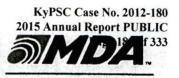
October 2014 continues to shape up to be one of the warmest Octobers in recent years with impressive warm anomalies across the western half of the US and in New England and no anomalies of ~1F or cooler seen nationwide. Our outlooks for the month were clearly too cold across the mid-continent which failed to materialize, and in areas where we did predict warmth we underestimated the magnitude of that warmth. The verification out to Oct 21 plus our current outlook to the end of the month yields 233.3 GWHDDs, 7th lowest since 1950 (but 2nd lowest since 1973). The 74.2 PWCDDs for the month would be the 4th highest total since 1950.



# EarthSat 6-10 Day Forecast—Detailed

Thursday, October 23, 2014

Meteorologist: PV/AC



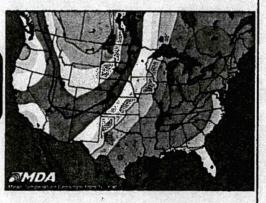
**WEATHER SERVICES** 

## Day 6: Tuesday, Oct 28

Previous Forecast:



Forecast Confidence: 8/10



### Lower Confidence By Late Period

## Strong Warmth Eastern US Early

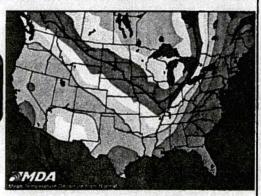
Confidence falls further today as the models continue to be at odds with each other through most of the forecast period. The warmer temperatures pressing across the Midwest and East early push even warmer today ahead of the cold front, permitting much above normal anomalies to exist along both areas within the early period. Any cooler air in the wake of the front is expected to be marginal and brief during the second half of the period across the Midwest and Great Lakes. A trough progressing into the Northwest could allow some cooling to occur along the West Coast late. However, a ridge begins to build across the Central U.S. late where above normal temperatures start to spread across the Plains and into the Midwest.

## Day 7: Wednesday, Oct 29

Previous Forecast:



Forecast Confidence: 7/10

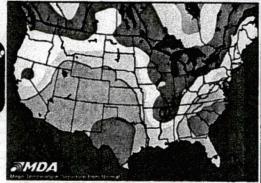


## Day 8: Thursday, Oct 30

Previous Forecast:



Forecast Confidence: 6/10

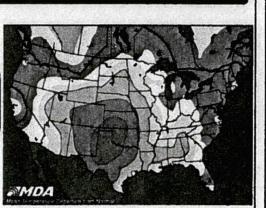


## Day 9: Friday, Oct 31

Previous Forecast:



Forecast Confidence: 5/10

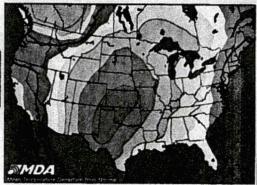


# Day 10: Saturday, Nov 1

Previous Forecast:



Forecast Confidence: 5/10



-13

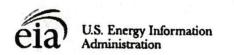
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# Weekly Natural Gas Storage Report

for week ending October 17, 2014 | Released: October 23, 2014 at 10 30 a.m. | Next Release: October 30, 2014

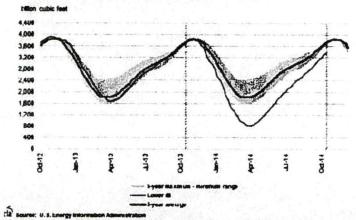
Summary text CSV JSNWorking gas in underground storage, lower 48 states

						Historical C	omparison	ns .
		Stocks billion cubic feet (Bcf)			Year ago (10/17/13)		5-Year average (2009-2013)	
Region	10/17/14	10/10/14	net change	Implied flow	(Bcf)	% change	(Bcf)	% change
East	1,872	1,825	47	47	1,940	-3.5	2,014	-7.1
West	482	474	8	8	548	-12.0	518	-6.9
Producing	1,039	1,000	39	39	1,240	-16.2	1,200	-13.4
Salt	285	272	13	13	309	-7.8	237	20.3
Nonsalt	754	728	26	26	931	-19.0	963	-21.7
Total	3,393	3,299	94	94	3,729	-9.0	3,731	-9.1

#### Summary

Working gas in storage was 3,393 Bcf as of Friday, October 17, 2014, according to EIA estimates. This represents a net increase of 94 Bcf from the previous week. Stocks were 336 Bcf less than last year at this time and 338 Bcf below the 5-year average of 3,731 Bcf. In the East Region, stocks were 142 Bcf below the 5-year average following net injections of 47 Bcf. Stocks in the Producing Region were 161 Bcf below the 5-year average of 1,200 Bcf after a net injection of 39 Bcf. Stocks in the West Region were 38 Bcf below the 5-year average after a net addition of 8 Bcf. At 3,393 Bcf, total working cas is below the 5-year historical range.

#### Working gas in underground storage compared with the 6-year must runn and minimum



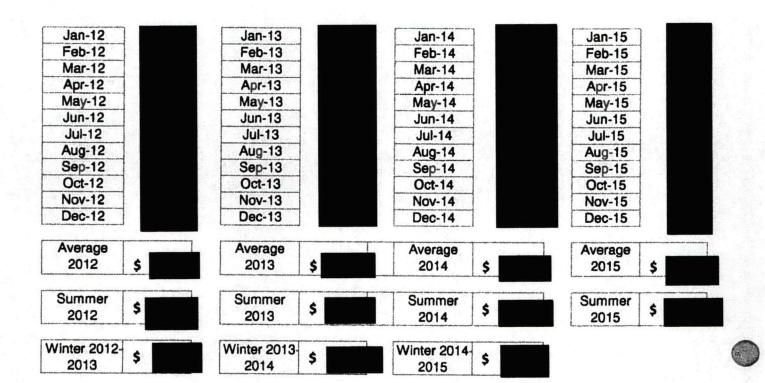
Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 20

Source: Form EIA-912, "Weekly Underground Natural Gas Storage Report." The dashed vertical lines indicate current and year-ago weekly periods.

# PIRA North American Gas Price Overview Per MMBTU September 23, 2014 Release

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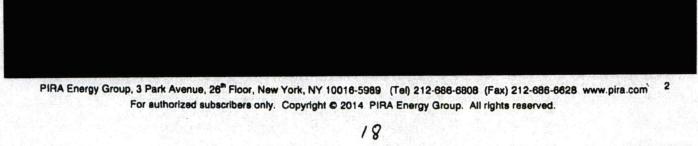
North American Gas Forecast Monthly

September 23, 2014

NATURAL GAS

# U.S. GAS PRICE SCORECARD: NOVEMBER 2014 - MARCH 2015

Bearish Neutral Bullish



# **Winter Weather Forecasts**



# WSI: Winter in January, Rest of Fall to be Mild-October 21, 2014

The heart of the US winter won't arrive until January, while the rest of the fall will remain mild, forecaster WSI said in its latest seasonal outlook released Monday. The models are suggesting 'a tale of two seasons' with mild weather for the remainder of the fall followed by much colder temperatures across parts of the central and eastern US after the New Year.

"The emergence of the current El Nino event suggests that the focus of the cold weather this winter will be farther east and south than last winter and the patterns suggest that cold air outbreaks will be more common during late winter."

# Polar Vortex Back, But Won't Linger: Accuweather—October 16, 2014

According to Accuweather, the polar vortex phenomenon that created havoc last year will likely return this winter but will not stick around as long.

Accuweather is predicting colder than normal weather again this winter in the Northeast and Midwest.

"The polar vortex, the culprit responsible for several days of below-zero temperatures last year, will slip down into the region from time to time, delivering blasts of Artic air—we'll see that happening in mid-January into February but again, it's not going to be the same type of situation as we saw last year, not as persistent."

In its forecast, Accuweather indicated that the Midwest will likely see several cold months, though not quite as extreme as last year—Midwest cities could range 7-9 degrees warmer than last winter's average.

The Old Farmer's Almanac—whose long-range forecast was the closest to predicting last winter's deep freeze has predicted "a large zone of very cold temperatures will be found from east of the Continental Divide east to the Appalachians. The most frigid temperatures will be found from the Northern Plains into the Great Lakes. The coldest outbreak of the season will come during the final week of January into the beginning of February."

# **Pricing Predictions**

# S&P Cuts 2015 Gas Prices 12%, Crude 15%--October 22, 2014

S&P cut its natural gas price forecast for the rest of the year and 2015 by 12% to \$3.75/MMBtu, citing strong growth in supply matched by moderate growth in demand.

"Production continues to grow despite oil and gas companies shifting investment away from development of gas-oriented properties and towards oil and natural gas liquids formations."

S&P expects prices to stabilize at \$4/MMBtu in 2016 and beyond as power generators switch to gas, industrial demand picks up and exports to Mexico and of LNG begin.

In addition, S&P cut its West Texas crude forecast 15% to \$80/b in 2015.

# Shale Producers Profiting Despite Low Prices—October 17, 2014

Natural gas producers operating in the Marcellus and Utica basins will still make money even if gas prices don't rise substantially from where they are today. However, several of the analysts agree that prices would rise in the next several years. New markets for gas—spurred by retirements of coal-fired generation and the growth of gas exports to Mexico and new exports of LNG will likely spur production growth in the Appalachian region.

"Low prices are kind of the cure to low prices. That motivates the market growth and then there's midstream infrastructure development, pipeline expansions that permit the molecules from the Appalachian Basin to get out of the area and get to the markets where the market growth is."

# BofA-Merrill Cuts 2015 Gas Price Call 11% on Gas Production Growth—October 16, 2014

Bank of America-Merrill Lynch has reduced its 2015 gas price forecast by 11% to \$3.90/MMBtu citing their prediction of a 3.1 Bcf/d growth in supply next year.

Most of the growth will be the result of midstream projects being completed, bringing more shale gas to markets outside the region.

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"The biggest risk for the market at this point is a warm, not cold winter. Weather-sensitive gas demand will inevitably fall sharply given the polar vortex last year. Thus, the power sector will have to come to the rescue again next year as the market moves towards oversupply. US natural gas prices may have to temporarily break through coalgas switching parity of \$3.50/MMBtu to generate more demand and prevent a storage glut."

# Gas Prices Will Firm Up in Next 18 Months: ICF International Outlook—October 7, 2014

ICF price forecast for the fourth quarter and beyond indicates that gas prices will firm up in the next 18 months, but are expected to decline afterwards as production from Marcellus continues to grow.

ICF expects the price of gas in 2015 will be \$3.70/MMBtu, or about 30 cents below current futures prices. But, as storage inventories fill up and production continues to grow, prices are expected to decline.

"ICF said demand is expected to grow by the end of 2016 and put upward pressure on prices. In the long run, prices are anticipated to stabilize between \$5.00 and \$6.00/MMBtu, a price range high enough to encourage production but not so high as to discourage demand growth."

# UBS Slashes Gas Price Forecast 17% for 2015; Smith Cuts Price by a Dime—October 7, 2014

Surging production without much pick-up in demand has lead UBS to lower their 2015 forecast 17% to \$3.75/MMBtu. Independent analyst Stephen Smith reduced his price forecast for 2015 by 2.5% to \$3.90/MMBtu citing an over-supplied market.

"We expect the market will require weaker prices in 2015 than currently reflected in the 2015 calendar strip in order to rebalance the market and prevent storage from exceeding 4.2 Tcf heading into next winter."

UBS also cut its 2016 forecast to \$4.25/MMBtu or 15% from the previous forecast.

"We now expect Marcellus/Utica production to exit 2014 4-plus Bcf/d higher year-overyear, above our stale forecast of 2-plus Bcf/d as infrastructure de-bottlenecking has enabled more robust supply growth from the northeast."

# Energy Information Administration Henry Hub Pricing Per MMbtu October 7, 2014 Release

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Jan-12		2.67
Feb-12		2.50
Mar-12		2.18
Apr-12		1.95
May-12		2.43
Jun-12		2.46
Jul-12		2.95
Aug-12		2.84
Sep-12		2.85
Oct-12		3.32
Nov-12		3.54
Dec-12		3.34
Average	~~~~	
2012	\$	2.753
Summer		2 606
2012	>	2.686
Winter 2012- 2013	\$	3.470

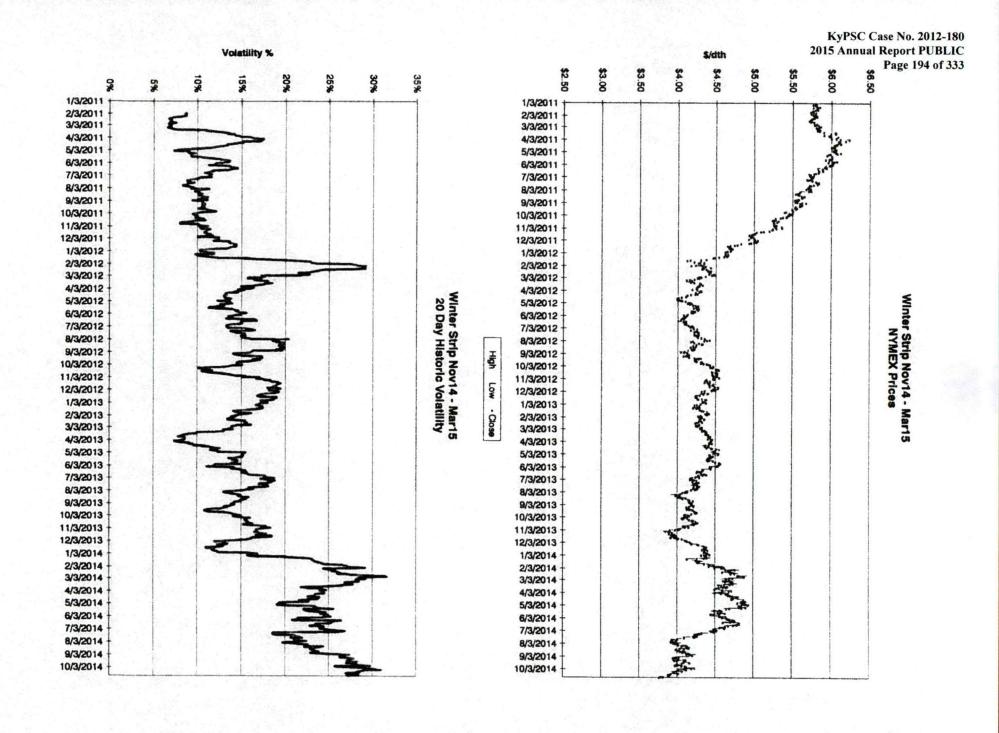
Jan-13		3.33
Feb-13		3.33
Mar-13	7	3.81
Apr-13	7	4.17
May-13		4.04
Jun-13		3.83
Jul-13	]	3.62
Aug-13	].	3.43
Sep-13		3.62
Oct-13		3.68
Nov-13		3.64
Dec-13	}	4.24
Average	+	named to the same
2013	\$	3.728
Summer	-	3 370
2013	\$	3.770

Winter 2013-2014

	4.71					
	6.00					
	4.90					
	4.66					
	4.58					
	4.59					
	4.05					
	3.91					
3.92 3.94 3.99						
					<del></del>	4.10
					\$	4.446
\$	4.236					
	***********					

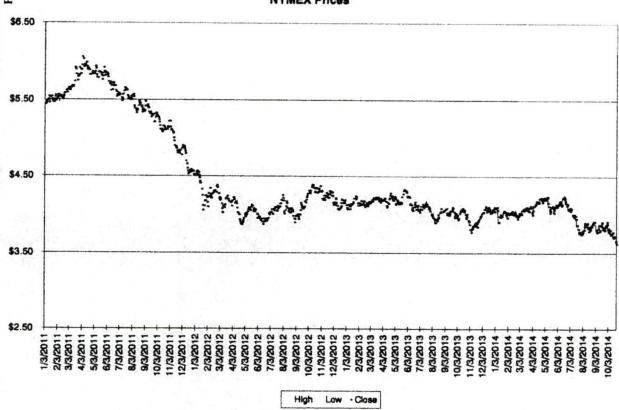
Jan-15	4.13
Feb-15	3.99
Mar-15	3.87
Apr-15	3.62
May-15	3.55
Jun-15	3.71
Jul-15	3.79
Aug-15	3.79
Sep-15	3.75
Oct-15	3.88
Nov-15	3.93
Dec-15	4.06
Average	
2015	\$ 3.839
Summer	A 2 707
2015	\$ 3.727

Winter 2014- 2015	\$ 4.016
2015	

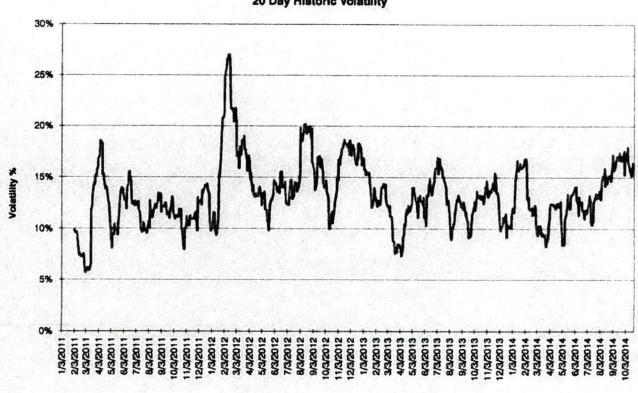




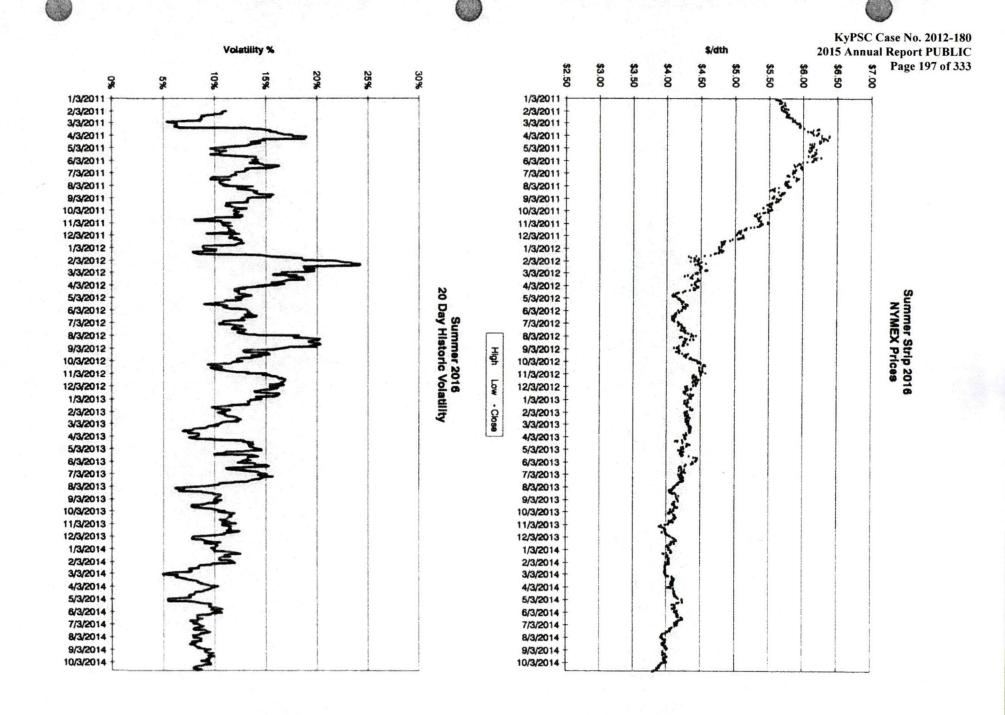
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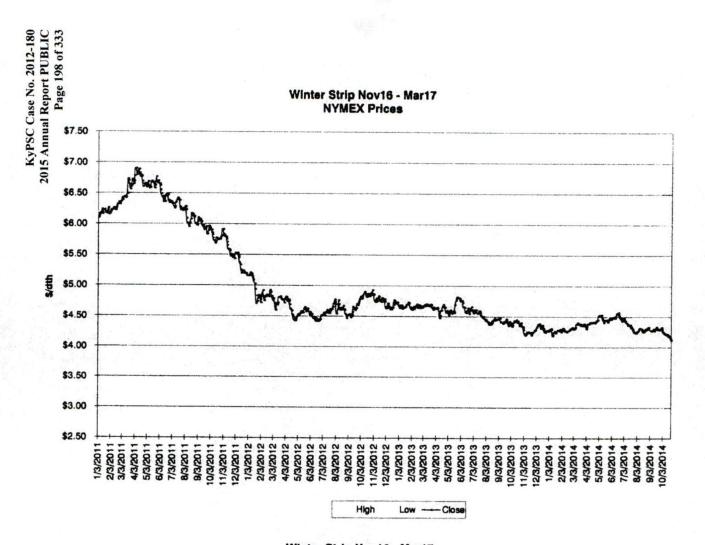


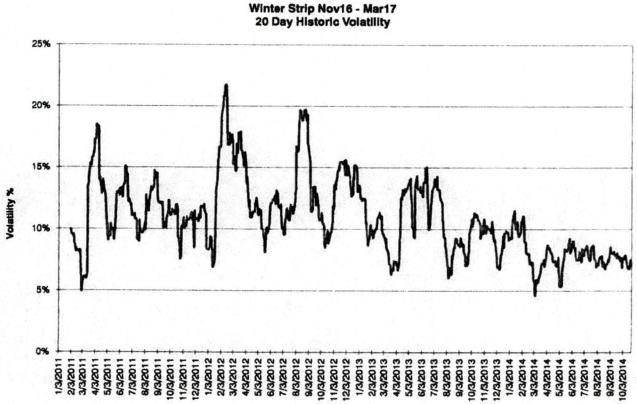
#### Summer 2015 20 Day Historic Volatility



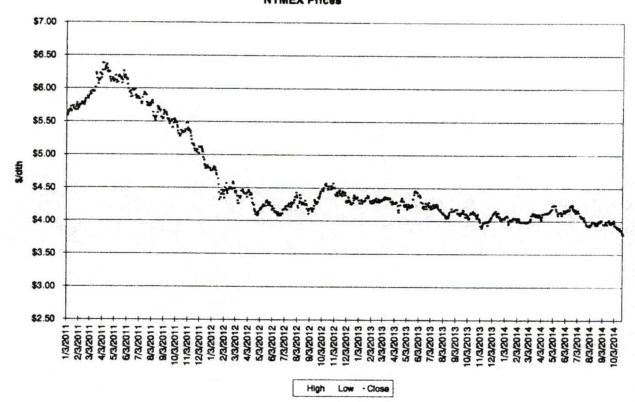
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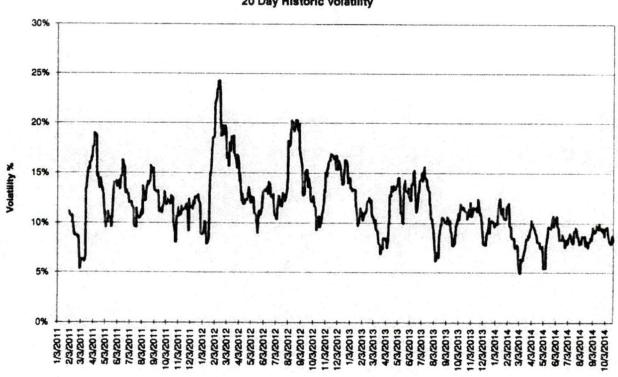




Summer Strip 2017 NYMEX Prices



Summer 2017 20 Day Historic Volatility





# Independent Statistics & Analysis

# U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

## **Natural Gas**

# U.S. Natural Gas Consumption.

EIA expects that total natural gas consumption to average 72.5 Bcf/d in 2014, an increase of 1.6% from 2013, with the industrial sector leading the growth. In 2015, total natural gas consumption will increase 0.3%, as continued industrial sector growth and higher electric power sector consumption offset lower residential and commercial consumption. Higher natural gas prices this year contribute to a 2.3% decline in natural gas consumption in the power sector to 21.8 Bcf/d in 2014. EIA expects natural gas consumption in the power sector to increase to 22.6 Bcf/d in 2015.

#### U.S. Natural Gas Production and Trade.

EIA expects natural gas marketed production to grow by an annual rate of 5.4% in 2014 and 2.0% in 2015. STEO projects that the strong increases already seen in the Lower 48 states this year will continue, offsetting declines in the Gulf of Mexico. As of July, the most recent month for which EIA data are available, marketed production was 4.2 Bcf/d greater than it was in July 2013.

Growing domestic production is expected to continue to put downward pressure on natural gas imports from Canada and spur exports to Mexico. Exports to Mexico, particularly from the Eagle Ford Shale in South Texas, are expected to increase because of growing demand from Mexico's electric power sector and flat Mexican production.

### Natural Gas Inventories.

Natural gas working inventories totaled 3,100 Bcf as of September 26, which was 373 Bcf lower than at the same time last year and 399 Bcf lower than the previous five-year (2009-13) average. The injection season began somewhat slowly in April, but has continued at a strong pace, with injections above the five-year (2009-13) average throughout most of the injection season. <u>EIA expects working gas stocks will reach 3,532 Bcf at the end of October, 283 Bcf lower than at the same time last year. Heading into next summer, EIA projects end-of-March 2015 inventories will be 122 Bcf below the five-year (2010-14) average.</u>

# **Crude Oil Prices**

North Sea Brent crude oil spot prices averaged \$97/bbl in September, a decrease of \$5/bbl from August and the first month Brent crude oil prices have averaged below \$100/bbl since June 2012. Brent crude oil prices were driven downward in large part because of weakening global oil demand and higher Libyan oil exports. The forecast Brent crude oil price averages \$104/bbl in 2014 and \$102/bbl in 2015, \$2/bbl lower and \$1/bbl lower than projected in last month's STEO, respectively.

The monthly average WTI crude oil spot price fell from an average of \$97/bbl in August to \$93/bbl in September. High refinery runs contributed to the discount of WTI crude oil to Brent crude oil falling from an average of \$8/bbl during the first half of this year to an average of \$4/bbl in the third quarter. EIA now expects WTI crude oil prices to average \$91/bbl in the fourth quarter of 2014 and \$95/bbl in 2015. The discount of WTI to Brent crude oil is forecast to widen from current levels, averaging \$7/bbl in the fourth quarter of 2014 and in 2015.

## Duke Energy Hedging Program Remaining Base Not Yet Locked in Winter 2014-15



Duke Energy Ohio Previously Hedged	
Total Marie Control	Col Gulf Mainline Tex Gas Zone 1 Tex Gas Zone 1
Total	
System Supply	
Duke Energy Kentucky Previously Hedged	
42	Col Gulf Mainline
	Col Gulf Mainline
Total System Supply	
<u>Duke Energy-Total</u> Previously Hedged	

Total

		Dth/Day			% System	
November	December	January	February	March	Total	System Supply
	P. Server design	And the second				2.044

#### Gas Resources Hedging Program Market Indicators Summary November 21, 2014

	Price Pressure	Term	Comments				
Weather							
Long Term Forecast (Dec 14Feb 15)	<b>+</b>	Long	NOAA predicting above average temperatures for December 2014 February 2015 from the west coast to the Rockies. Below normal temperatures in the southern states and the central portion of CONUS.	13			
Mid Term Forecast (30-60 days)	1	Long	December is predicted to be 3.5% colder than normal based on 10 year normals and January weather is predicted to be 6.9% colder than normal.	14			
Short Term Forecast (6-10 days)	Above normal temperatures on the West Coast and Below to Much Below over the majority of the remainder of the CONUS.						
Storage Inventory				-			
EIA Weekly Storage Report	-	Long	Storage withdrawals for the week ending November 14th were 17 Bcf. Storage levels are at 3.594 TCF which is 5.3% lower than last year and 6.4% lower than the 5 year average.	16			
ndustry Publications							
Winter 2014/15: Long Price Outlook "Bearish" based on fundamentals such as		U.S. GAS PRICE SCORECARD: November 2014 to March 2015 Gas Price Outlook "Bearish" based on fundamentals such as "Lower 48 Gas Production", "US Storage Levels", and "Residential/Commercial".	17-18				
Gas DailyGas Price Predictions	<b>†</b> +	Long	Citing the "continuing onslaught" of production, Smith cut his 2015 price forecast \$.20 to \$3.70. Market looks over-supplied and odds favoring no replay of Polar Vortex 2014. ICF International also citing growth in production and a winter without polar vortexes should result in a gas price of \$4.50/MMBtu this winter. The robust production is offsetting the need for gas in storage. Prices to decline to \$4.00 over the next several years with seasonal price volatility. Barclays predicting 4th quarter price forecast of \$3.95/MMBtu and \$4.15/MMBtu average price for the first quarter.	19-20			
Gas DailyMiscellaneous Information  Heccent declines in crude prices have triggered concerns all drilling and production. Bentek has determined that WTI we below \$70/b for an extended period of time before drilling is producers did scale back it would take a substantial change impact production. It would take a 25% cutback in drilling to associated gas production by 5 Bcf/d.				21			
Government Agencies			accordated gas production by a bond.	-			
Energy Information Administration Winter 2014/15: \$4.004 Summer 2015: \$3.726		Long	The projected Henry Hub natural gas spot price averages \$4.438/MMBtu for 2014 and \$3.829/MMBtu for 2015.				
Technical Analysis							
Summer 2015 Strip Chart	*		Closed at \$3.78	23			
Winter 2015-16 Strip Chart Summer 2016 Strip Chart	¥		Closed at \$4.05	24			
Winter 2016-17 Strip Chart	- I		Closed at \$3.80 Closed at \$4.09	25			
Summer 2017 Strip Chart	1 I		Closed at \$4.09	26			
Winter 2017-18 Strip Chart			Closed at \$4.23	28			
Conomy		Onon	100000 at \$4.20	20			
Demand	+	Long	EIA projects total natural gas consumption will average 73.2 Bcf/d in 2014, an increase of 2.2% from 2013, led by the industrial sector. 2015 gas consumption is expected to be flat as continued growth in the industrial sector and higher electric power sector consumption offset lower residential and commercial consumption.				
Supply	<b>←→</b>	Long	Total marketed production expected to increase by an everage rate of				
Oil Market	+	Long	Brent crude oil spot prices averaged \$87/bbl in October, a decrease of \$10/bbl from September and the first month Brent crude have averaged below \$90/bbl since November 2010. Brent crude projected to average \$83 per barrel in 2015, \$18/bbl lower than projected last month.				

## Meeting Minutes: 428 Annex Conference Room - 2:00 pm

Attendees: Jeff Kern, Joachim Fischesser, Mike Brumback, Mitch Martin, Steve Niederbaumer

Discussed market fundamentals including weather, storage levels (end of season level--3.611 Tcf), PIRA and EIA price forecasts, analysts projections of gas prices, and the current positions of the DEK Hedging Programs. Significant discussion took place regarding recent cold weather and its' impact on DEK's storage levels. In addition, discussed recent jump in NYMEX pricing for the Summer 2015 and Winter 15/16 strips. After discussion, a concensus was reached not to hedge additional volumes at this time.

# Duke Energy Kentucky Hedging Program - Current Position November 2014 - October 2015 As of 11/19/14

Nov-14 Dec-14 Jan-15 Feb-15 Mar-15 Apr-15 May-15 Jun-15 Jul-15 Aug-15 Sep-15 Oct-15 Load Forecast City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Fixed Price Fixed Price ( Fixed Price ( Collar Fixed Price ( Fixed Price ( Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) Fixed Price Price Caps **No-Cost Collars Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal % (1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.





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# Duke Energy Kentucky Hedging Program - Current Position November 2015 - October 2016 As of 11/19/14

Nov-15 Dec-15 Jan-16 Feb-16 Mar-16 Apr-16 May-16 Jun-16 Jul-16 Aug-16 Sep-16 Oct-16 Load Forecast City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Fixed Price ( Cost Ave Collar Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) Fixed Price Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated EGC per Dth at City Gate Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

# Duke Energy Kentucky Hedging Program - Current Position November 2016 - October 2017 As of 11/19/14

Nov-16 Dec-16 Jan-17 Feb-17 Mar-17 Apr-17 **May-17** Jun-17 Aug-17 Sep-17 Oct-17 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Cost Ave ( TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps **No-Cost Collars Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

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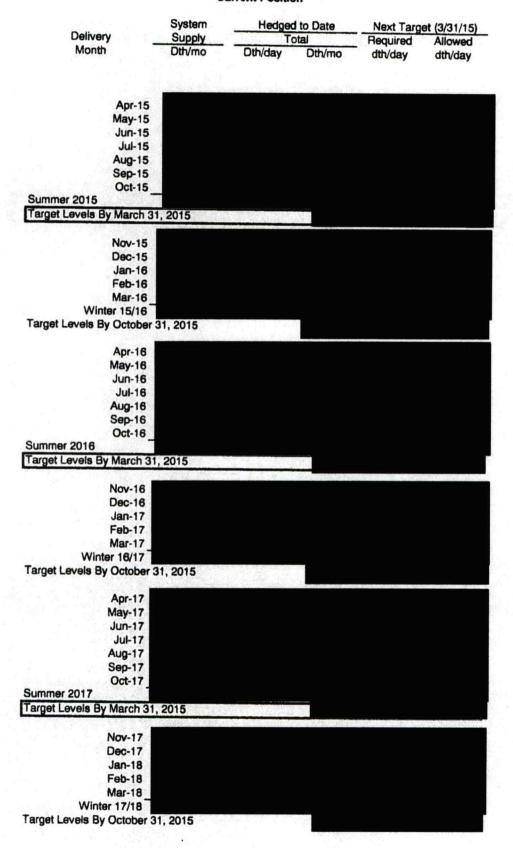
#### Duke Energy Kentucky Hedging Program - Current Position November 2017 - October 2018 As of 11/19/14

Nov-17 Dec-17 Jan-18 Feb-18 Mar-18 Apr-18 May-18 Jun-18 Jul-18 Aug-18 Sep-18 Oct-18 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

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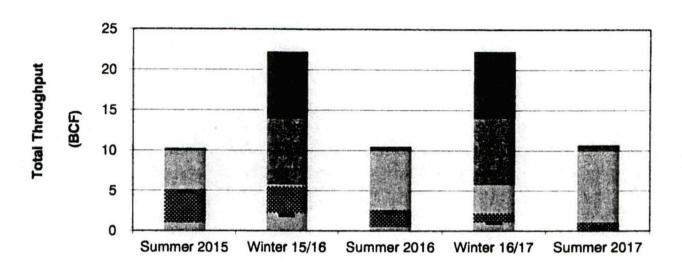
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#### Duke Energy Kentucky Hedging Program Current Position

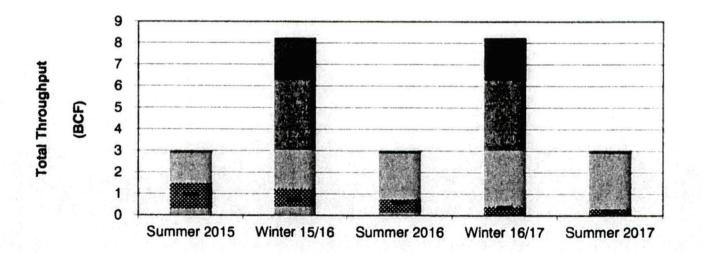


# Hedging Strategy Current Position - November 21, 2014

## **Duke Energy Ohlo**



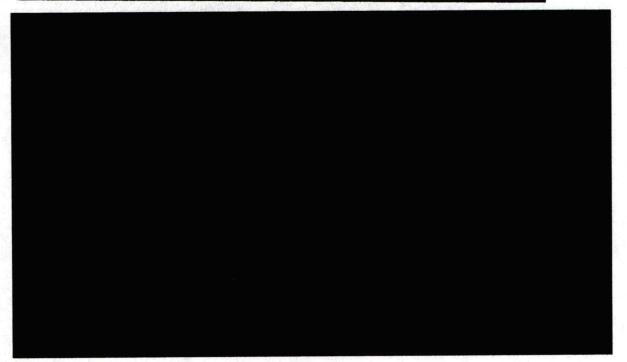
## **Duke Energy Kentucky**

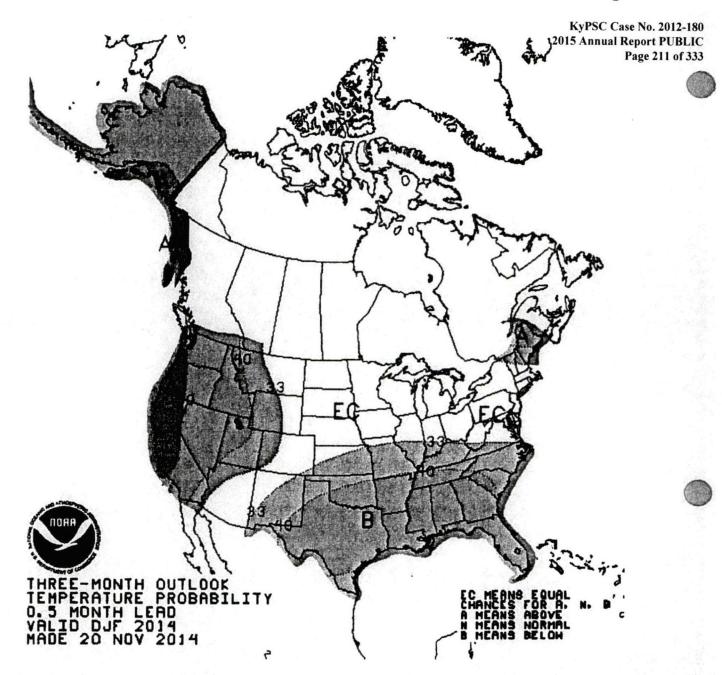


■ Target ■ Base ■ Swing ■ Storage - Hedged

# COMPARISON OF HISTORIC SPOT & PROJECTED PRICES TO CURRENT FUTURES PRICES

		ic Prices: osing Price						
	5-yr. avg.	Last Year	PIRA	EIA	NYMEX	Hedged Prices		
	(09/10-13/14)	(2013-2014)	28-Oct-14	12-Nov-14	21-Nov-14	Ohio	Kentucky	
Dec	\$3.93	\$3.82	Total day	\$4.100	\$4.302	s		
Jan	\$4.18	\$3.35		\$4.060	\$4.453	\$		
Feb	\$4.21	\$3.23		\$3.950	\$4.417	\$		
Mar	\$3.87	\$3.43		\$3.850	\$4.326	\$		
Apr		\$3.98		\$3.610	\$3.747	\$		
May	\$3.93	\$4.15		\$3.530	\$3.681	\$		
Jun	\$3.94	\$4.15		\$3.710	\$3.699	\$		
Jul	\$3.99	\$3.71		\$3.790	\$3.720	\$		
Aug	\$3.88	\$3.46	- 150 de 1	\$3.790	\$3.707	\$		
Sep		\$3.57		\$3.760	\$3.709	\$		
Oct	\$3.62	\$3.50		\$3.890	\$3.737	\$		
Nov	\$3.50	\$3.50		\$3.940	\$3.794	\$		
2 Month Avg	\$3.86	\$3.65		\$3.832	\$3.941			
	er Average Average			\$3.726 \$3.980	\$3.714 \$4.258			





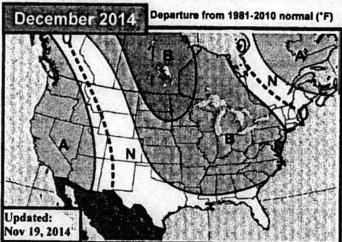
# EarthSat 30-60 Day Outlook

Wednesday, November 19, 2014

Meteorologists: PV/BH/SS



**WEATHER SERVICES** 



Departure from 1981-2010 normal (°F) January 2015 Nov 19, 2014

+3.0 to +4.9 = +2.0 to +2.9 = +1.0 to +1.9 . 0

-1.0 to -1.9 -2.0 to -2.9

-0.9 to 0.9



Forecast unchanged with confidence remaining low

Still cold in mid-continent, South, and Mid-Atlantic

The latest December outlook has not changed as confidence remains too low to make any sort of aggressive change at this stage. There is still a favoring towards cold among the longer term climate signals and persistence, but other intermediate signals such as the MJO point to warmer risks, especially early in the month. The longer term models also point towards a warmer outcome, but they've failed miserably of late and are not to be trusted. While there is improved statistical support for the December to mimic the November cold versus what there was from October heading into November, the correlation is ultimately still fairly low. Changes could conceivably be quite large to either direction in our final update next week.

Dec GWHDD\*\* Forecasts

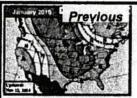
\*10Y Normal '04-13

Dec 2014 Fcst:

890

10Y Normal\* 860.1 30Y Normal 873.8 Dec-2013

No Change



Forecast remains unchanged

Cold opportunities continue

Widespread cold remains favored in most areas from the Rockies eastward, strongest in the Midwest and Plains. The forecast remains based on the weak El Niño, negative QBO, and positive PDO with additional support from above normal early season snowlice cover in Eurasia. Given the indicators and the over-performance of cold early in the season there may still be some a risk of stronger cold at times. The longer term models remain much warmer than the forecast, but poor verifications as of late limit any confidence in their output at this point.

Jan GWHDD\*\* Forecasts

\*10Y Normal '04-13

Jan 2015 Fcst:

995

10Y Normal\* 930 9 30Y Normal 952.1 Jan-2014 1048.0

No Change

\*\*National Pop-Weighted CDDs



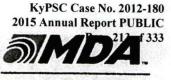
Some of the coldest mid-November weather on record has been seen over the last. several days with record chilf at times in the Rockies, mid-continent, and now today in the South and East. A brief reprieve from the chill is expected early next week. hefore another round of weaker cold is set to settle in for the last several days of the month. On the whole, widespread anomalies of 5-8°F below normal are expected across a wide portion of the Rockies, Plains, Midwest, and South with anomalies of 2-5° below normal in much of the East. The result is a November total, of 673.3 GWHDDs, the 4th highest total since 1950 and just shy of the 3rd highest total in 1996 (674.1).



# EarthSat 6-10 Day Forecast—Detailed

Friday, November 21, 2014

Meteorologist: PV



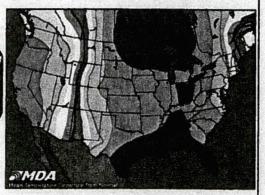
**WEATHER SERVICES** 

# Day 6: Wednesday, Nov 26

Previous Forecast:



Forecast Confidence: 8/10



# Colder Shift to Forecast Eastern US

### West to Central US Warmer Second Half

Cold air remains on tap to begin the period over the midcontinent, spreading eastward early in the wake of a strong storm system. Upstream pattern changes in the Pacific are expected to prompt a faster, more potent build up of ridging in the Western US. While this brings warmer changes to the West, along with warmer risks here into parts of the Central US, the East is forced colder in a pattern dominated more strongly by cold high pressure today. Confidence is lower today than yesterday due to a drop in model consistency, with confidence falling most mid to late period. The second half of the period comes with a mix of risks as well with the opportunity for either warmer or colder conditions.

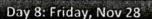
# Day 7: Thursday, Nov 27

Previous Forecast:



Forecast Confidence: 7/10





Previous Forecast:



Forecast Confidence: 6/10



# Day 9: Saturday, Nov 29

Previous Forecast:



Forecast Confidence: 5/10



# Day 10: Sunday, Nov 30

Previous Forecast:



Forecast Confidence: 5/10



5 15

A A A B

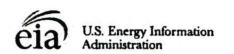
0°F



3 A +5 A +8 MA+15 SA

MDA Information Systems LLC 820 West Diamond Ave, Suite 300, Gaithersburg, MD 20878 Tel 240-833-8300, Fax 240-833-8301 — www.indaus.com — ©2014 [029000000102.pdf—Version 3.1]

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# Weekly Natural Gas Storage Report

for week ending November 14, 2014 | Released: November 20, 2014 at 10 30 a.m. | Next Release: November 25, 2014

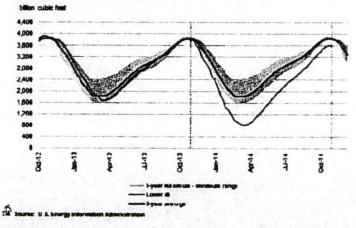
# Working gas in underground storage, lower 48 states

						Historical C	omparison	18	
		billion	Stocks cubic feet (Bcf)			er ago 1/14/13)	5-Year average (2009-2013)		
Region	11/14/14	11/07/14	net change	Implied flow	(Bcf)	% change	(Bcf)	% change	
East	1,953	1,964	-11	-11	1,957	-0.2	2,057	-5.1	
West	495	502	-7	-7	552	-10.3	530	-8.8	
Producing	1,148	1,145	1	1	1,286	-10.9	1,251	-8.4	
Salt	329	327	2	2	328	0.3	263	25.1	
Nonsalt	817	818	-1	4	958	-14.7	988	-17.3	
Total	3,594	3,611	-17	-17	3,796	-6.3	3,838	-6.4	

### Summary

Working gas in storage was 3,594 Bcf as of Fridey, November 14, 2014, according to EIA estimates. This represents a net decline of 17 Bcf from the previous week. Stocks were 201 Bcf less than last year at this time and 244 Bcf below the 5-year average of 3,838 Bcf. In the East Region, stocks were 104 Bcf below the 5-year average following net withdrawals of 11 Bcf. Stocks in the Producing Region were 105 Bcf below the 5-year average of 1,251 Bcf after a net injection of 1 Bcf. Stocks in the West Region were 35 Bcf below the 5-year average after a net drawdown of 7 Bcf. At 3,594 Bcf, total working gas is below the 5-year historical range.

### Working gas in underground storage compared with the 5-year residment and minimum



Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2009 through 2013.

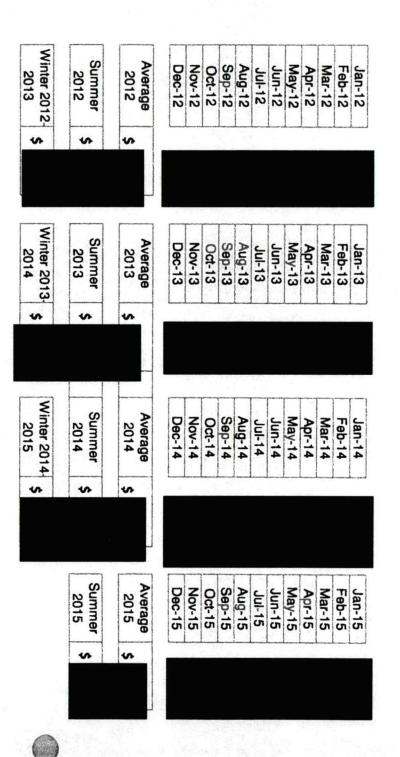
Source: Form EIA-912, "Weekly Underground Natural Gas Storage Report." The dashed vertical lines indicate oursent and year-ago weekly pariods.

# PIRA North American Gas Price Overview Per MMBTU

October 28, 2014 Release

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North American Gas Forecast Monthly

October 28, 2014

NATURAL GAS

U.S. GAS PRICE SCORECARD: NOVEMBER 2014 - MARCH 2015

Bearish Neutral Bullish

# **Pricing Predictions**



Citing the "continuing onslaught" of US production, independent analyst Stephen Smith cut his 2015 price forecast by 20 cents or 5% to \$3.70/MMBtu.

"The gas market for 2015, with odds favoring no replay of 'Polar Vortex 2014,' continues to look over-supplied, even assuming a return to a normally hot summer."

Year-over-year production growth for May through October has been 5.5% and this explains more than half of the six-month deficit decline, milder than normal summer and a warm October explains another 15%, and most of the balance would be explained by gas-to-coal generation shifts.

# Winter Henry Hub Prices Will be Around \$4.50: ICF—November 7, 2014

According to ICF International, growth in the Appalachian shale's production and a winter without polar vortexes should result in a natural gas price of \$4.50/MMBtu this winter.

The balance of gas in storage at the end of the injection season will be about 3.5 Tcf and that amount is adequate because of the continued growth in production. The robust production of gas is offsetting the need for gas in storage.

ICF expects the price of gas will decline to \$4.00/MMBtu over the next couple of years with seasonal price volatility.

"Predicting the near-term price of gas is made difficult by the weather, which is the biggest wild card, the least predictable of the variables. Weather can move prices in either direction."

# Prices Unlikely to Dip Below \$3.50: Barclays--October 27, 2014

Barclays citing winter weather ahead, indicated prices are unlikely to go below the \$3.50 mark. Barclay reaffirmed their fourth-quarter price forecast of \$3.95/MMBtu.

"Unsupportive weather and strong storage injections have driven prices lower, but there isn't much more downside risk left, and we view a dip below \$3.50/MMBtu as an unlikely scenario." Upside risk beyond \$3.95/MMBtu is limited according to Barclays. Barclays affirmed their \$4.15/MMBtu average price for the first quarter 2015.

# Miscellaneous Information



# Crude Price Declines Trigger Production Concerns—November 12, 2014

Recent declines in crude prices have triggered concerns about future drilling and production. Bentek has determined that WTI would need to fall below \$70/b and stay there for an extended period of time to have a significant impact on natural gas production.

"Bentek analyzed the internal rates of return per well that drillers as seeing in most US shale gas-and liquids-plays. It found that returns are likely to remain sufficient at current crude price levels to maintain drilling plans in the plays that will contribute the most to 2015 gas production growth. Based on average returns across the plays examined, oil prices would have to fall in the \$60-70/b price range to pressure producers to reduce drilling."

"If producers did begin to scale back drilling, it would take a substantial change to significantly impact production. In fact, if crude prices fall far enough below \$70/b that a 25% cutback in liquids drilling occurs, about 5 Bcf/d of associated gas production would be at risk."

# **Energy Information Administration Henry Hub Pricing** Per MMbtu November 12, 2014 Release

Jan-12		2.67
Feb-12		2.50
Mar-12		2.18
Apr-12		1.95
May-12		2.43
Jun-12		2.46
Jul-12		2.95
Aug-12		2.84
Sep-12		2.85
Oct-12	9	3.32
Nov-12		3.54
Dec-12		3.34
Average		
2012	\$	2.753
Summer		2 505
2012	\$	2.686
Winter 2012- 2013	\$	3.470

Jan-13		3.33
Feb-13		3.33
Mar-13		3.81
Apr-13		4.17
May-13		4.04
Jun-13		3.83
Jul-13	1	3.62
Aug-13		3.43
Sep-13		3.62
Oct-13	2	3.68
Nov-13	1	3.64
Dec-13		4.24
Average		
2013	\$	3.728
Summer	_	
2013	\$	3.770
Winter 2013		4.000
2014	\$	4.698

Jan-14		4.71
Feb-14		6.00
Mar-14		4.90
Apr-14		4.66
May-14		4.58
Jun-14		4.59
Jul-14		4.05
Aug-14		3.91
Sep-14		3.92
Oct-14		3.78
Nov-14		4.06
Dec-14		4.10
Average 2014	\$	4.438
Summer 2014	\$	4.213
Winter 2014-	<u>.</u>	4 004

4.06
3.95
3.85
3.61
3.53
3.71
3.79
3.79
3.76
3.89
3.94
4.07
\$ 3.829
\$ 3.726
\$ 3.726

W	-	
Winter 2014-	Ś	4.004
2015	7	4.004

\$/dth

8

\$5.50

\$2.50

1/3/2011

9/3/2014

10/3/2014

11/3/2014

\$3.50

Volatility %

1/3/2011

9/3/2014

10/3/2014

11/3/2014

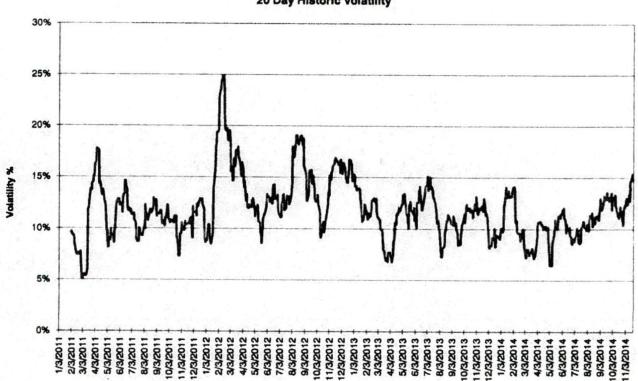
23

25%

Summer Strip 2015 NYMEX Prices







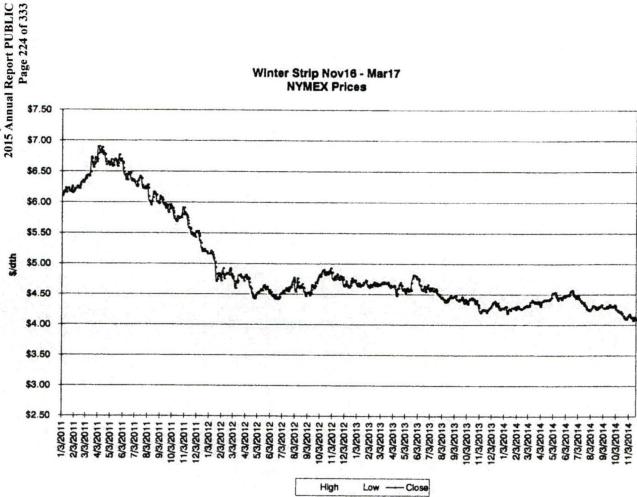
11/3/2014

11/3/2014

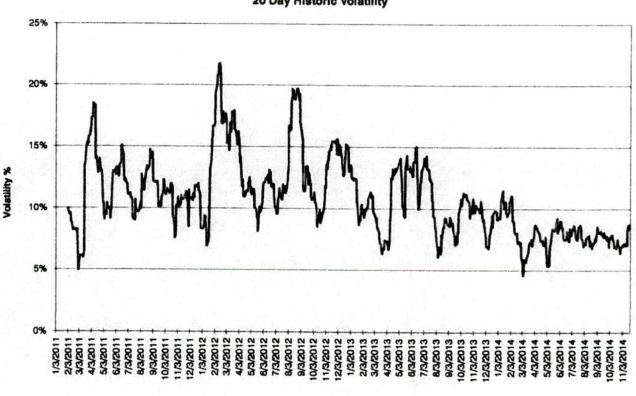


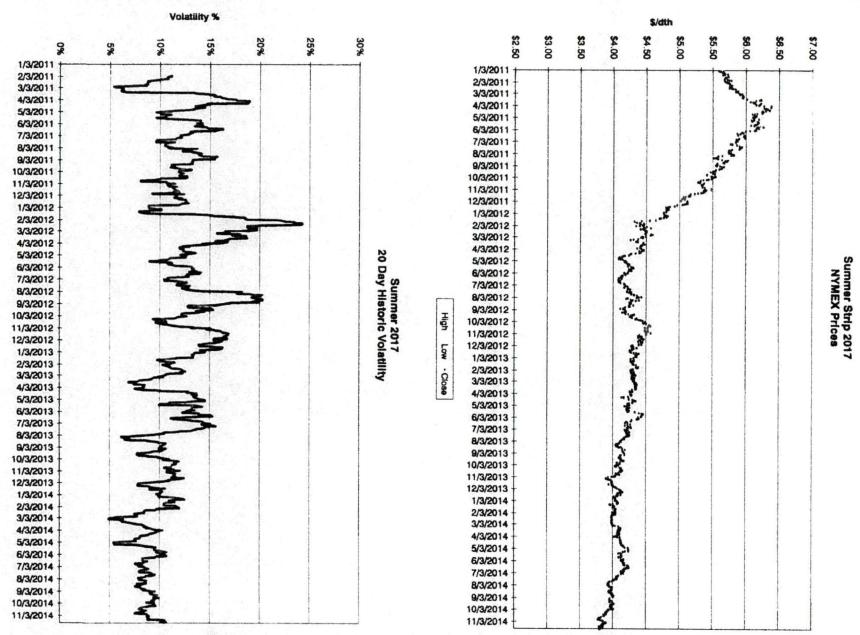
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# Winter Strip Nov16 - Mar17 20 Day Historic Volatility



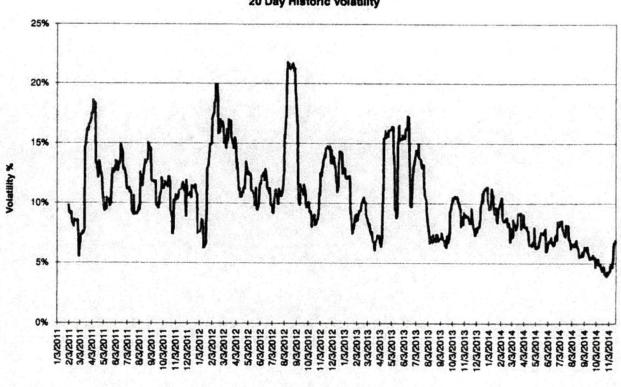


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# Winter Strip Nov17 - Mar18 NYMEX Prices



Winter Strip Nov17 - Mar18 20 Day Historic Volatility





Independent Statistics & Analysis

# U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

# **Natural Gas**

# U.S. Natural Gas Consumption.

EIA expects total natural gas consumption to average 73.2 Bcf/d in 2014, an increase of 2.2% from 2013, with the industrial sector leading the growth. In 2015, total projected natural gas consumption is expected to be flat as continued industrial sector growth and higher electric power sector consumption offset lower residential and commercial consumption. Higher natural gas prices this year contribute to a 1.7% decline in natural gas consumption in the power sector to 22.0 Bcf/d in 2014. EIA expects natural gas consumption in the power sector to increase to 22.7 Bcf/d in 2015.

### U.S. Natural Gas Production and Trade.

EIA expects natural gas marketed production to grow by an annual rate of 4.8% in 2014 and 2.3% in 2015. EIA projects that the strong increases already seen in the Lower 48 states for most of this year will continue, more than offsetting the long-term declining trend in the Gulf of Mexico. As of August, the most recent month for which EIA data are available, dry natural gas production was 3.4 Bcf/d greater than it was in August 2013. Production usually declines in September; however, preliminary data indicate that growth has continued, with new production offsetting maintenance declines.

Growing domestic production is expected to continue to put downward pressure on natural gas imports from Canada and spur exports to Mexico. Exports to Mexico, particularly from the Eagle Ford Shale in South Texas, are expected to increase because of growing demand from Mexico's electric power sector and flat Mexican production.

### Natural Gas Inventories.

Natural gas working inventories totaled 3,571 Bcf as of October 31, which was 238 Bcf lower than at the same time last year and 261 Bcf lower than the previous five-year (2009-13) average. The injection season began somewhat slowly in April, but has continued at a strong pace, with injections above the five-year average throughout most of the injection season. The deficit to the five-year average and to last year's level has narrowed over the injection season with substantial weekly stock builds. Heading into next summer, EIA projects that end-of-March 2015 inventories will total 1,562 Bcf, 94 Bcf below the five-year (2010-14) average.

# **Crude Oil Prices**

North Sea Brent crude oil spot prices averaged \$87/bbl in October, a decrease of \$10/bbl from September and the first month Brent crude oil prices have averaged below \$90/bbl since November 2010. The combination of robust world crude oil supply and weak global demand contributed to rising global inventories and lower crude oil prices. The forecast Brent crude oil price averages \$83/bbl in 2015, \$18/bbl lower than projected in last month's STEO.

The monthly average WTI crude oil spot price fell from an average of \$93/bbl in September to \$84/bbl in October. High refinery runs contributed to the discount of WTI crude oil to Brent crude oil narrowing from an average of \$8/bbl during the first half of this year to an average of \$3/bbl in July. More recently, lower-than-expected demand in Europe and Asia combined with continued growth in global liquids supply depressed global crude oil benchmarks like Brent, contributed to the WTI discount to Brent again falling to \$3/bbl in October. EIA now expects WTI crude oil prices to average \$80/bbl in the fourth quarter of 2014 and \$78/bbl in 2015, \$11/bbl and \$17/bbl lower than projected in last month's STEO, respectively. The discount of WTI to Brent crude oil is forecast to widen slightly from current levels, averaging \$6/bbl in 2015.

# Duke Energy Hedging Program Remaining Base Not Yet Locked In Winter 2014-15



			Dth/Day				System
	November	December	January	February	March	Total	Supply
Col Gulf Mainline							
Tex Gas Zone 1							
Tex Gas Zone 1							
Col Gulf Mainline							
Col Gulf Mainline							
	100						

<u>Duke Energy—Total</u>
Previously Hedged

System Supply

**Total** 

**Fotal** 

### Duke Energy Kentucky Hedging Program for 2016/17 Cost Averaging with @ Columbia Gulf Mainline

**KyPSC Case No. 2012-180** 

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Total 12 Month Total Locked in Apr-16 May-16 Jun-16 Jul-16 Aug-16 Sep-16 Oct-16 Nov-16 Dec-16 Feb-17 Strip Jan-17 Mar-17 Cost To Date 1-Oct \$3.901 \$3.902 \$3.929 \$3.956 \$3.965 \$3.953 \$3.981 \$4.066 \$4.239 \$4.371 \$4.351 \$4.291 \$4.0754 2-Oct \$3.885 \$3.886 \$3.913 \$3.940 \$4.051 \$3.949 \$3.937 \$3.966 \$4.224 \$4.356 \$4.336 \$4.276 \$4.0599 3-Oct \$3.895 \$3.895 \$3.923 \$3.951 \$3.960 \$3,946 \$3.972 \$4.056 \$4,228 \$4.359 \$4.338 \$4.277 \$4.0667 6-Oct \$3.862 \$3.863 \$3.891 \$3,919 \$4.025 \$3,929 \$3.915 \$3,941 \$4.197 \$4.328 \$4.308 \$4.247 \$4.0354 7-Oct \$3.879 \$3.907 \$3.878 \$3.935 \$3.945 \$3.931 \$3.957 \$4.041 \$4.212 \$4.342 \$4.321 \$4.259 \$4.0506 8-Oct \$3.880 \$3.851 \$3.852 \$3.908 \$3.918 \$3.904 \$3.931 \$4.016 \$4.188 \$4.318 \$4.298 \$4.237 \$4.0251 9-Oct \$3.859 \$3.860 \$3.888 \$3.916 \$3.926 \$3.939 \$3.912 \$4.024 \$4.196 \$4.326 \$4.305 \$4.243 \$4.0328 10-Oct \$3.849 \$3.850 \$3.878 \$3.906 \$3.916 \$3.902 \$3.929 \$4.014 \$4.316 \$4.295 \$4.186 \$4,233 \$4.0228 13-Oct \$3.861 \$3.862 \$3.889 \$3.916 \$3.926 \$3.912 \$3.939 \$4.024 \$4.326 \$4,196 \$4,305 \$4.243 \$4.0333 14-Oct \$3.826 \$3.827 \$3.855 \$3.882 \$3.892 \$3.878 \$3.905 \$3.986 \$4.158 \$4.294 \$4.276 \$3.9998 \$4.218 15-Oct \$3.820 \$3.821 \$3.849 \$3.877 \$3.887 \$3.873 \$3,900 \$3.981 \$4.289 \$4,153 \$4.271 \$4.213 \$3.9945 16-Oct \$3.827 \$3.828 \$3.856 \$3.884 \$3.894 \$3.880 \$3.907 \$3.988 \$4.160 \$4.296 \$4.278 \$4,220 \$4.0015 17-Oct \$3.884 \$3.992 \$3.831 \$3.832 \$3.860 \$3.888 \$3.898 \$3.911 \$4.164 \$4.300 \$4,282 \$4,224 \$4.0055 20-Oct \$3,783 \$3,784 \$3.812 \$3.840 \$3.850 \$3.836 \$3.863 \$3.945 \$4.118 \$4.255 \$4.237 \$4.179 \$3.9585 21-Oct \$3.780 \$3.808 \$3.836 \$3.832 \$3,779 \$3.846 \$3.859 \$3.941 \$4.114 \$4.249 \$4.231 \$4.173 \$3.9540 22-Oct \$3.786 \$3.757 \$3.758 \$3.814 \$3.824 \$3.810 \$3.837 \$3.919 \$4.092 \$4.227 \$4,208 \$4.150 \$3.9318 23-Oct \$3.772 \$3.800 \$3.796 \$3.742 \$3.744 \$3.810 \$3.823 \$3.905 \$4.078 \$4.213 \$4.195 \$4,137 \$3.9179 24-Oct \$3.738 \$3.740 \$3.768 \$3.796 \$3.806 \$3,792 \$3.818 \$3.899 \$4.185 \$3.9119 \$4.070 \$4,204 \$4.127 27-Oct \$3.730 \$3.734 \$3.762 \$3.790 \$3.800 \$3.786 \$3.812 \$3.893 \$4.064 \$4.198 \$4.179 \$4.121 \$3.9058 28-Oct \$3.767 \$3.769 \$3.797 \$3.825 \$3.835 \$3.821 \$3.847 \$3.922 \$4.087 \$4.219 \$4.199 \$4,139 \$3.9356 29-Oct \$3.825 \$3.849 \$3.798 \$3.798 \$3.853 \$3.863 \$3.875 \$3.947 \$4.236 \$4.218 \$4,108 \$4.156 \$3.9605 30-Oct \$3.815 \$3.840 \$3.868 \$3.878 \$3.863 \$3.889 \$3.960 \$3.816 \$4.115 \$4.241 \$4.223 \$4.161 \$3.9724 31-Oct \$3.825 \$3.823 \$3.848 \$3.875 \$3.885 \$3.870 \$3.896 \$3.967 \$4.122 \$4.230 \$4,248 \$4.168 \$3.9798 3-Nov \$3.858 \$3.856 \$3.881 \$3.908 \$3.918 \$3.903 \$3.929 \$4.000 \$4.150 \$4.276 \$4.256 \$4.194 \$4.0108 4-Nov \$3.865 \$3.861 \$3.886 \$3.913 \$3.923 \$3,908 \$3.934 \$4.005 \$4.153 \$4.278 \$4.258 \$4.196 \$4.0150 5-Nov \$3.847 \$3.842 \$3.867 \$3.894 \$3.904 \$3.889 \$3.914 \$3.984 \$4.130 \$4.255 \$4.233 \$4.170 \$3.9941 6-Nov \$3.821 \$3.844 \$3.869 \$3.879 \$3.864 \$3.888 \$3.958 \$4.104 \$4,229 \$3.833 \$4,209 \$4.146 \$3.9703 7-Nov \$3.821 \$3.808 \$3.831 \$3.856 \$3.866 \$3.851 \$3.875 \$3.946 \$4.096 \$4,223 \$4.203 \$4.140 \$3.9597 10-Nov \$3.802 \$3.790 \$3.813 \$3.838 \$3.848 \$3.835 \$3.859 \$3.930 \$4.080 \$4.207 \$4.187 \$4.124 \$3.9428 11-Nov \$3.816 \$3.838 \$3.863 \$3.873 \$3.858 \$3.882 \$3.952 \$4.227 \$3.829 \$4.100 \$4.205 \$4.141 \$3.9653 \$3.817 12-Nov \$3.838 \$3.863 \$3.858 \$3.882 \$3.952 \$4.102 \$3.830 \$3.873 \$4.232 \$4.210 \$4.147 \$3.9670 13-Nov \$3.757 \$3.803 \$3.812 \$3.797 \$3.893 \$3.770 \$3.778 \$3.821 \$4.045 \$4.177 \$4,155 \$4.093 \$3.9084 14-Nov \$3.784 \$3.775 \$3.796 \$3.821 \$3.830 \$3.815 \$3.839 \$3.912 \$4.066 \$4.200 \$4.180 \$4.120 \$3.9282

Basis to Columbia Gulf Mainline

Total

Price to be paid for dth/day delivered Apr. 1, 2016 to Mar. 31, 2017:

### Gas Resources Hedging Program Market Indicators Summary December 18, 2014

		1.4	mber 18, 2014	
	Price Pressure	Term	Comments	Pag
Weather		•		
Long Term Forecast (Jan 15Mar 15)	-	Long	NOAA predicting above average temperatures for January 2015—March 2015 from the west coast to the Rockies. Below normal temperatures in the southern states up to the Great Lakes' states to the east coast.	13
Mid Term Forecast (30-60 days)	1	Long	January is predicted to be 6.9% colder than normal based on 10 year normals and February weather is predicted to be 3.0% colder than normal. WSI predicts warm east in December turning colder in January and February.	14
Short Term Forecast (6-10 days)	-	Short	Above normal temperatures covers the CONUS at the beginning of the period being replaced by strong cold in the west and central portions of the CONUS later in the period.	15
Storage Inventory		(10.11	pare derived later in the period.	1 × 10
EIA Weekly Storage Report	-	Long	Storage withdrawals for the week ending December 12th were 64 Bcf. Storage levels are at 3.295 TCF which is 0.2% higher than last year and 7.3% lower than the 5 year average. EIA expects storage inventories will end March at 1.431 Tcf about 383 Bcf below the 5-year average but 609 Bcf above last years ending balance.	16
Industry Publications				100
PIRA Energy Group Winter 2014/15: Summer 2015:	1 +	Long	U.S. GAS PRICE SCORECARD: January 2015 to March 2015 Gas Price Outlook "Bearish" based on fundamentals such as "Lower 48 Gas Production", "US Storage Levels", and "Residential/Commercial".	17-1
Gas DallyGas Price Predictions	<b>†</b> ↓	Long	A survey of investors indicates that gas prices will not be impacted by the drop in crude oil prices and will remain stable for the next two years. Henry Hub will average \$3.89/MMBtu over the next 12 months. 48% of respondents believe a price range of \$4.00 to \$4.49 over the next two years, 23% believe the price will be less than \$4.00 for that period. AGA states abundant gas supplies will mitigate price swings even as environmental regulations increase demand for natural gas. Colder winter weather is needed to keep prices from plummeting due to growth in gas production. Drilling efficiency has increased dry gas production by 4.8 Bcf/d in the last 7 months.	19-2
Gas DailyImpact of Oil Prices on Gas Production	<b>†</b>	Long	Natural gas production could begin to fall off in 2015 as a result of low global oil prices. Associated gas will eventually decline as the number of drilling rigs for crude goes down. Bentek estimates that oil prices would need to remain under \$70/bbl for 6 months or more to have a significant impact on associated gas production. Outside of the Marcellus, the majority of natural gas production growth has come from associated gas-if oil prices stay near \$70/bbl for an extended period, then oil-directed drilling and associated gas will decline.	21
Government Agencies	- 5 · A			
Energy Information Administration Winter 2014/15: \$4.016 Summer 2015: \$3.726	1	Long	The projected Henry Hub natural gas spot price averages \$4.443/MMBtu for 2014 and \$3.829/MMBtu for 2015.	22
Technical Analysis				26.3
Summer 2015 Strip Chart	*		Closed at \$3.49	23
Winter 2015-16 Strip Chart	+		Closed at \$3.83	24
Summer 2016 Strip Chart	+		Closed at \$3.72	25
Winter 2016-17 Strip Chart	+ !		Closed at \$4.05	26
Summer 2017 Strip Chart Winter 2017-18 Strip Chart	+ +		Closed at \$3.91	27
Economy		Short	Closed at \$4.23	28
Demand	<b>+</b>	Long	EIA projects total natural gas consumption will average 73.9 Bcf/d in 2014, an increase of 3.2% from 2013. 2015 gas consumption is expected to be decline as lower residential and commercial consumption offset increases in the electric power and industrial sector.	29
Supply	-	Long	Total marketed production expected to increase by an average rate of 5.5% in 2014 and 3.1% in 2015.	29
Oil Market	1	Long	Brent crude oil spot prices averaged \$79/bbl in November, a decrease of \$8/bbl from October. On November 27, following OPEC's decision to leave its crude oil production target unchanged, Brent crude oil spot prices fell by more than 10%, and have since fallen to \$68/bbl as of December 4, the lowest daily price since May 25, 2010. EIA expects WTI prices to average \$75/bbl in the fourth quarter of 2014 and \$63/bbl in 2015.	30

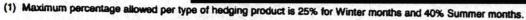
### Meeting Minutes: 428 Annex Conference Room - 1:00 pm

Attendees: Jeff Kern, Joachim Fischesser, Steve Niederbaumer

December 22, 2014.

# Duke Energy Kentucky Hedging Program - Current Position November 2014 - October 2015 As of 12/16/14

Dec-14 Jan-15 Feb-15 Mar-15 Apr-15 May-15 Jun-15 Jul-15 Load Forecast Aug-15 Sep-15 Oct-15 City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawais (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price **Fixed Price** Fixed Price Fixed Price Collar Fixed Price Fixed Price Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

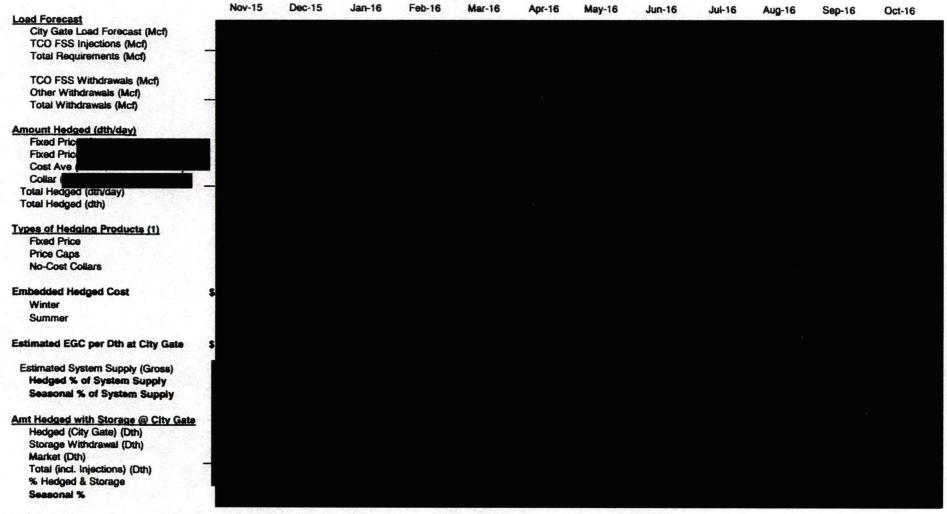






Duke Energy Kentucky
Hedging Program - Current Position
November 2015 - October 2016
As of 12/16/14

KyPSC Case No. 2012-180 2015 Annual Report PUBLIC Page 233 of 333



<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

# Duke Energy Kentucky Hedging Program - Current Position November 2016 - October 2017 As of 12/16/14

Nov-16 Dec-16 Jan-17 Feb-17 Mar-17 Apr-17 May-17 Jun-17 Jul-17 Aug-17 Sep-17 **Load Forecast** Oct-17 City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Cost Ave TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps **No-Cost Collars Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



# KyPSC Case No. 2012-180 2015 Annual Report PUBLIC Page 235 of 333

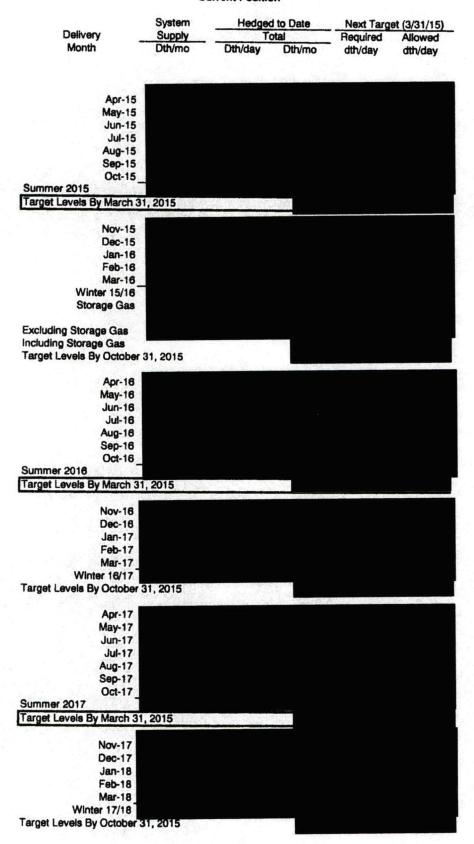
# Duke Energy Kentucky Hedging Program - Current Position November 2017 - October 2018 As of 12/16/14

Nov-17 Dec-17 Jan-18 Feb-18 Mar-18 Apr-18 May-18 Jun-18 Jul-18 Aug-18 Sep-18 Oct-18 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. injections) (Dth) % Hedged & Storage Seasonal %

(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

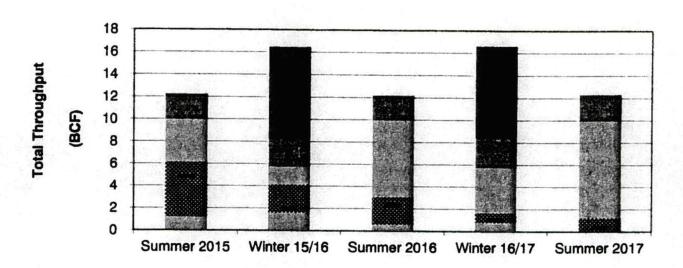
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### Duke Energy Kentucky Hedging Program Current Position

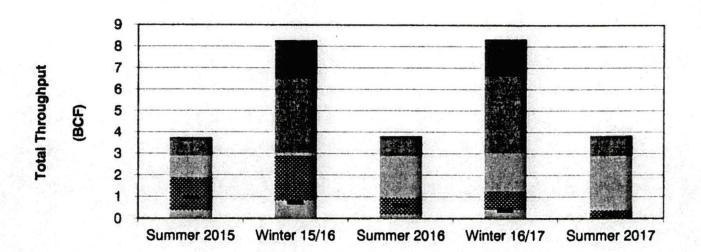


# Hedging Strategy Current Position - December 16, 2014

# **Duke Energy Ohlo**



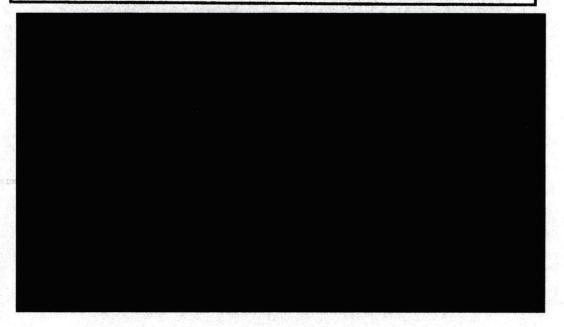
# **Duke Energy Kentucky**



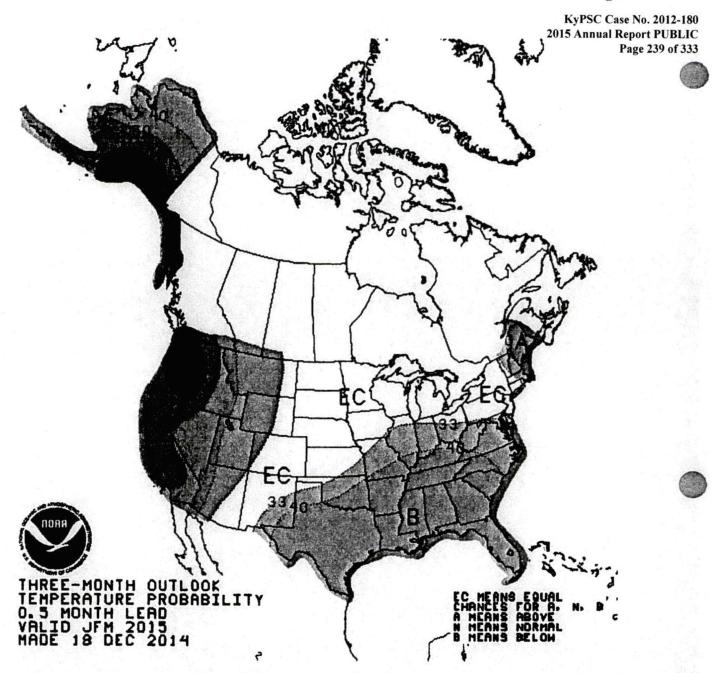
■ Target ■ Base ■ Swing ■ Storage - Hedged

# COMPARISON OF HISTORIC SPOT & PROJECTED PRICES TO CURRENT FUTURES PRICES

		ic Prices: osing Price		i Vi			
	5-yr. avg.	Last Year	PIRA	EIA	NYMEX		ed Prices
	(09/10-13/14)	(2013-2014)	24-Nov-14	9-Dec-14	18-Dec-14	Ohio	Kentucky
Jan	\$4.18	\$4.41	1	\$4.060	\$3.767	\$	
Feb	\$4.21	\$3.23		\$3.950	\$3.788	\$	
Mar	\$3.87	\$3.43	4.4	\$3.850	\$3.738	\$	
Apr	\$3.77	\$3.98		\$3.750	\$3.478	\$	
May	\$3.93	\$4.15		\$3.530	\$3.467	\$	
Jun	\$3.94	\$4.15		\$3.610	\$3.495	\$	
Jul	\$3.99	\$3.71		\$3.750	\$3.532	\$	
Aug	\$3.88	\$3.46		\$3.790	\$3.526	\$	
Sep	\$3.53	\$3.57		\$3.760	\$3.516	\$	
Oct	\$3.62	\$3.50		\$3.890	\$3.545	\$	
Nov	\$3.50	\$3.50		\$3.940	\$3.614	\$	
Dec	\$3.89	\$3.82		\$4.070	\$3.767	\$	
2 Month Avg	\$3.86	\$3.74		\$3.829	\$3.603	A 14 (12)	
	er Average			\$3.726	\$3.508	1059	
Winter A	Average			\$3.974	\$3.735		



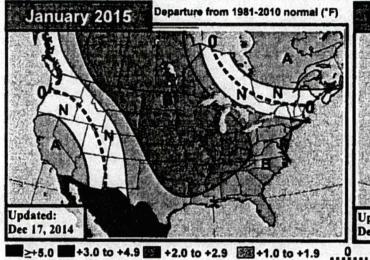
Page 1 of 1



# EarthSat 30-60 Day Outlook

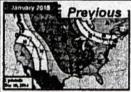
Wednesday, December 17, 2014 Meteorologists: PV/BH/SS

WEATHER SERVICES



February 2015 Departure from 1981-2010 normal (°F) Updated: Dec 17, 2014 -1.0 to -1.9 -2.0 to -2.9

\_\_\_\_-0.9 to 0.9



# No changes to forecast

Confidence increases in return of cold

As we get closer to January confidence is increasing in the anomalously-warm December pattern ending late month and cold returning right in time for the New Year. Our current 16-20 Day forecast valid Jan 1-5 shows this cold having already arrived with belows for all areas east of the Rockies and much belows in the Midwest as a negative AO and negative EPO combine to open the Arctic up for business. Our overall forecast for January is unchanged with cold threats expected to continue across much of the eastern 2/3 of the US and focused over the Central US. While the Midwest to the East carries colder risks, especially if early month cold is more impressive in these regions, the risk from the Western Plains to the West Coast is in the warmer direction where upper level ridging may build up more strongly, yielding more widespread and stronger aboves.

Jan GWHDD\*\* Forecasts

\*10Y Normal '04-13

Jan 2015 Fcst:

995

10Y Normal\* 930.9 952.1 30Y Normal Jan-2014 1048.0

No Change

"National Pop-Weighted CDDs



### No changes to forecast

-3.0 to -4.9

Cold opportunities continue across eastern half

No changes were made to the February outlook which continues to favor cold across the eastern half and remaining strongest in the Central US. The weak/moderate El Nino, positive PDO, and negative QBO are all factors in allowing for continued opportunities for upperlatitude blocking, and late-autumn Eurasian snow cover remains an influence in that regard as well. Confidence is improved now that signs of the expected cold pattern are emerging in the mid-range forecast. The CFS model's 2-meter temperature anomalies are less supportive of the cold, but the height pattern supports ridging in the West up to northwestern Canada which would open the door for continued cold downstream. Risks may be to the colder side in the East if more blocking is seen in the North Atlantic.

Feb GWHDD\*\* Forecasts

\*10Y Normal '04-13

Feb 2015 Fcst:

820

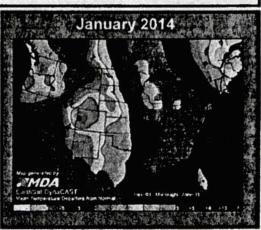
10Y Normal\* 796.2 30Y Normal 779.1 Feb-2014 882.8

No Change

"National Pop-Weighted CDDs



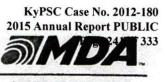
Despite a late-month cold surge December still looks to be an unseasonably warm month for the vast majority of the US on the whole, especially across the western half. If the current 1-15 Day forecast now valid out to the end of the month is correct, December would total only 799.0 GWHDDs which would be the 15th warmest. December since 1950 based on that metric and would be over 100 GWHDDs less. than last December (91,1.2). Our 30/60 Day outlooks failed to capture this warmth by a wide margin, with a special update earlier this month coming much closer in capturing the overall pattern.



# EarthSat 6-10 Day Forecast—Detailed

Thursday, December 18, 2014

Meteorologist: PV/AC



**WEATHER SERVICES** 

# Day 6: Tuesday, Dec 23

Previous Forecast:



Forecast Confidence: 8/10



# Adjustments To East Warmer Early & Late

# Strong Cold Filters Into Western & Central U.S.

A storm system stretching from the Mississippi Valley into the Midwest early in the period continues to press even more warmth into the East and South during this time period. In the wake of this system, a weak high pressure system diving into the Midwest and toward the South might permit a little shot of cooler air in the mid-period. However, this is a low confidence risk. The other big story is the advancement of a strong high pressure system out of western Canada, helping to introduce stronger cold air into the West and toward the Central U.S. Cold air aims to reach parts of Texas at period's end. Meanwhile, warmer temperatures push into the East downstream of this cold air diving into the Central U.S.

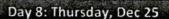
### Day 7: Wednesday, Dec 24

Previous Forecast:



Forecast Confidence: 8/10

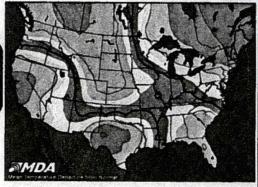




Previous Forecast:



Forecast Confidence: 7/10



# Day 9: Friday, Dec 26

Previous Forecast:



Forecast Confidence: 7/10



# Day 10: Saturday, Dec 27

Previous Forecast:



Forecast Confidence: 6/10

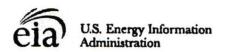


53 -15

0°F

+2

A +5 A +8 MA+15 SA



# Weekly Natural Gas Storage Report

for week ending December 12, 2014 | Released: December 18, 2014 at 10:30 a.m. | Next Release: December 24, 2014

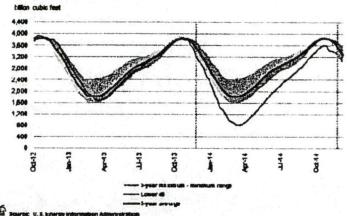
### Working gas in underground storage, lower 48 states Summary text CSV JSN

						Historical C	omparison	n <b>s</b>
		billion	Stocks cubic feet (Bcf)		ear ago 2/12/13)	5-Year average (2009-2013)		
Region	12/12/14	12/05/14	net change	Implied flow	(Bcf)	% change	(Bcf)	% change
East	1,725	1,780	-55	-55	1,702	1.4	1,887	-8.6
West	471	470	1		458	2.8	484	-2.7
Producing	1,099	1,109	-10	-10	1,129	-2.7	1,182	-7.0
Salt	325	323	2	2	282	15.2	249	30.5
Nonsalt	774	787	-13	-13	848	-8.7	933	-17.0
Total	3,295	3,359	-64	-84	3,289	0.2	3,553	-7.3

### Summary

Working gas in storage was 3,295 Bcf as of Friday, December 12, 2014, according to EIA estimates. This represents a net decline of 64 Bcf from the previous week. Stocks were 6 Bcf higher than last yeer at this time and 258 Bcf below the 5-year everage of 3,553 Bcf. In the East Region, stocks were 162 Bcf below the 5-year average following net withdrawals of 55 Bcf. Stocks in the Producing Region were 83 Bcf below the 5-year average of 1,182 Bcf after a net withdrawal of 10 Bcf. Stocks in the West Region were 13 Bcf below the 5-year average after a net addition of 1 Bcf. At 3,295 Bcf, total working gas is within the 5-year historical range.

### Working gas in underground althrige compared with the 5-year maximum and minimum



Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2009 through 2013.

Source: Form EIA-912, "Weetdy Underground Natural Gas Storage Report." The dashed vertical lines indicate current and year-age weekly periods.

# PIRA North American Gas Price Overview Per MMBTU

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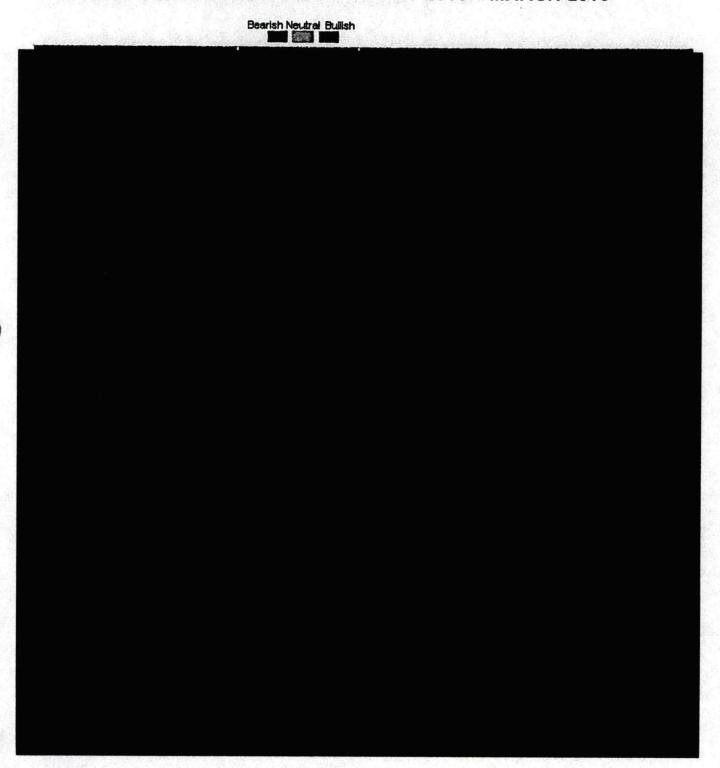
Winter 2012- \$ Winter 2013- \$ 2014	Summer \$ Summer 2012	Average Average 2012 \$ 2013	Dec-12 Dec-13	Nov-12 Nov-13	Oct-12 Oct-13		Aug-12 Aug-13	Jul-12 Jul-13	Jun-12 Jun-13	May-12 May-13	Apr-12 Apr-13	Mar-12 Mar-13	Feb-12 Feb-13	Tr. Constitution of the state o
	\$ Summer 2014	Average 2014	Dec-14	Nov-14	Oct-14	Sep-14	Aug-14	Jul-14	Jun-14	May-14	Apr-14	Mar-14	Feb-14	the same of the sa
Winter 2014 \$	ner \$	age 4 \$	14	14	14	14	14	14	14	-14	14	-14	14	
	Summer \$ 2015	Average 2015 \$	Dec-15	Nov-15	Oct-15	Sep-15	Aug-15	Jul-15	Jun-15	May-15	Apr-15	Mar-15	Feb-15	-

North American Gas Forecast Monthly

November 24, 2014

NATURAL GAS

U.S. GAS PRICE SCORECARD: JANUARY 2015 - MARCH 2015



# **Pricing Predictions**



# Investors See Gas Stocks as Staying Solid: Report--December 12, 2014

Bernstein Research client survey indicated investors in energy stocks think natural gas prices will not be impacted by the drop in crude oil products and will remain stable for the next two years.

"Energy stock buyers think that Henry Hub natural gas prices will average \$3.89/MMBtu over the next 12 months, a 1% drop from the results of the same survey in the third quarter, and 6% higher than the 12-month NYMEX strip."

The same group of 134 participants think gas prices will rise to \$4.30/MMBtu over the next two years, again 6% higher than the strip. "Nearly half, or 48% of respondents see the long-term price expectations in the \$4-\$4.49/MMBtu range, while 23% of respondents think gas prices will average less than \$4/MMBtu over the next two years."

# Gas Group Predicts Lower Volatility, Increasing Demand—December 12, 2014

The incoming chairman of the AGA stated that abundant gas supplies from the Marcellus and Utica plays are likely to mitigate price swings in the gas market even as proposed environmental regulations increase demand for natural gas.

There are many projects slated to come online in 2017 and 2018 that will help Marcellus and Utica gas to market centers, mitigating pricing displacement and contributing to gas remaining in a range from \$4 to \$6 for the foreseeable future.

"Thanks to its domestic abundance, paired with its economic, environmental and energy security benefits, I happen to believe that natural gas should be and it will be the preferred source of energy for this nation for decades and decades to come."

# Extreme Cold This Winter Seen as Key to Absorbing Excess Gas Supply—December 10, 2014

According to analyst Andy Weissman, growth in natural gas production has required colder winter weather to keep prices from plummeting, setting up the current market for more downside.

"According to Weissman, the natural gas industry has become a victim of its own success as the availability of shale gas and increased drilling efficiency has increased dry gas production by a record 4.8 Bcf/d in just the past seven months." As a result the market has been increasingly imbalanced over the past 24 months with the absorbance of excess supply depending on the severity of the winter cold.

While prices responded to the high heating demand last winter and while forecasts for a cold January—February 2015 encouraged many traders to look for a repeat this winter forecasts from Weather Decision Technologies are not nearly as supportive.

"Weissman said mainstream forecasters' calls for an abrupt turn to colder weather to start the new year could temporarily boost winter month prices for natural gas to \$4.22 or higher but the odds of extended cold weather are rapidly decreasing and timing is critical."

## Miscellaneous Information



# Analysts Debate Impact of Low Global Oil Prices for Production in Texas—December 4, 2014

Natural gas production in Texas could begin to fall off in 2015 as a result of low global oil prices.

"Current crude price trends are likely to begin to make an impact on gas production in the Lone Star State by the middle of next year. Texas is by far the largest natural gas producing state in the US. It seems unfathomable that a 30% to 40% decline in crude oil prices is not going to have some impact on activity levels. The way that's going to play out is in a couple of numbers, drilling permits and rig count most noticeably."

Associated gas will eventually decline as the number of drilling rigs for crude goes down. Bentek estimates that oil prices would need to remain under \$70/b for 6 months or more to have a significant impact on associated gas production.

## Oil Price Plunge Raises Red Flags: Analysts-December 2, 2014

With OPEC's refusal to cut its oil output and the price of a barrel of oil below \$70/b, analysts remain confident that any impact on associated gas would take 6 to 9 months to be felt.

"Falling oil prices will have a bullish influence on natural gas prices, although that effect won't be felt for another 6 to 9 months according to Gelber & Associates. Outside of the Marcellus, the majority of natural gas production growth has come from associated gas. If oil prices stay near \$70 for an extended period, a likely possibility, then oil-directed drilling and the marketed gas associated with it, will decline."

# Energy Information Administration Henry Hub Pricing Per MMbtu December 9, 2014 Release

Jan-12		2.67
Feb-12		2.50
Mar-12		2.18
Apr-12		1.95
May-12		2.43
Jun-12		2.46
Jul-12		2.95
Aug-12		2.84
Sep-12		2.85
Oct-12		3.32
Nov-12		3.54
Dec-12		3.34
Average		
2012	\$	2.753
Summer	_	2 606
2012	>	2.686
Winter 2012- 2013	\$	3.470

	Jan-13		3.33
	Feb-13		3.33
	Mar-13		3.81
	Apr-13		4.17
	May-13		4.04
	Jun-13		3.83
	Jul-13		3.62
	Aug-13		3.43
	Sep-13		3.62
	Oct-13		3.68
	Nov-13		3.64
7	Dec-13		4.24
	Average		
	2013	\$	3.728
	Summer	\$	3.770
	2013	7	3.770
	Winter 2013	\$	4.698
	2014	~	

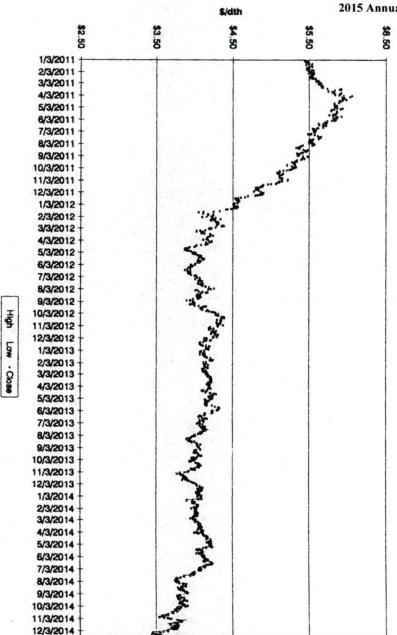
Jan-14	4.71
Feb-14	6.00
Mar-14	4.90
Apr-14	4.66
May-14	4.58
Jun-14	4.59
Jul-14	4.05
Aug-14	3.91
Sep-14	3.92
Oct-14	3.78
Nov-14	4.12
Dec-14	4.10
Average 2014	\$ 4.443
Summer 2014	\$ 4.213

Jan-15	4.06
Feb-15	3.95
Mar-15	3.85
Apr-15	3.75
May-15	3.53
Jun-15	3.61
Jul-15	3.75
Aug-15	3.79
Sep-15	3.76
Oct-15	3.89
Nov-15	3.94
Dec-15	4.07
Average	
2015	\$ 3.829
Summer 2015	\$ 3.726

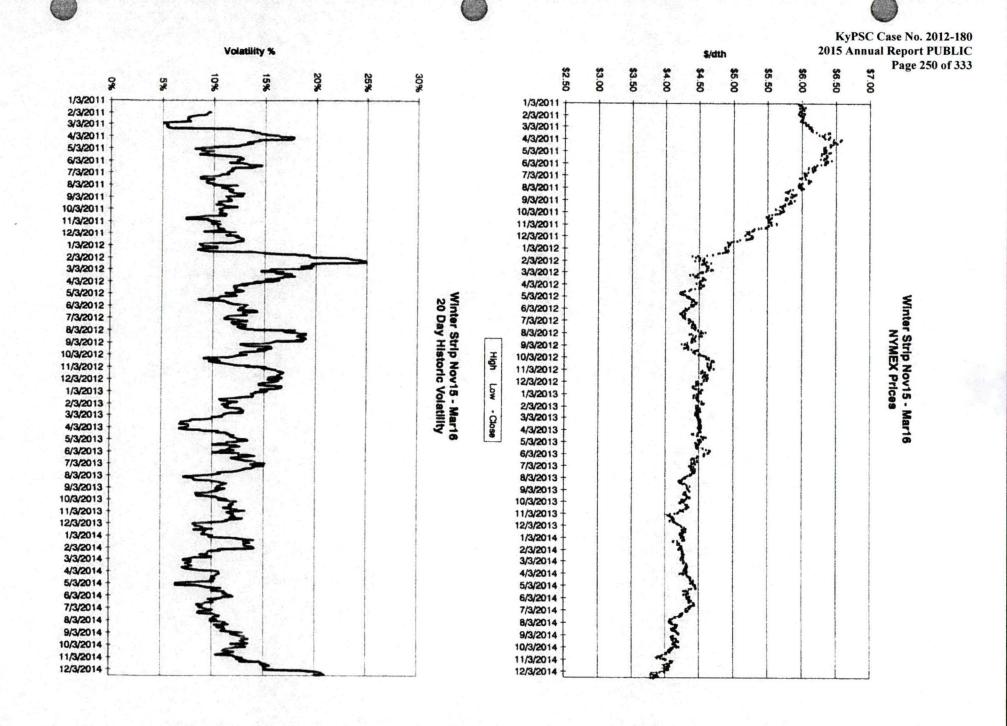
Summer Strip 2015
NYMEX Prices

Summer 2015 20 Day Historic Volatility

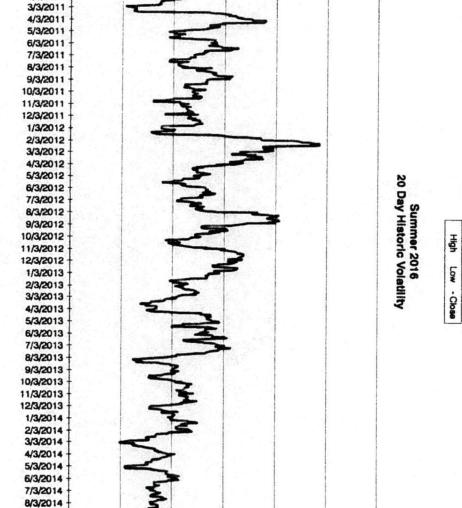
Volatility %



23



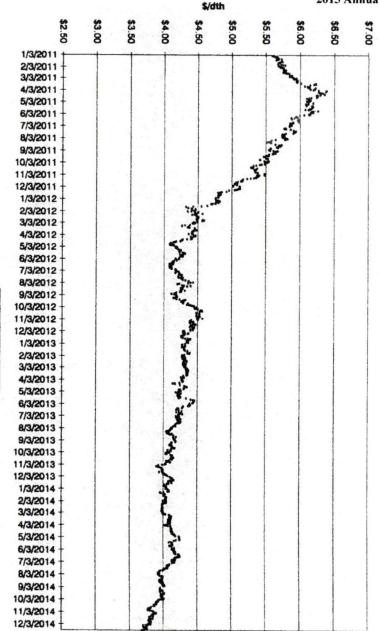
Summer Strip 2016
NYMEX Prices



Volatility %

15%

25%



125

1/3/2011

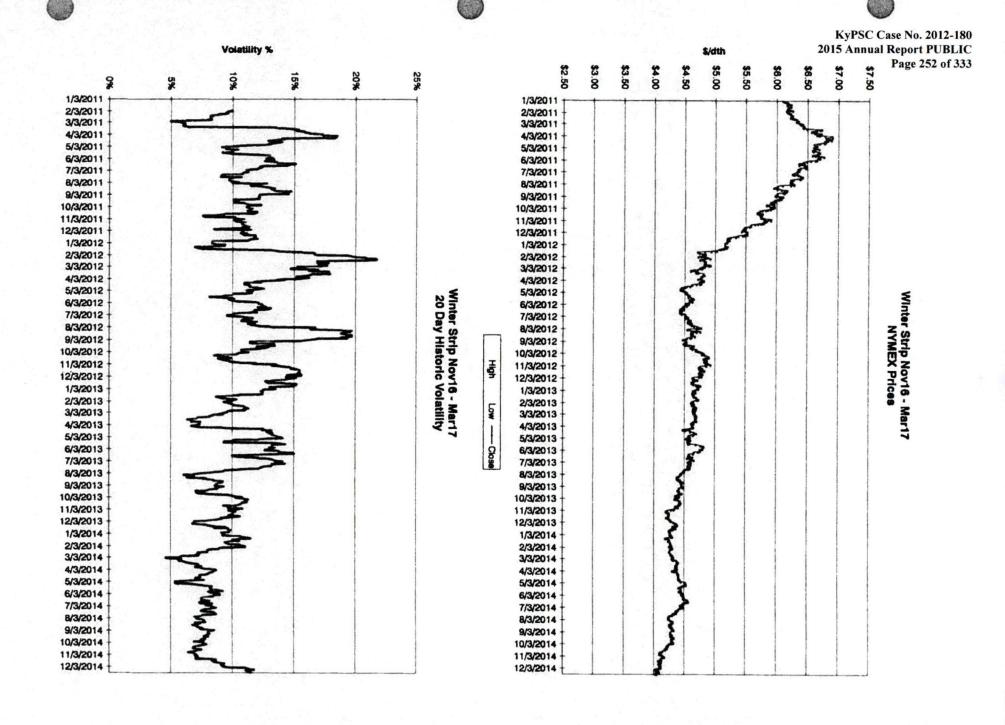
2/3/2011

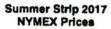
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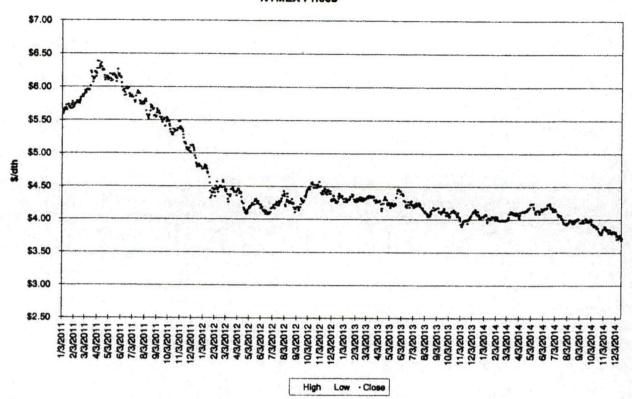
10/3/2014

11/3/2014

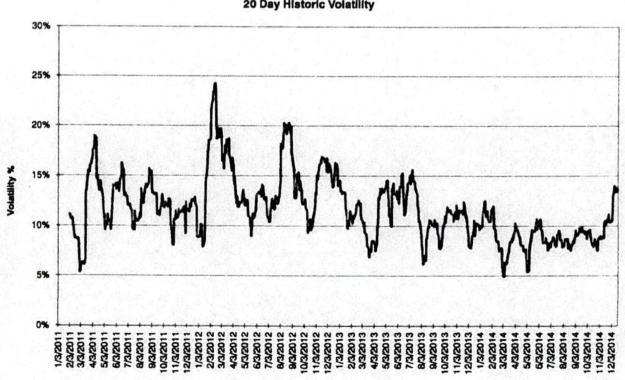
12/3/2014



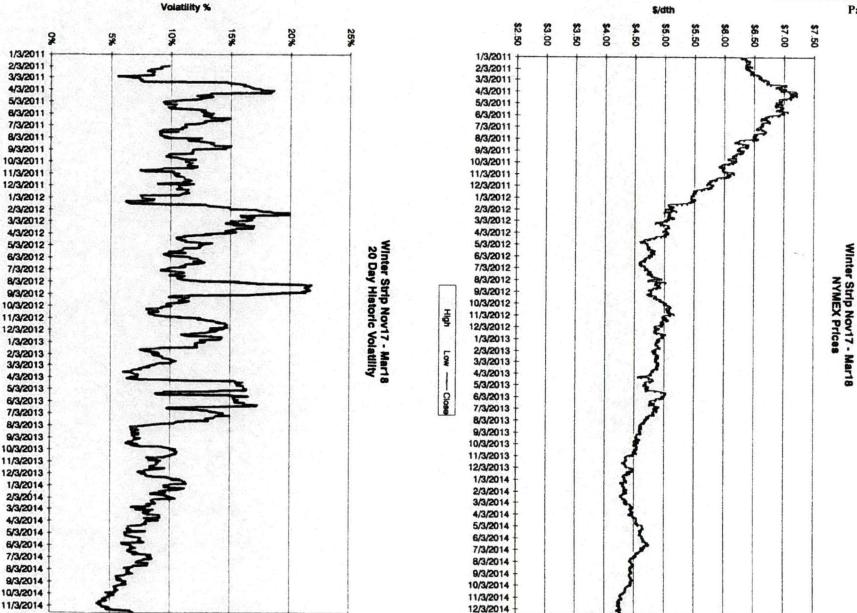




Summer 2017 20 Day Historic Volatility



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Independent Statistics & Analysis

# U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

#### **Natural Gas**

#### U.S. Natural Gas Consumption.

ElA expects total natural gas consumption to average 73.9 Bcf/d in 2014, an increase of 3.2% from 2013 and 1% higher than in last month's STEO. This upward revision largely reflects colder-than-forecast temperatures in November. In 2015, total natural gas consumption is expected to decline as lower residential and commercial consumption offset increases in the electric power and industrial sectors. Natural gas consumption in the power sector is expected to average 22.1 Bcf/d in 2014, a 0.8% decline compared to last year, reflecting higher natural gas prices this year. EIA expects natural gas consumption in the power sector to increase to 22.7 Bcf/d in 2015.

#### U.S. Natural Gas Production and Trade.

EIA expects natural gas marketed production to grow by an annual rate of 5.5% in 2014 and 3.1% in 2015. EIA projects that the strong increases already seen in the Lower 48 states for most of this year will continue through 2015, more than offsetting the long-term trend of declining production in the Gulf of Mexico. As of September, the most recent month for which EIA data are available, dry natural gas production was 4.6 Bcf/d greater than it was in September 2013. Production usually declines in September due to seasonal maintenance; however, production this year increased slightly from August to September.

Growing domestic natural gas production is expected to reduce demand for imports from Canada and spur exports to Mexico. EIA expects exports to Mexico, particularly from the Eagle Ford Shale in South Texas, to increase because of growing demand from Mexico's electric power sector and flat Mexican production.

#### Natural Gas Inventories.

Natural gas working inventories totaled 3,410 Bcf as of November 28, which was 227 Bcf lower than at the same time last year and 372 Bcf lower than the previous five-year (2009-13) average. Following last year's extremely cold winter, inventories fell to about 1,000 Bcf below the five-year average in mid-April. After a strong injection season, inventories were 237 Bcf below the five-year average on November 7. EIA projects that end-of-March 2015 inventories will total 1,431 Bcf, which is 225 Bcf below the five-year (2010-14) average.

#### **Crude Oil Prices**

North Sea Brent crude oil spot prices averaged \$79/bbl in November, down \$8/bbl from the October average and the first month Brent crude oil prices have averaged below \$80/bbl since September 2010. The combination of robust world crude oil supply growth and weak global demand has contributed to rising global inventories and falling crude oil prices. On November 27, following OPEC's decision to leave its crude oil production target unchanged, Brent crude oil spot prices fell by more than 10%, and have since fallen to \$68/bbl as of December 4, the lowest daily price since May 25, 2010.

The monthly average WTI crude oil spot price fell from an average of \$84/bbl in October to \$76/bbl in November. Like Brent crude oil prices, WTI prices have decreased considerably, falling by more than 28% since reaching their 2014 peak at an average of \$106/bbl in June. EIA now expects WTI crude oil prices to average \$75/bbl in the fourth quarter of 2014 and \$63/bbl in 2015, \$5/bbl and \$15/bbl lower than projected in last month's STEO, respectively. The discount of WTI to Brent crude oil is forecast to widen slightly from current levels, averaging \$5/bbl in 2015.

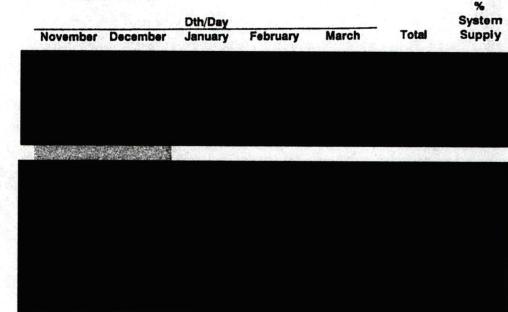
#### Duke Energy Hedging Program Remaining Base Not Yet Locked in Winter 2014-15



Previously Hedged	
	Col Gulf Mainline
	Tex Gas Zone 1
	Tex Gas Zone 1
ro <del>tal</del>	
System Supply	
Duke Energy Kentucky	
Previously Hedged	
	Col Gulf Mainline
(10년) 1986	Col Gulf Mainline
Total	
System Supply	

<u>Duke Energy—Total</u> Previously Hedged

Total



#### Gas Resources Hedging Program Market indicators Summary January 29, 2015

	Price Pressure	Term	Comments	Page
Weather	Triessure			Her
Long Term Forecast (Jun 15Aug 15)	-	Long	NOAA predicting above average temperatures for June 2015August 2015 from the west coast to the Rockies and the east coast states. Remainder of CONUS equal chance of above, normal, or below.	13
Mid Term Forecast (30-60 days)	1	Long	February is predicted to be 1.7% colder than normal based on 10 year normals and March weather is predicted to be 4.8% colder than normal.	14
Short Term Forecast (6-10 days)	1	Short	Above normal temperatures covers most of CONUS west of the Mississippi and below to much below normal weather covers the CONUS east of the Mississippi.	15
Storage Inventory			Teast of the Mississippi.	
EIA Weekly Storage Report		Long	Storage withdrawals for the week ending January 23rd were 94 Bcf. Storage levels are at 2.543 TCF which is 14.6% higher than last year and 3.0% lower than the 5 year average. EIA expects storage inventories will end March at 1.665 Tcf about 9 Bcf greater the 5-year average balance.	16
Industry Publications				
PIRA Energy Group Winter 2014/15: Summer 2015:	t	Long	U.S. GAS PRICE SCORECARD: January 2015 to October 2015 Gas Price Outlook 'Bearish' based on fundamentals such as "Lower 48 Gas Production", "US Storage Levels", and "Residential/Commercial".	17-18
Gas DailyGas Price Predictions	1	Long	EIA predicts 2015 gas price at the Henry Hub will average \$3.44/MMBtu which is \$.95 lower than the average 2014 price. In addition, EIA estimates 2016 average price of \$3.86 and reduced 1st quarter estimate of \$3.23 down \$.72 from last month's prediction. According to EIA the drop in near-term projections is due to warm December weather and production increases. Citing mild weather and production growth, ICF expects slight seasonal rise in gas prices followed by lower prices throughout 2015.	19
Gas DailyLNG Exports	<b>†</b>	Long	Legislation would require a final decision from DOE on LNG export application within 30 days of FERC's completion of the environmental review of the terminal. DOE has been criticized for only issuing 5 final decisions on 37 applications since 2010. US developers of projects to export LNG are in a more competitive position than other gas-producing nations. US based terminals are often fully subscribed under take-or-pay contracts, the commodity price risk is transferred to the buyers. Projects furthest along in the regulatory approval process are likely to be completed, only two projects Sabine Pass and Freeport have broken ground.	20-21
Gas DailyMiscellaneous	1	Long	Baker Hughes reported the number of oil and gas rigs dropped 43 to 1,633. The rig count has fallen for 7 weeks and is at the lowest level since August 2010. Wood Mackenzie projected a 40% decline in drilling and completion spending from \$140 billion in 2014 or an estimated \$90 billion this year. Power generation is expected to be the biggest driver for US gas demand in 2015. Coal plants are shutting down primarity due to environmental regulations.	22
Sovernment Agencies Energy Information Administration Winter 2015/16: \$3.848	1	Long	The projected Henry Hub natural gas spot price averages \$3.443/MMBtu	23
Summer 2015: \$3.430			for 2015 and \$3.862/MMBtu for 2016.	20
echnical Analysis	1 1000			2 11
Summer 2015 Strip Chart	+		Closed at \$2.92	24
Winter 2015-16 Strip Chart Summer 2016 Strip Chart	+ +		Closed at \$3.32	25
Winter 2016-17 Strip Chart	+ +		Closed at \$3.31 Closed at \$3.84	26
Summer 2017 Strip Chart	3 + 2 4		Closed at \$3.55	27
Winter 2017-18 Strip Chart	1		Closed at \$3.84	28
conomy	7	SHORE		28
Demand	+	Long	EIA projects total natural gas consumption will average 73.8 Bcf/d in 2015 and 74.8 Bcf/d in 2016 an increase of 0.3% and 1.6% respectively from 2014. Growth is largely driven by the industrial and electric power sectors, while residential and commercial consumption is projected in 2015, then remain flat in 2016.	30
Supply	-	Long	Growth in marketed gas production is expected to continue through 2015	31
Oil Market	1		and 2016.  Brent crude oil spot prices averaged \$62/bbl in December, a decrease of \$17/bbl from November. EIA expects Brent prices to average \$58/bbl in 2015, \$11/bbl lower than projected in last month's report. EIA expects WTI prices to average \$55/bbl in 2015, \$8/bbl lower than projected in last month's report and \$71/bbl in 2016.	31

Meeting Minutes: 410 Main Conference Room - 1:00 pm Attendees: Jeff Kem, Chuck Whitlock, Mike Brumback Fischesser, Steve Niederbaumer

Discussed market fundamentals including weather, storage levels, PIRA and EIA price forecasts, analysts projections of gas prices, amount of supply available, economic influences on supply and demand and the current position of DEK Hedging Programs. The EIA Storage Report indicates that storage levels are 14.6% above year ago levels and only 3% (79 Bcf) below the 5-year average. Significant discussions took place regarding the dramatic drop in prices for all strips monitored. Most of these strips are within 5 cents of their all-time lows. The primary driver of the decrease in prices has been storage inventory levels due to strong storage injections and lower withdraw amounts. Based on discussions, a decision was made that additional hedging is recommended at this time. Significant discussion took place regarding the amount and type of hedging that was recommended. Due to volatility, the products recommended are Costless Collars and Fixed Price deals. Consensus was reached for the following:

Dith/d (DEK) on Columbia Mainline for Apr. 1, 2015--Mar. 31, 2016 a Costless Collar with a provided ceiling of the columbia Mainline for Apr. 1, 2015--Mar. 31, 2017 Fixed Price.

# Duke Energy Kentucky Hedging Program - Current Position November 2014 - October 2015 As of 01/28/15

Nov-14 **Dec-14** Jan-15 Feb-15 Mar-15 Apr-15 May-15 Jun-15 **Load Forecast** Jul-15 Aug-15 Sep-15 Oct-15 City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawais (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Fixed Price Fixed Price Fixed Price Collar Fixed I Fixed Price Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %



<sup>· (1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.



Duke Energy Kentucky
Hedging Program - Current Position
November 2015 - October 2016
As of 01/28/15

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Load Forecast	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
City Gate Load Forecast (Mcf)												
TCO FSS Injections (Mcf)												
Total Requirements (Mcf)												
TCO FSS Withdrawals (Mcf)												
Other Withdrawals (Mcf)												
Total Withdrawals (Mcf)												
Amount Hedged (dth/day)												
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Price Caps												
No-Cost Collars												
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Winter												
Summer												
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Estimated System Supply (Gross)												
Hedged % of System Supply												
Seasonal % of System Supply												
nt Hedged with Storage @ City Gate												
Hedged (City Gate) (Dth)												
Storage Withdrawal (Dth)												
Market (Dth)												
Total (incl. Injections) (Dth)												
% Hedged & Storage												
Seasonal %												

#### Duke Energy Kentucky Hedging Program - Current Position November 2016 - October 2017 As of 01/28/15

Nov-16 Dec-16 Jan-17 Feb-17 Mar-17 Apr-17 May-17 Jun-17 Load Forecast Aug-17 Sep-17 Oct-17 City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price ( Cost Ave ( TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %



<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.





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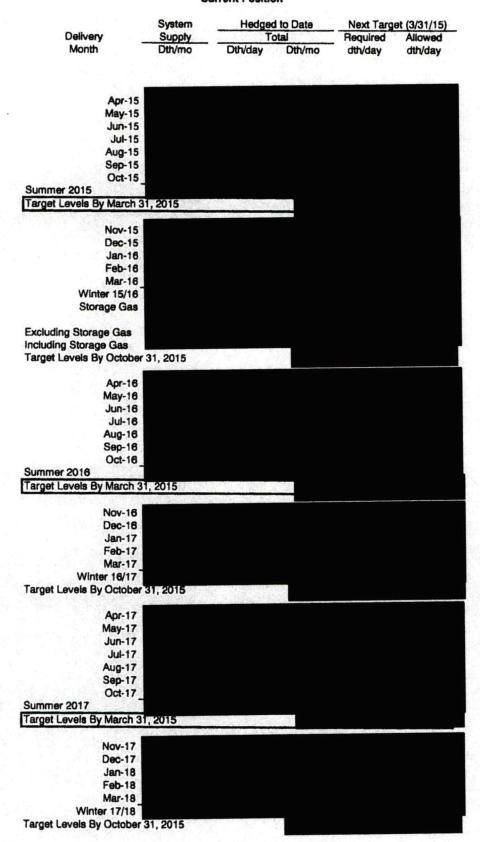
#### Duke Energy Kentucky Hedging Program - Current Position November 2017 - October 2018 As of 01/28/15

Nov-17 Dec-17 Jan-18 Feb-18 Mar-18 Load Forecast Apr-18 May-18 Jun-18 Jul-18 Aug-18 Sep-18 City Gate Load Forecast (Mcf) Oct-18 TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawais (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) Fixed Price Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

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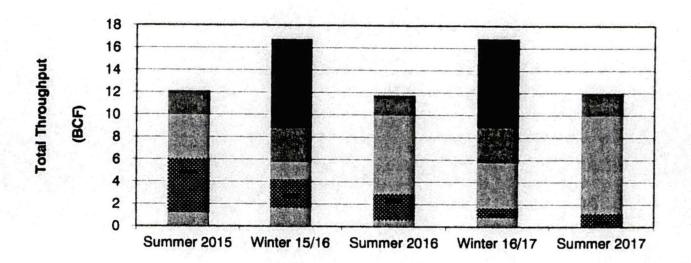
<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

#### Duke Energy Kentucky Hedging Program Current Position

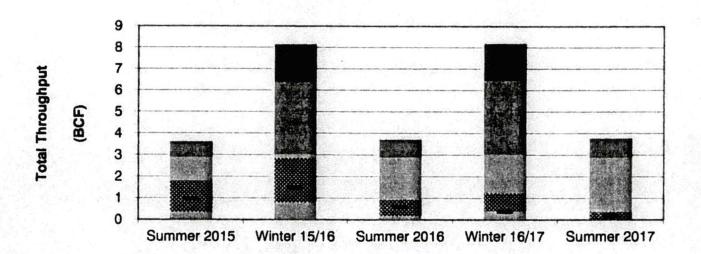


#### Hedging Strategy Current Position - January 28, 2015

#### **Duke Energy Ohio**



#### **Duke Energy Kentucky**



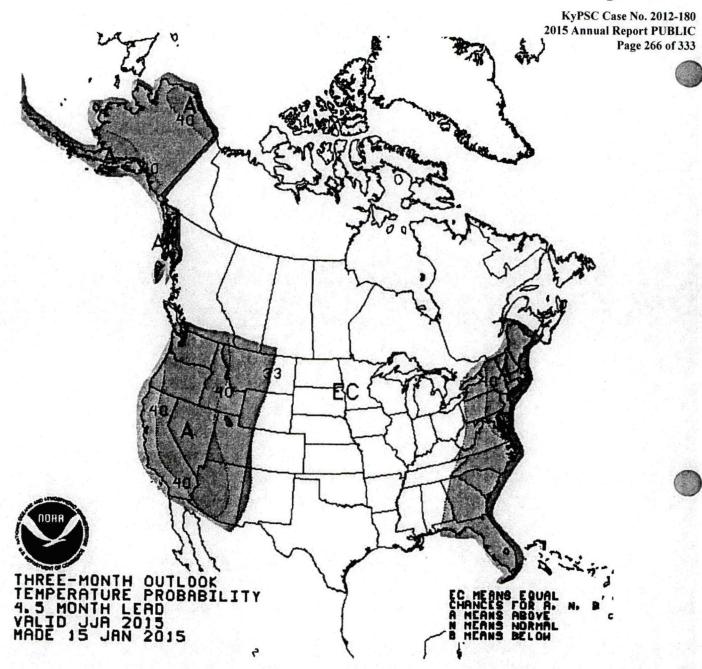
■ Target ■ Base ■ Swing ■ Storage - Hedged

# COMPARISON OF HISTORIC SPOT & PROJECTED PRICES TO CURRENT FUTURES PRICES KyPSC Case No. 2012-180 2015 Annual Report PUBLIC Page 265 of 333

		ic Prices: losing Price						
	5-yr. avg.	Last Year	PIRA	EIA	NYMEX	Hedged Prices		
	(10/11-14/15)	(10/11-14/15) (2014-2015) 19-De		13-Jan-15	29-Jan-15	Ohio	Kentucky	
Feb	\$4.21	\$5.56	100 may 200 may 200	\$3.250	\$2.866			
Mar	\$3.87	\$4.86		\$3.230	\$2.851			
Apr		\$4.58		\$3.300	\$2.874			
May	\$3.93	\$4.80		\$3.250	\$2.917			
Jun	\$3.94	\$4.62		\$3.340	\$2.974			
Jul	\$3.99	\$4.40		\$3.380	\$2.987			
Aug	\$3.88	\$3.81	i i	\$3.540	\$2.966			
Sep	\$3.53	\$3.96		\$3.530	\$2.992			
Oct	\$3.62	\$3.98		\$3.670	\$3.127			
Nov	\$3.50	\$3.73		\$3.730	\$3.291			
Dec	\$3.89	\$4.28	3	\$3.870	\$3.443			
Jan	\$3.62	\$3.03		\$3.920	\$3.412			
2 Month Avg	\$3.81	\$4.30		\$3.501	\$3.058			
	er Average			\$3.430	\$2.977			
Winter	Average		1 22	\$3.600	\$3.173			



Page 1 of 1



# EarthSat 30-60 Day Outlook

Wednesday, January 28, 2015

Meteorologists: BJ/BH/SS/PV



**WEATHER SERVICES** 



Departure from 1981-2010 normal (°F) March 2015 Jan 28, 2015 +3.0 to +4.9 +2.0 to +2.9 +1.0 to +1.9 0

-0.9 to 0.9



Core of cold shifts to the East

Warm changes from West to Midwest

Our February forecast features significant changes with the core of cold now expected to be stronger and more East-based while western warmth is expected to be stronger. Despite the colder look in the major metro areas of the Northeast, the warm changes across the western 2/3 of the US including the western and central Midwest outweigh the colder East slightly in terms of demand, leading to a loss of 5 GWHDDs from the previous outlook. The forecast is based on the idea of ridging remaining firm over the Western US and occasionally intruding northward into Alaska, allowing for cold opportunities across the eastern half. Occasional eastward progression of the ridge keeps the cold more East-based with opportunities for milder periods in the Plains and Midwest. A strongly positive-trending AO through the first half of the month could support less sustainable cold in the East.

Feb GWHDD\*\* Forecasts

\*10Y Normal '05-14

Feb 2015 Fcst:

815

10Y Normal\* 801.3 30Y Normal 779.1 Feb-2014 882.8

Change: -5



-1.0 to -1.9 -2.0 to -2.9

Colder across eastern half

Warmer in the West

The March forecast has trended colder across the eastern half with the area of belows expanded to include more of the Midwest and parts of the Mid-Atlantic. Meanwhile, persistence lends to a warmer change in the West with more widespread aboves expected and further warm risk possible as western ridging remains dominant. The forecast remains based on weak El Niño, positive PDO, and negative QBO influences with the negative QBO potentially leading to further cold risk across the eastern half if blocking increases as a result. The latest CFS model supports the idea of western warmth but shows marginal belows limited to Texas with near normal temperatures elsewhere across the eastern

Mar GWHDD\*\* Forecasts

\*10Y Normal '05-14

Mar 2015 Fcst:

645

615.4 10Y Normal\* 30Y Normal 631.2 Mar-2014 720.1

Change: +10

"National Gas-Weighted HDDs



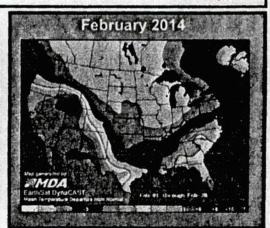
Final 60 Day Outlook



Final 30 Day Outlook



The last seven days have featured some impressive warmth across the western 2/3 of the US, particularly the northern Plains, and the month on the whole looks to show widespread above normal temperatures across much of the western half. Meanwhile, cold conditions are seen in the East as well as in Texas. Our forecasts generally missed the placement of the cold, showing it centered over the northcentral US as opposed to the Northeast, and missed on the magnitude of warmth in the West. January is expected to tally 964.5 GWHDDs, colder than the 30Y normal (952.1) but much less cold than last January (1048.0).

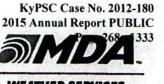


MDA Information Systems LLC 820 West Diamond Ave, Suite 300, Gaithersburg, MD 20878 Tel 240-833-8300 Fax 240-833-8301 www.mdaus.com ©2015 [029000000107.pdf-Version 2.3]

# EarthSat 6-10 Day Forecast—Detailed

Thursday, January 29, 2015

Meteorologist: BJ/AC



**WEATHER SERVICES** 

Day 6: Tuesday, Feb 3

**Previous** Forecast:



**Forecast** Confidence: 8/10



Strong Belows Appear On Occasion In MW/NE

Late Period Warming Across West

Canadian high pressure is still expected to drop into the Plains during the mid-period, resulting in strong cold anomalies diving into the Midwest and the East late. Risks include less cold air along parts of the Midwest in the early period and into the East at mid-period ahead of this advancing high pressure. The amplification of the pattern is paramount during the second half of the period with an east Pacific ridge building into the West. Much above normal anomalies become more widespread in the Interior West while near strong below normal temperatures are in control of the E. Midwest and the Northeast. A less amplified pattern would entail less strong anomalies for both the West and East.

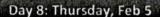
#### Day 7: Wednesday, Feb 4

**Previous** Forecast:



**Forecast** Confidence: 7/10





**Previous** Forecast:



**Forecast** Confidence: 7/10



#### Day 9: Friday, Feb 6

**Previous** Forecast:



**Forecast** Confidence: 7/10



#### Day 10: Saturday, Feb 7

**Previous** Forecast:



**Forecast** Confidence: 6/10



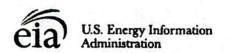
-8

0°F



3 A +5 A +8 MA+15 SA

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#### Weekly Natural Gas Storage Report

for week ending January 23, 2015 | Released: January 29, 2015 at 10:30 a.m. | Next Release: February 5, 2015

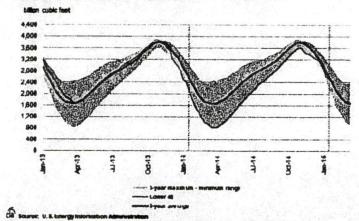
#### Working gas in underground storage, lower 48 states Summary text CSV JSN

						Historical C	ompariso	19	
		billion	Stocks cubic feet (Bcf)			par ago 1/23/14)	5-Year average (2010-2014)		
Region	01/23/15	01/16/15	net change	Implied flow	(Bef)	% change	(Bcf)	% change	
East	1,281	1,350	-89	-69	1,081	18.5	1,321	-3.0	
West	375	384	-9	-9	330	13.6	371	1.1	
Producing	887	903	-18	-18	808	9.8	930	-4.6	
Salt	257	260	-3	-3	183	40.4	188	38.7	
Nonsalt	630	643	-13	-13	625	0.8	741	-15.0	
Total	2.543	2.637	-04	-04	2 210	14.8	2 822	-10	

#### Summary

Working gas in storage was 2,543 Bcf as of Friday, January 23, 2015, according to EIA estimates. This represents a net decline of 94 Bcf from the previous week. Stocks were 324 Bcf higher than last year at this time and 79 Bcf below the 6-year average of 2,622 Bcf. In the East Region, stocks were 40 Bcf below the 5-year average following net withdrawals of 69 Bcf. Stocks in the Producing Region were 43 Bcf below the 5-year average of 930 Bcf after a net withdrawal of 18 Bcf. Stocks in the Weat Region were 4 Bcf above the 5-year average after a net drawdown of 9 Bcf. At 2,543 Bcf, total working gas is within the 5-year historical range.

#### Working gas in underground storage compared with the 5-year much un and minimum



Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2010 through 2014.

Source: Form EIA-912, "Weekly Underground Natural Gas Storage Report." The dashed vertical lines indicate current and year-ago weekly periods.

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# PIRA North American Gas Price Overview Per MMBTU December 19, 2014 Release



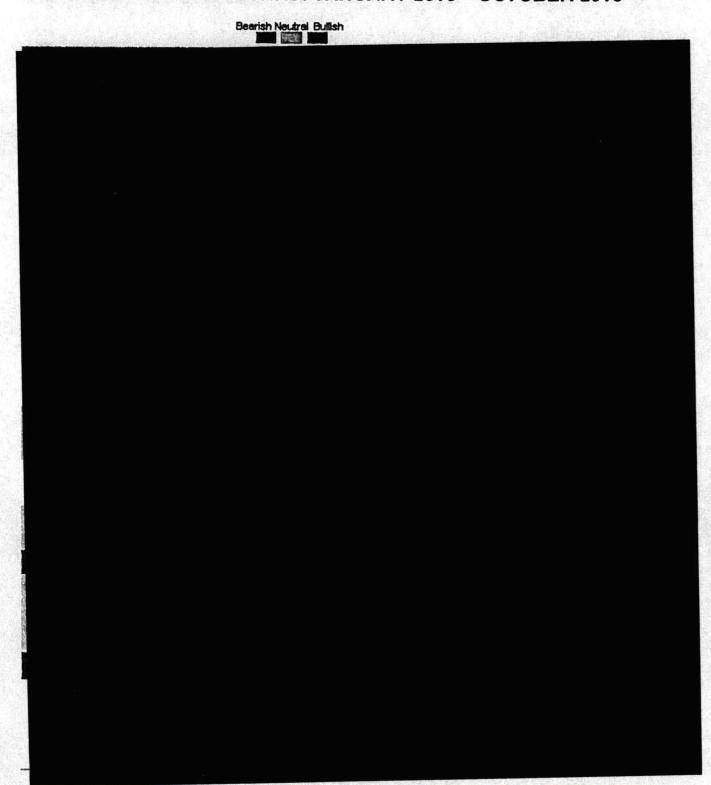
Vinter 2012- 2013	\$	Winter 2013- 2014	\$ Winter 2014- 2015	\$		
Summer 2012	\$	Summer 2013	\$ Summer 2014	\$	Summer 2015	\$
Average 2012	\$	Average 2013	\$ Average 2014	\$	Average 2015	\$
Dec-12		Dec-13	Dec-14		Dec-15	
Nov-12		Nov-13	Nov-14		Nov-15	
Oct-12		Oct-13	Oct-14		Oct-15	
Sep-12		Sep-13	Sep-14		Sep-15	
Aug-12	12.5	Aug-13	Aug-14		Aug-15	
Jul-12		Jul-13	Jul-14		Jul-15	
Jun-12	1, -11	Jun-13	Jun-14		Jun-15	
May-12		May-13	May-14		May-15	
Apr-12		Apr-13	Apr-14	17. N	Apr-15	
Mar-12		Mar-13	Mar-14		Mar-15	
Feb-12		Feb-13	Feb-14		Feb-15	
Jan-12		Jan-13	Jan-14	14.5	Jan-15	

North American Gas Forecast Monthly

December 19, 2014

NATURAL GAS

# U.S. GAS PRICE SCORECARD: JANUARY 2015 - OCTOBER 2015



## **Pricing Predictions**



# US EIA Forecasts Increasing Natural Gas Prices, Supplies in First Outlook for 2016—January 14, 2015

EIA has released their first 2016 forecast, gas prices at Henry Hub are expected to average \$3.86/MMBtu.

"The outlook is higher than the agency's 2015 natural gas price call of \$3.44/MMBtu, but lower than the average Henry Hub spot price of \$4.39/MMBtu in 2014." EIA cut its price estimate for the first quarter by 72 cents to \$3.23/MMBtu, and reduced its second quarter outlook by 33 cents to \$3.30/MMBtu. According to EIA the drop in near-term projections is due to warm December weather and production increases.

# 2015 To See Lower Gas Prices and Regulatory Shifts: ICF--January 12, 2015

ICF expects a slight seasonal rise in natural gas prices, followed by lower prices throughout the rest of 2015. Mild December weather and production growth that continues to outpace demand have kept prices low.

"Over the long term, sustained lower oil prices could have impacts on both gas production and gas market growth, as weaker oil prices will slow growth in US shale oil plays, which also produce large volumes of natural gas."

### **LNG Exports**

### LNG Export Bill Author Sees No Veto Threat—January 28, 2015

Legislation meant to put a clock on DOE's consideration of applications to export LNG is needed to ensure timely action on projects that require companies to make multi-million dollar investments ahead of regulatory approvals. The legislation would require a final decision from DOE on a LNG export application within 30 days of FERC's completion of an environmental review of a proposed terminal.

DOE has been criticized for having issued 5 final decisions on the 37 applications submitted since 2010 to export to countries that do not have a free trade agreement with the US.

The cost of filing a DOE export permit application is around \$20,000, while applying for a FERC license to construct and operate an LNG export terminal may cost upwards of \$100 million.

"Not everybody has the wherewithal of a Cheniere or some of the other big companies to put that money up front and wait indefinitely for the Department of Energy to move. What we're talking about with this legislation is bringing some business certainty so that these companies that are ready to start constructing LNG terminals can have some certainty that if they put that investment forward, they're going to have a reasonable response from DOE in order to move the ball forward."

## US LNG Less Vulnerable Than Competitors—January 26, 2015

The US developers of projects to export LNG are in a more competitive position when compared to competition in other gas-producing nations, even as the US LNG industry faces significant hurdles as a result of the drop in oil prices.

"Industry observers said that those projects designed to export LNG from US shores that are furthest along in the regulatory approval process are likely to be completed, regardless of the current oil price scenario. Other projects that are not as far along in the process will face greater impediments toward their ultimate completion."

"To date, only a handful of US-based LNG projects have reached final investment decision phase of development, and only two – Cheniere Energy's Sabine Pas terminal in Louisiana, and Freeport LNG's liquefaction and export facility in Texas – have broken ground."

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According to Bentek, overseas competitors to the US require global oil prices to be above \$60 per barrel, whereas US LNG exporters can be profitable under any oil price scenario. Because sales of LNG from US-based terminals are indexed to natural gas, rather that oil price and because the projects' capacity is often fully subscribed under take-or-pay contracts—the commodity price risk is fully transferred to the buyers.

Ernst & Young has indicated that LNG developers, especially those that have not reached the final investment decision (FID) phase are likely to "hit the pause button" on those projects. "It's too early at this stage to say you're going to cancel a lot of projects but like everybody else that's looking at big capital projects that aren't at FID at this point, they're certainly looking at a pause."

# **Miscellaneous Information**

## Oil Rigs Plunge, Gas-Directed Rigs Rise Modestly-January 26, 2015

Baker Hughes reported the number of oil and gas rigs dropped 43 to 1,633 for the week ended January 23<sup>rd</sup>. The rig count has fallen for seven consecutive weeks now and is currently at its lowest level since August 2010. Oil rigs dropped by 49 and gas rigs rose by 6 compared to the previous week.

"Drillers have idled an unprecedented 258 oil rigs over the past seven weeks in response to the sharp decline in oil prices as dozens of upstream companies have announced substantial cuts to their 2015 capital spending programs."

Wood Mackenzie has projected a 40% decline in North American drilling and completion spending from \$140 billion in 2014 to an estimated \$90 billion this year.

## Power Burn to Lead Gas Demand Growth in 2015—January 9, 2015

According to the American Petroleum Institute, power generation is expected to be the biggest driver for US gas demand in the coming year.

"The biggest trend is probably what we've seen in previous years and that's more natural gas in power generation, as we see more coal plants shut down, primarily for environmental regulations. You may see some increases in industry use as the economy improves and perhaps some commercial (demand) but I think electric power is going to be the biggest growth."

# Energy Information Administration Henry Hub Pricing January 13, 2015 Release Per MMbtu

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Summer 2013	Average 2013	Dec-13	Nov-13	Oct-13	Sep-13	Aug-13	Jul-13	Jun-13	May-13	Apr-13	Mar-13	Feb-13	Jan-13
\$ 3.770	\$ 3.728	4.24	3.64	3.68	3.62	3.43	3.62	3.83	4.04	4.17	3.81	3.33	3.33
Summer 2014	Average 2014 \$	Dec-14	Nov-14	Oct-14	Sep-14	Aug-14	Jul-14	Jun-14	May-14	Apr-14	Mar-14	Feb-14	Jan-14
\$ 4.213	\$ 4.392	3.48	4.12	3.78	3.92	3.91	4.05	4.59	4.58	4.66	4.90	6.00	4.71
Summer 2015	Average 2015	Dec-15	Nov-15	Oct-15	Sep-15	Aug-15	Jul-15	Jun-15	May-15	Apr-15	Mar-15	Feb-15	Jan-15
10	10	+			_								

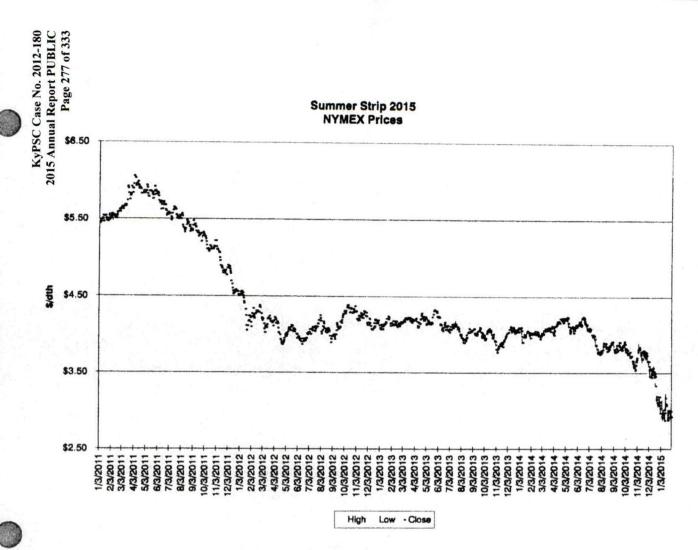
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Summer 2015	Average 2015	Dec-15	Nov-15	Oct-15	Sep-15	Aug-15	Jul-15	Jun-15	May-15	Apr-15	Mar-15	Feb-15	Jan-15
\$ 3.430	\$ 3.443	3.87	3.73	3.67	3.53	3.54	3.38	3.34	3.25	3.30	3.23	3.25	3.22

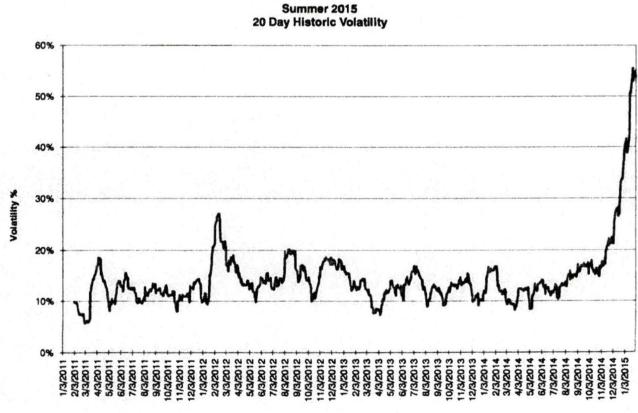
Summer 2016	Average 2016	Dec-16	Nov-16	Oct-16	Sep-16	Aug-16	Jul-16	Jun-16	May-16	Apr-16	Mar-16	Feb-16	Jan-16
\$ 3.800	\$ 3.862	4.06	4.04	3.99	3.95	3.91	3.87	3.62		3.63		3.90	

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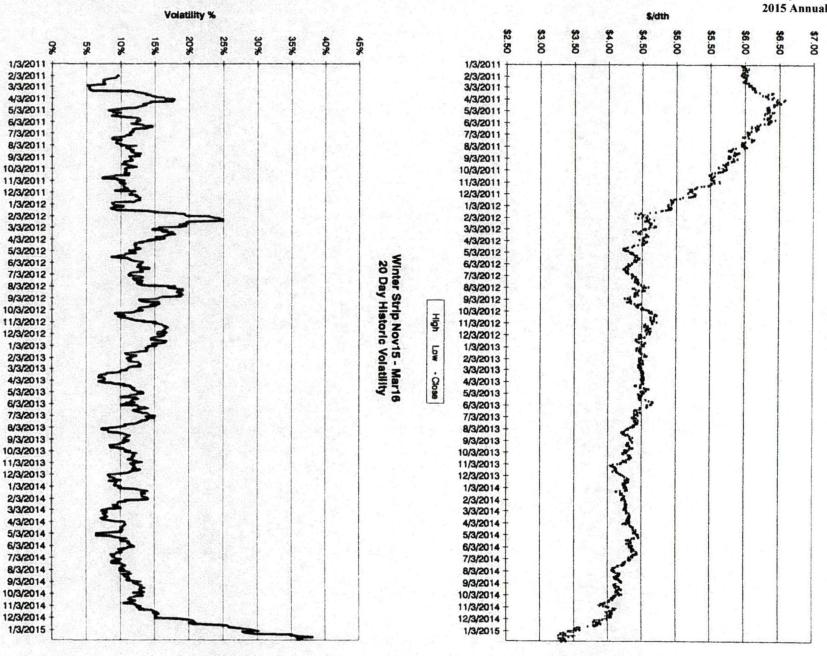
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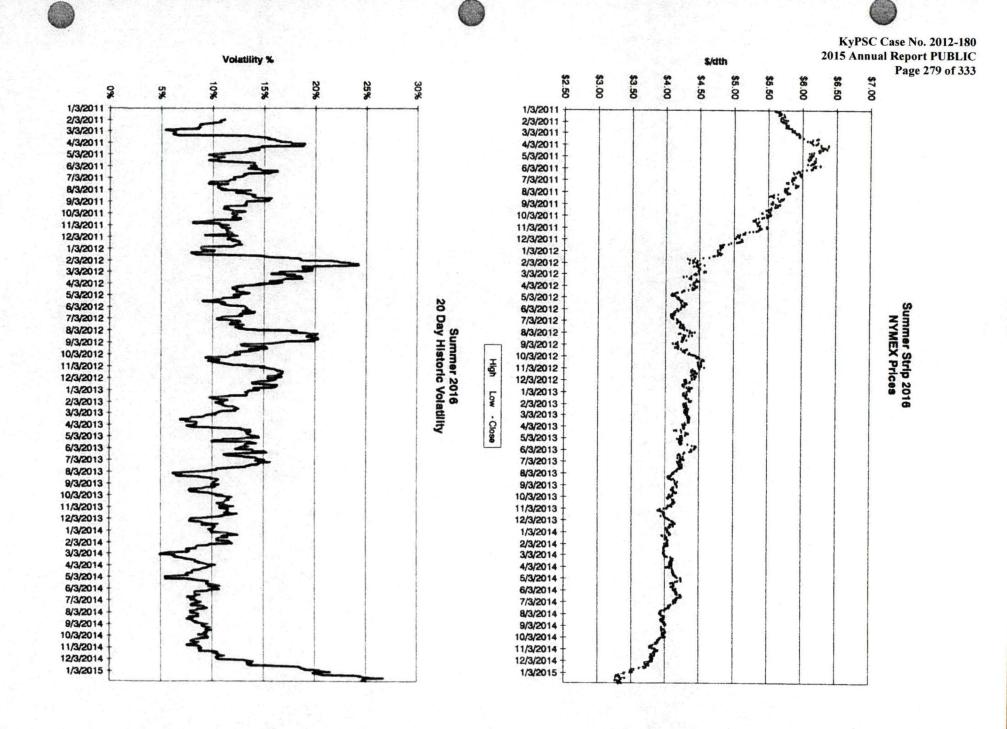
2016	Winter 2015-
·	n
5.040	2 0/10



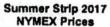


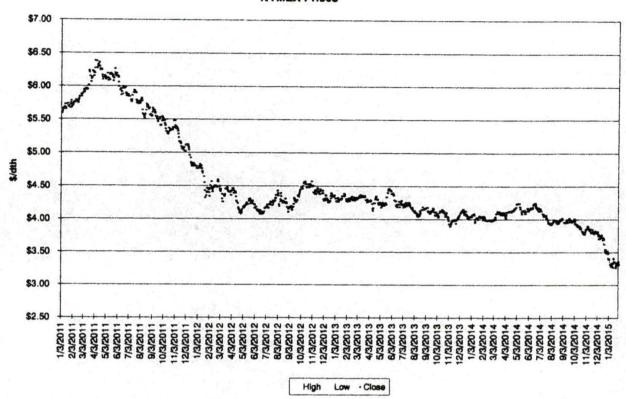




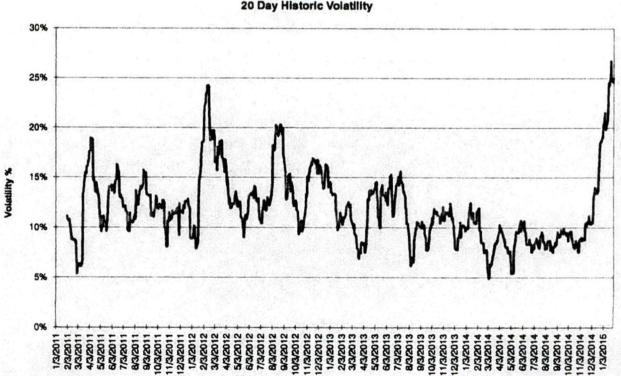


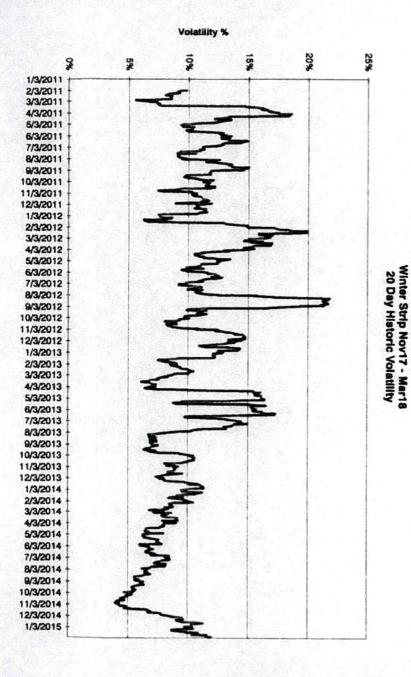
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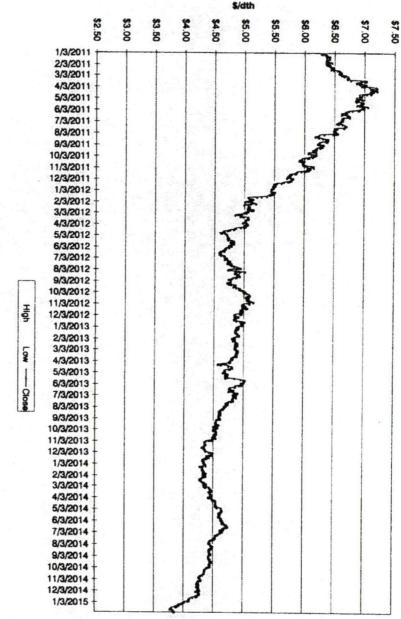














Independent Statistics & Analysis

## U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

#### **Natural Gas**

U.S. Natural Gas Consumption.

ElA projects that U.S. total natural gas consumption will increase to an average of 73.8 Bcf/d in 2015 and 74.8 Bcf/d in 2016, compared with an estimated 73.6 Bcf/d in 2014. Growth is largely driven by the industrial and electric power sectors, while residential and commercial consumption is projected to decline in 2015, then remain flat in 2016. Natural gas consumption in the power sector is expected to average 23.0 Bcf/d in 2015, a 3.2% increase compared with 2014, and it is expected to grow by 1.8% to 23.4 Bcf/d in 2016. Industrial sector consumption increases by 4.5% and 2.1% in 2015 and 2016, respectively, as new industrial projects come online, particularly in the fertilizer and chemicals sectors.

#### U.S. Natural Gas Production and Trade.

EIA expects that growth in marketed natural gas production will continue through 2015 and 2016. This increase is the result of continuing strong growth in the Lower 48 states, which more than offsets the long-term trend of declining production in the Gulf of Mexico. As of October, the most recent month for which EIA data are available, dry natural gas production was 4.6 Bcf/d greater than it was in October 2013. Although natural gas prices have declined, and this month's STEO lowers the Henry Hub spot price forecast, EIA expects that increases in drilling efficiency and growth in oil production (although at a slower rate) will continue to support growing natural gas production in the coming years. Additionally, with most growth coming from the Marcellus Shale, a backlog of drilled but uncompleted wells will continue to support production growth as new pipeline infrastructure comes online in the Northeast.

Growing domestic natural gas production is expected to reduce demand for imports from Canada and spur exports to Mexico. EIA expects exports to Mexico, particularly from the Eagle Ford Shale in South Texas, to increase because of growing demand from Mexico's electric power sector coupled with flat Mexican natural gas production.

#### Natural Gas inventories.

Natural gas working inventories totaled 3,089 Bcf as of January 2, which is 250 Bcf greater than at the same time in 2014 and 67 Bcf lower than the previous five-year (2010-14) average. Following last year's extremely cold winter, inventories fell 1,000 Bcf below the five-year average in mid-April. After a strong injection season, inventories were 237 Bcf below the five-year average on November 7. EIA projects that

end-of-March 2015 inventories will total 1,665 Bcf, which is 9 Bcf greater than the five-year (2010-14) average.



#### Crude Oil Prices

North Sea Brent crude oil spot prices averaged \$62/bbl in December, the lowest monthly average Brent price since May 2009, down \$17/bbl from the November average. The combination of robust world crude oil supply growth and weak global demand has contributed to rising global inventories and falling crude oil prices.

EIA expects global oil inventories to continue to build in 2015, keeping downward pressure on oil prices. The forecast Brent crude oil price averages \$58/bbl in 2015, \$11/bbl lower than projected in last month's STEO. Based on current market balances, EIA expects downward price pressures to be concentrated in the first half of 2015 when global inventory builds are expected to be particularly strong. EIA projects that Brent prices will reach a 2015 monthly average low of \$49/bbl in January and February, and then increase through the remainder of the year to average \$67/bbl during the fourth quarter.

The monthly average WTI crude oil spot price fell from an average of \$76/bbl in November to \$59/bbl in December. Like Brent crude oil prices, WTI prices have decreased considerably, with monthly average prices falling by more than 44% as of December after reaching their 2014 peak of \$106/bbl in June. EIA now expects WTI crude oil prices to average \$55/bbl in 2015, \$8/bbl lower than in last month's STEO, and \$71/bbl in 2016. The discount of WTI to Brent crude oil is forecast to widen slightly from current levels later in the forecast, averaging \$3/bbl in 2015 and \$4/bbl in 2016.

#### **Duke Energy Hedging Program** Remaining Base Not Yet Locked In Winter 2014-15

**Duke Energy Ohio** 

Previously Hedged Col Gulf Mainline Tex Gas Zone 1

Tex Gas Zone 1

Total System Supply

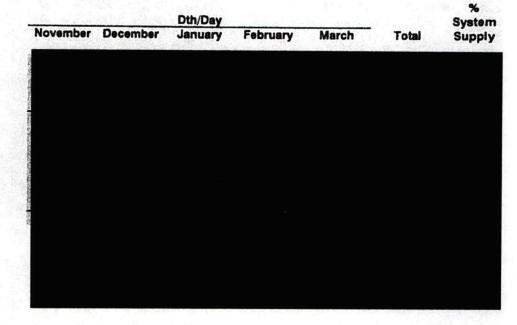
**Duke Energy Kentucky** Previously Hedged

Col Gulf Mainline Col Gulf Mainline

System Supply

**Duke Energy-Total Previously Hedged** 

Total



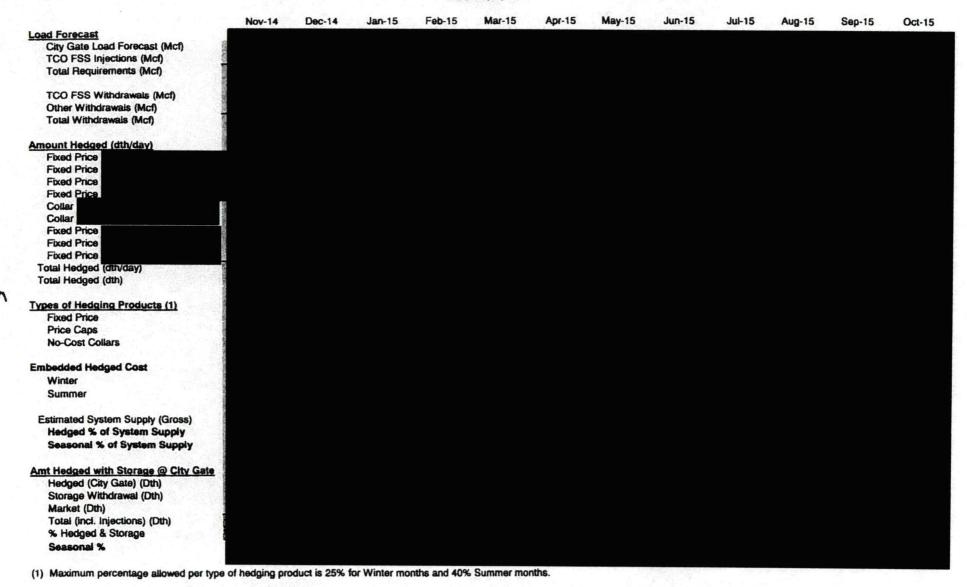


#### Gas Resources Hedging Program Market Indicators Summary February 26, 2015

	Price Pressure	Term	Comments	Page Ref
Weather		_		
Long Term Forecast (Jun 15-Aug 15)	<b>←→</b>	Long	NOAA predicting above average temperatures for June 2015August 2015 from the west coast to the Rockies and the east coast states. Remainder of CONUS equal chance of above, normal, or below.	
Mid Term Forecast (30-60 days)	1	Long	March is predicted to be 11.3% colder than normal based on 10 year normals and April weather is predicted to be 6.4% colder than normal.	14
Short Term Forecast (6-10 days)	1	Short	Above normal temperatures early in the period for Gulf coast states.  Below normal temperatures covers most of remaining CONUS with strong below temperatures in the mid-continent.	15
Storage Inventory	Harrier II	7,7 79		
EIA Weekly Storage Report	-	Long	Storage withdrawals for the week ending February 20th were 219 Bcf. Storage levels are at 1.938 TCF which is 42.3% higher than last year and 1.5% lower than the 5 year average. Working gas in storage recently surpassed five-year average levels for the first time in over a year. However, large expected withdrawals through March 6th will shift storage inventory levels back into a deficit situation.	16
ndustry Publications				AVEL:
Gas DailyGas Price Predictions	↑ ↓	Long	As supply growth moderates, prices should rise to an average of \$3.50 in 2015 and \$4.25/MMBtu in 2016 according to Jefferies. Associated gas production rose from 2010 to 2014 at an annual rate of 1.3 Bcf/d. Reduction in drilling activity should cause associated gas production to be reduced by .5 Bcf/d. Bentek lowers Henry Hub forecast for the Summer to average \$2.45/ MMBtu due to oversupply resulting from production growth.	17
Gas DailyLNG Exports	1	Long	Cheniere's LNG construction of the first four trains are ahead of schedule. Trains 1 & 2 are 81% complete and trains 3 & 4 are 54% complete. Train 1 is expected to start up in late 2015 with Train 3	
Gas DailyMiscellaneous	<b>+</b>	Long	Natural gas production in 2015 will not be significantly impacted by the recent plunge in oil prices. As long as Marcellus and Utica production continues at steady rates through 2018, natural gas production will continue to increase regardless of associated gas production growth. A Wood Mackenzie study indicates that associated gas volumes will continue to grow despite the downturn in oil prices. Associated gas volumes are expected to level off in 2015-16 at 10.6 Bcf/d before resuming growth over the medium and long-term.	19
Sovernment Agencles		-1-07		Y'A
Energy Information Administration Winter 2015/16: Summer 2015:	1	Long	The projected Henry Hub natural gas spot price averages \$3.054/MMBtu for 2015 and \$3.467/MMBtu for 2016.	20
echnical Analysis				-3-
Summer 2015 Strip Chart	1	Short	Closed at \$2.97	21
Winter 2015-16 Strip Chart	1	Short	Closed at \$3.26	22
Summer 2016 Strip Chart	++		Closed at \$3.17	23
Winter 2016-17 Strip Chart			Closed at \$3.51	24
Summer 2017 Strip Chart	-		Closed at \$3.41	25
Winter 2017-18 Strip Chart	-	Short	Closed at \$3.73	26
conomy		58.500	1	TENER
Demand	1	Long	EIA projects total natural gas consumption will average 74.3 Bcf/d in 2015 and 75.2 Bcf/d in 2016 an increase of 1.3% and 2.6% respectively from 2014. Growth is largely driven by the industrial and electric power sectors, while residential and commercial consumption is projected to decline in 2015 and 2016.	
Supply	+	Long	Growth in marketed gas production will increase by 2.9 Bcf/d (3.8%) and 1.7Bcf/d (2.2%) in 2015 and 2016, respectively.	27
Oil Market	1	Long	Brent crude oil spot prices averaged \$48/bbl in January, a decrease of \$15/bbl from December. EIA expects Brent prices to average \$58/bbl in 2015, unchanged from last month's report. EIA expects WTi prices to average \$55/bbl in 2015 and \$71/bbl in 2016.	28

# Meeting Minutes: 410 Main Conference Room - 2:00 pm Attendees: Jeff Kern, Chuck Whitlock, Mitch Martin, Steve Niederbaumer Discussed market fundementals including weather, storage, consumption, supply, winter and summer strip charts, DEK's hedging program as well as analyst forecasts for future price movements. Discussion focused on the level of storage, last weeks' report indicated that gas in storage surpassed five-year average levels for the first time in over a year, however, large expected withdrawals through March 6th will shift storage inventory levels back into a deflicit situation. In addition, discussed the deals that Duke Kentucky entered into since the last Hedging meeting. Called four suppliers to provide thi/d for DEK for the period 4/1/2015--3/31/2016 at Columbia Gulf Mainline. The suppliers were asked to provide a Floor for a Costless Collar with a provided Ceiling of The suppliers and their bids were: And Floor was the lowest and it was accepted. In addition, contacted three suppliers to provide DEK with Dth/d for the period 4/1/2015--3/31/2017 at Columbia Gulf Mainline. The suppliers and their bids were: Did of was the lowest and it was accepted. Based on these factors a decision was made not to hedge additional volumes at this time.

#### Duke Energy Kentucky Hedging Program - Current Position November 2014 - October 2015 As of 02/25/15



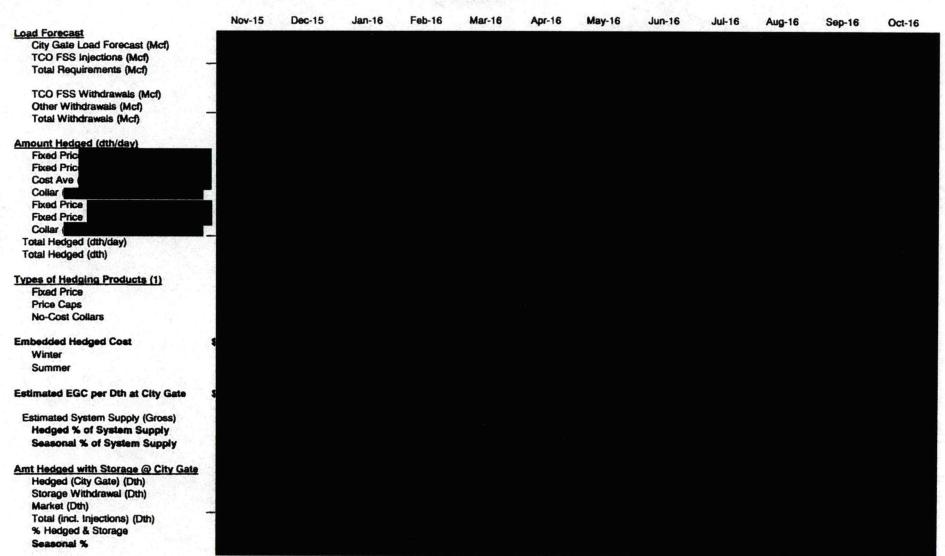




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#### **Duke Energy Kentucky Hedging Program - Current Position** November 2015 - October 2016 As of 02/25/15



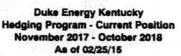
<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

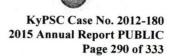
#### Duke Energy Kentucky Hedging Program - Current Position November 2016 - October 2017 As of 02/25/15

Feb-17 Mar-17 Nov-16 Dec-16 Jan-17 Apr-17 May-17 Jun-17 Jul-17 Aug-17 Sep-17 Oct-17 Load Forecast City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawais (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Cost Ave Fixed Price Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.







Nov-17 Dec-17 Jan-18 Feb-18 Mar-18 Apr-18 May-18 Jun-18 Jul-18 Aug-18 Sep-18 Oct-18 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) **Total Requirements (Mcf)** TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps **No-Cost Collars Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

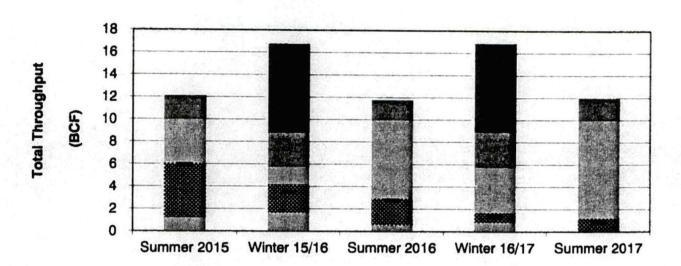
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#### Duke Energy Kentucky Hedging Program Current Position

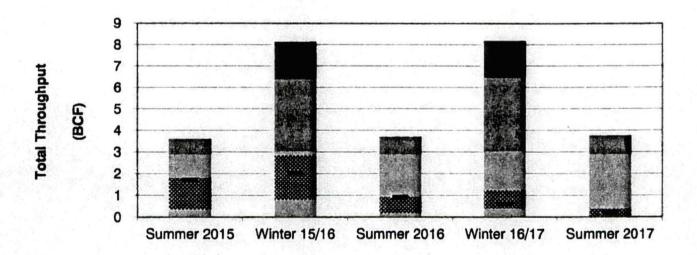
Delivery	System	Hedged to Date Total		Next Targ	et (3/31/15)
Month	Supply Dth/mo	Dth/day	Otal Oth/mo	Required	Allowed
	Davino	Duitay	Duymo	dth/day	dth/day
				A18.74	1,000
Apr-15					
May-15					
Jun-15					
Jul-15					
Aug-15					
Sep-15					
Oct-15 _					
Summer 2015					
Target Levels By March 31	, 2015				
Nov-15					
Dec-15					
Jan-16					
Feb-16					
Mar-16					
Winter 15/16					
Storage Gas					
Excluding Storage Gas					
Including Storage Gas					
Target Levels By October 3	31, 2015		FC 58		
A 10	Seat Silvery	4.00	and Comment		
Apr-16					
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Aug-16					
Sep-16					
Oct-16_ Summer 2016					
Target Levels By March 31	2015				
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Target Levels By October 3	11, 2015				
Apr-17					
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Jul-17					
Aug-17					
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Summer 2017					
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Nov-17					
Dec-17					
Jan-18					
Feb-18					
Mar-18					
Winter 17/18					
Target Levels By October 3	1, 2015		W 53		

#### Hedging Strategy Current Position - February 25, 2015

#### **Duke Energy Ohio**



#### **Duke Energy Kentucky**

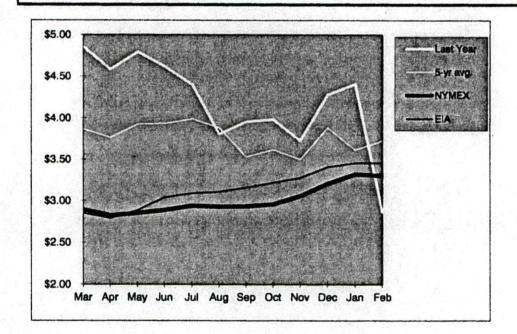


■ Target ■ Base ■ Swing ■ Storage - Hedged

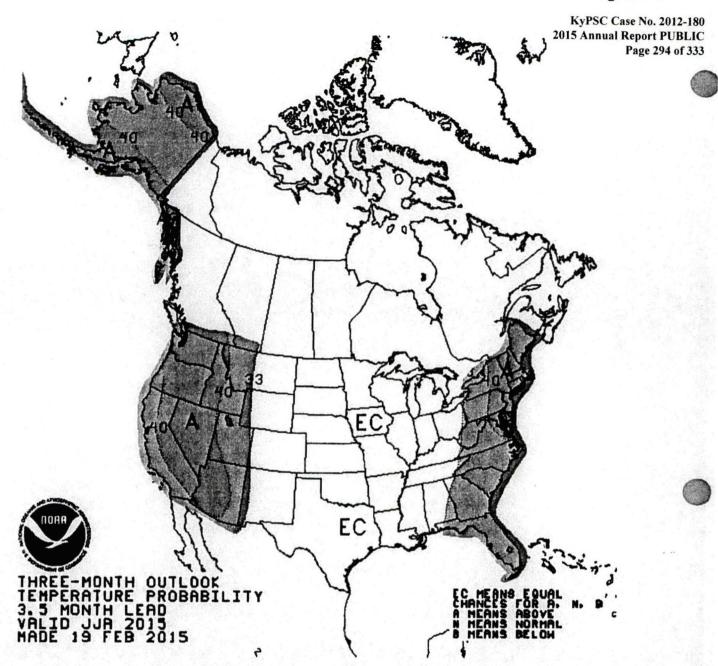
# COMPARISON OF HISTORIC SPOT & PROJECTED PRICES KyPSC Case No. 2012-180 TO CURRENT FUTURES PRICES KyPSC Case No. 2012-180 2015 Annual Report PUBLIC Page 293 of 333

		Prices: osing Price		
	5-yr. avg.	Last Year	EIA	NYMEX
	(10/11-14/15)	(2014-2015)	10-Feb-15	26-Feb-15
Mar	\$3.87	\$4.86	\$2.850	\$2.894
Apr	\$3.77	\$4.58	\$2.790	\$2.822
May	\$3.93	\$4.80	\$2.890	\$2.854
Jun	\$3.94	\$4.62	\$3.040	\$2.891
Jul	\$3.99	\$4.40	\$3.090	\$2.941
Aug	\$3.88	\$3.81	\$3.110	\$2.929
Sep	\$3.53	\$3.96	\$3.160	\$2.934
Oct	\$3.62	\$3.98	\$3.220	\$2.960
Nov	\$3.50	\$3.73	\$3.280	\$3.058
Dec	\$3.89	\$4.28	\$3.410	\$3.210
Jan	\$3.62	\$4.41	\$3.460	\$3.323
Feb	\$3.73	\$2.87	\$3.460	\$3.303
2 Month Avg	\$3.77	\$4.19	\$3.147	\$3.010
	r Average		\$3.043	\$2.904
Winter A	verage		\$3.292	\$3.158

	Ohio	d Prices Kentucky		
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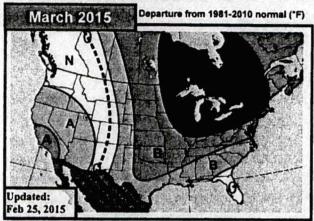
#### EarthSat 30-60 Day Outlook

Wednesday, February 25, 2015

Meteorologists; BJ/JS



WEATHER SERVICES

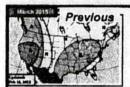


Departure from 1981-2010 normal (°F) April 2015 Feb 25, 2015

+3.0 to +4.9 +2.0 to +2.9 +1.0 to +1.9

-1.0 to -1.9 -2.0 to -2.9 -3.0 to -4.9 -5.0

\_\_\_\_-0.9 to 0.9



Major Cold Changes to the Central to Eastern US

Strong Early Cold in Midwest, Northeast

Large changes in the colder direction have been made to the forecast this week, with much more expansive below normal anomalies covering the central to eastern portions of the Continent. The greatest colder trends can be seen throughout the Midwest, Northeast, Mid-Atlantic, and east-central Canada, where the forecast has trended a couple degrees colder due to intense cold favored for the first third of the month. A major upward adjustment to the month's GWHDD forecast has been made in response to the increased cold, with a large percentage of the demand coming during the intense cold threatening the first third of the month. The swath of above normal anomalies in the western US has shrunk since last week as well, and there is risk that the strong early month cold could continue to expand westward.

Mar GWHDD\*\* Forecasts \*10Y Normal '05-14 10Y Normal\* 685 30Y Normal Mar 2015 Fcst: 631.2 Mar-2014 720.1

Change: +45

enough trajectory that brought much colder than normal conditions deep into the Midwest. Mid-Atlantic and Southeast



Slight Colder Tweaks Made to the Midwest

Texas and South-Central US **Keep Coldest Anomalies** 

April sees colder trends in the forecast as well, although they are not nearly as bold as that seen in March. Texas and the south-central US hold the greatest likelihood in falling below normal this month, but the Midwest and Interior East have now fallen to the negative side of normal. Both the latest CFS and ECMWF weekly outlooks keep above normal temperatures and ridging planted over the West Coast, which could keep the opportunity for cold to penetrate the remainder of the US and Canada. If March verifies as cold as predicted, ice cover could also keep the high population centers along the Great Lakes colder than what other signals would suggest, and this risk is part of the reason the forecast is colder in the Great Lakes region.

Apr GWHDD\*\* Forecasts

\*10Y Normal '05-14

Apr 2015 Fcst:

360

10Y Normal\* 30Y Normal 358.7 Apr-2014 346.3

Change: +10

"National Gas-Weighted HDDs



Final 60 Day Outlook Final 30 Day Outlook

Only couple more forecast days lie ahead for the month of February, which will end up as 3rd coldest dating back to 1950. The GWHDD total has increased by roughly 25 HDD's since last week's update, thanks to the progression of intense cold into the highly populated Midwest and Northeast during the past week. Our final 30-day outlook for the month was correct in having a colder than normal signal for the eastern half of the country, but it did not force the most intense cold on a southward.



#### EarthSat 6-10 Day Forecast—Detailed

Wednesday, February 25, 2015

Meteorologist: BJ/JS



#### Day 6: Tuesday, Mar 3

**Previous** Forecast:



**Forecast** Confidence: 8/10



#### Intense Cold Threatens Mid-Continent

#### Southeast/Gulf Coast Trend Warmer Early

Plenty of cold air continues to threaten the majority of the US and Canada during this time frame. A large Arctic air mass once again brings much and strong below normal cold southward into the Mid-Continent during the early half of the period before shifting the intense cold eastward toward the Atlantic in the ensuing days. While moderation is favored during the latter half of the period throughout the West, there is ample colder risk according to the models. The Southeast and Gulf Coast lean warmer today compared to yesterday, as above to much above normal anomalies form amidst a warm, moist Gulf flow which precedes the eventual arrival of the very cold air.

#### Day 7: Wednesday, Mar 4

**Previous** Forecast:



**Forecast** Confidence: 7/10



#### Day 8: Thursday, Mar 5

**Previous** Forecast:



**Forecast** Confidence: 6/10



#### Day 9: Friday, Mar 6

**Previous** 



**Forecast** Confidence: 6/10



#### Day 10: Saturday, Mar 7

**Previous** 



**Forecast** Confidence: 5/10



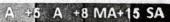




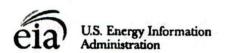








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#### Weekly Natural Gas Storage Report

for week ending February 20, 2016 | Released: February 26, 2015 at 10:30 a m | Next Release: March 5, 2015

#### Working gas in underground storage, lower 48 states

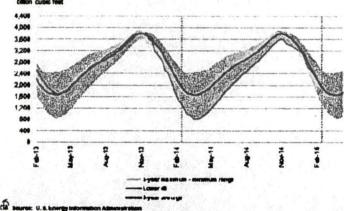
Summary text CSV JSN

						Historical C	omparisor	18
		billion	Stocks cubic feet (Bcf)			er ago 2/20/14)		r average 10-2014)
Region	02/20/16	02/13/15	net change	Implied flow	(Bcf)	% change	(Bcf)	% change
East	843	984	-141	-141	618	38.4	928	-9.2
West	371	375	-4	4	219	89.4	302	22.8
Producing	724	798	-74	-74	525	37.9	738	-1.9
Salt	181	222	-41	-41	93	94.8	137	32.1
Nonsalt	542	576	-34	-34	431	25.8	801	-9.8
Total	1,938	2,157	-219	-219	1,382	42.3	1,968	-1.5

#### Summary

Working gas in storage was 1,938 Bcf as of Friday, February 20, 2015, according to EIA estimates. This represents a net decline of 219 Bcf from the previous week. Stocks were 576 Bcf higher than last year at this time and 30 Bcf below the 5-year average of 1,968 Bcf. In the East Region, stocks were 85 Bcf below the 5-year average following net withdrawals of 141 Bcf. Stocks in the Producing Region were 14 Bcf below the 5-year average of 738 Bcf after a net withdrawal of 74 Bcf. Stocks in the Weat Region were 68 Bcf above the 5-year average after a net drawdown of 4 Bcf. At 1,938 Bcf, total working gas is within the 5-year historical range.

#### Working gas in underground a lorage compared with the 5-year maximum and minimum



iole: The shaded area indicates the range between the historical minimum and maximum values for the weekly series t

Source: Form EIA-912, "Weekly Underground Natural Gas Storage Report." The dashed vertical lines indicate current and year-ago weekly periods.

#### **Pricing Predictions**



# Jefferies Sees Higher Prices Amid Drop in Gas Rig Count—February 25, 2015

According to Jefferies, as the outlook for supply growth moderates, natural gas prices should rise to a 2015 average of \$3.50/MMBtu and \$4.25/MMBtu in 2016.

"While most recent attention has been paid to the fall in the US oil rig count, our estimate of the natural gas rig count plus net effective associated gas rigs has fallen by about 24% (about 150 rigs) since early November."

Though associated gas production from oil plays rose steadily from 2010 through 2014, at an annual rate of 1.3 Bcf/d, a reduction in drilling activity across 5 plays due to the plunge in oil prices should cause associated gas volumes to fall at an annual rate of .5 Bcf/d.

#### Henry Hub Summer Cash Prices to Fall Further—February 9, 2015

Bentek lowered its Henry Hub forecast for the summer to an average of \$2.45/MMBtu, reflecting an oversupplied market due to continued robust production growth.

"Bentek now expects Henry Hub prices to remain under significant pressure throughout 2015 and forecasts that cash prices will fall from \$2.72/MMBtu in February to as low as \$2.35/MMBtu in October."

"The strong production growth at the end of 2014 has put the entirety of 2015 in an oversupply situation, meaning that in order for the market to balance and keep storage inventories from exceeding design capacities, cash prices will need to remain suppressed for the entirety of the summer, barring any extreme weather events."

The lower cash prices will induce higher levels of coal-to-gas switching in the power generation sector. Bentek believes power burn demand in 2015 to exceed the levels during the summer of 2012, when cash prices were consistently below \$3.00/MMBtu.

#### **LNG Exports**

#### Sabine Pass LNG Export Project Ahead of Schedule—February 23, 2015

Cheniere has indicated that construction of the first four trains at Sabine Pass LNG facility are ahead of schedule.

Trains 1 and 2 are about 81% complete. Train 1 is expected to start up as early as late 2015. Trains 3 and 4 are about 54% complete. Train 3 is expected to be operating in late 2016 and train 4 in 2017.

Cheniere has long-term LNG sales-and-purchase contract for 747.2 Bcf/yr for volumes from the first four trains of Sabine Pass. Those trains have all the regulatory approvals needed for exports to countries with and without free trade agreements with the US.

#### **Miscellaneous Information**



#### Oil Plunge Seen Having Little Impact on Gas-February 18, 2015

According to Bentek, natural gas production in 2015 will not be significantly impacted by the recent plunge in oil prices. The rig count last week fell to its lowest level since 2011.

A significant reduction in drilling will be needed to slow associated gas production growth from major oil plays. "As long as Marcellus and Utica production continues growing at steady rates through 2018, natural gas production will continue to increase regardless of associated gas production growth. So-called associated gas — gas produced alongside crude oil from oil wells accounts for roughly 45% of total US gas production, Bentek data showed." Bentek expects gas production in 2015 to grow compared to 2014 average levels.

According to Baker Hughes, rigs drilling for oil and gas have declined for 10 consecutive weeks to 1,056

RBC Capital Markets states "Our model indicates that onshore dry gas production should continue to modestly increase (excluding weather or other major disruptions) over the foreseeable future due to growth from the Marcellus Shale along with associated gas from oil wells."

#### Oil Price Decline: Impact to Associated Gas-February 12, 2015

In a Wood Mackenzie study, associated gas volumes will continue to grow despite the downturn in oil prices. While growth expectations have been lowered in the near-term, US producers are likely to accelerate volume growth as prices strengthen.

Wood Mackenzie's Fall 2014 forecast of associated gas expected volumes to increase 1.4 Bcf/d in 2015 to 10.7 Bcf/d and 15.7 Bcf/d by 2020. However with oils rigs expected to decline by 40 to 50%, Wood Mackenzie has reduced their lost gas estimate by .22 Bcf/d by December 2014 and about 1 Bcf/d by December 2016. As a result, associated gas volumes are expected to plateau in 2015-16 at 10.6 Bcf/d before resuming growth over the medium and long-term.

# Energy Information Administration Henry Hub Pricing Per MMbtu February 10, 2015 Release

Jan-13	3.	33
Feb-13	3.	33
Mar-13	3.	81
Apr-13	4.	17
May-13	4.	04
Jun-13	3.	83
Jul-13	3.	62
Aug-13	3.	43
Sep-13	3.	62
Oct-13	3.	68
Nov-13	3.	64
Dec-13	4.	24
Average		-
2013	\$ 3.7	728
Summer	\$ 3.7	770
2013		

Summer 2014	\$ 4.213
Average 2014	\$ 4.392
Dec-14	 3.48
Nov-14	4.12
Oct-14	3.78
Sep-14	3.92
Aug-14	3.91
Jul-14	4.05
Jun-14	4.59
May-14	4.58
Apr-14	4.66
Mar-14	4.90
Feb-14	6.00
Jan-14	4.71

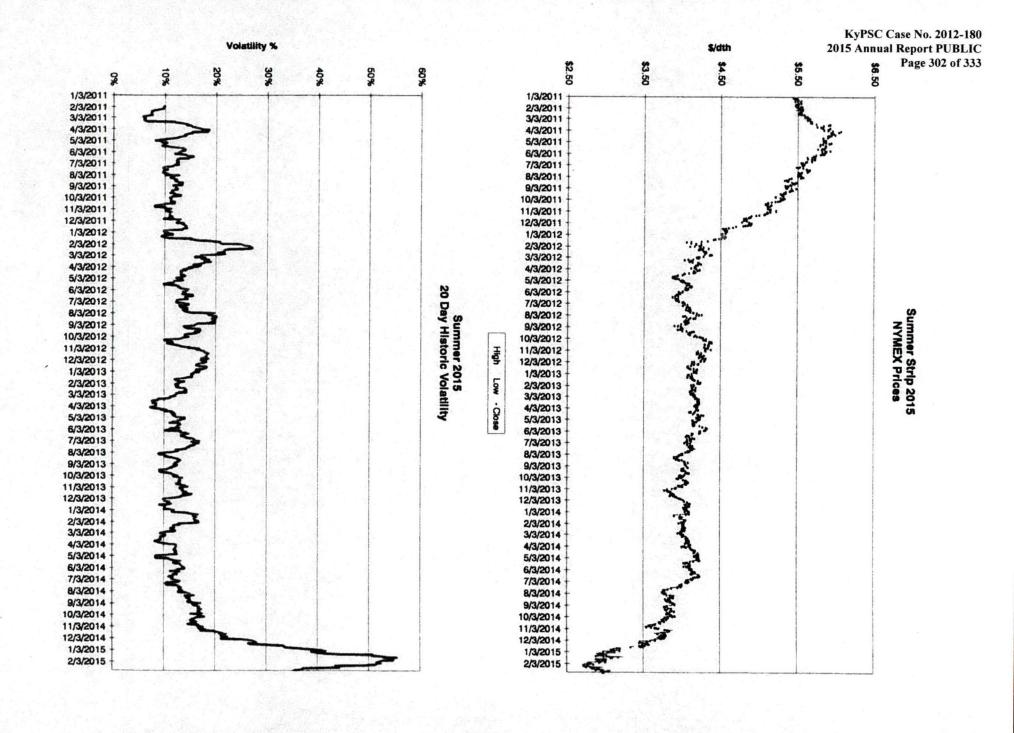
Jan-15	2.99
Feb-15	2.82
Mar-15	2.85
Apr-15	2.79
May-15	2.89
Jun-15	3.04
Jul-15	3.09
Aug-15	3.11
Sep-15	3.16
Oct-15	3.22
Nov-15	3.28
Dec-15	3.41
Average	
2015	\$ 3.054
Summer	£ 2.042
2015	\$ 3.043

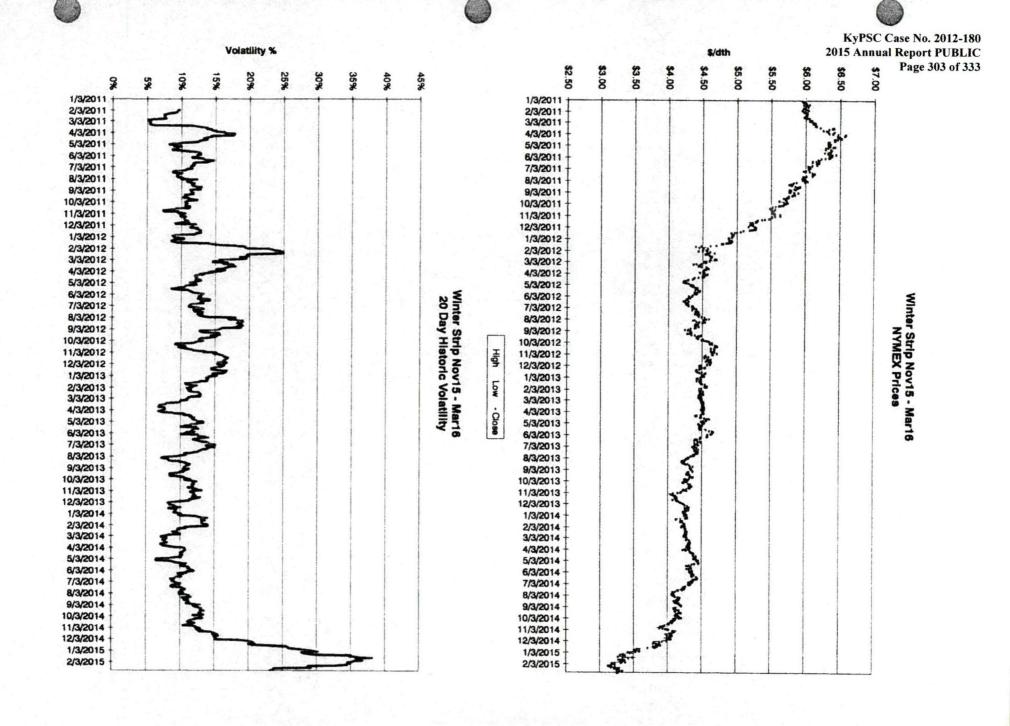
Jan-16	3.46
Feb-16	3.46
Mar-16	3.40
Apr-16	3.26
May-16	3.26
Jun-16	3.25
Jul-16	3.48
Aug-16	3.52
Sep-16	3.56
Oct-16	3.60
Nov-16	3.66
Dec-16	3.69
Average	
2016	\$ 3.467
Summer	\$ 3.419
2016	

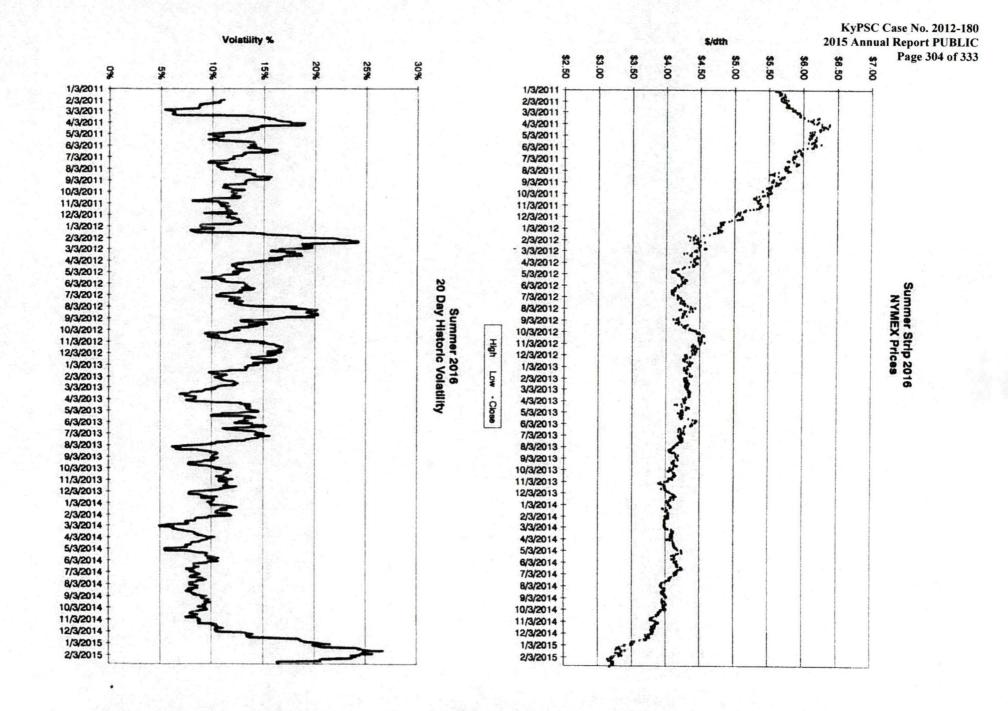
Winter 2013		
WHITE ZUIS	\$	4.698
2014	7	4.030
2017		

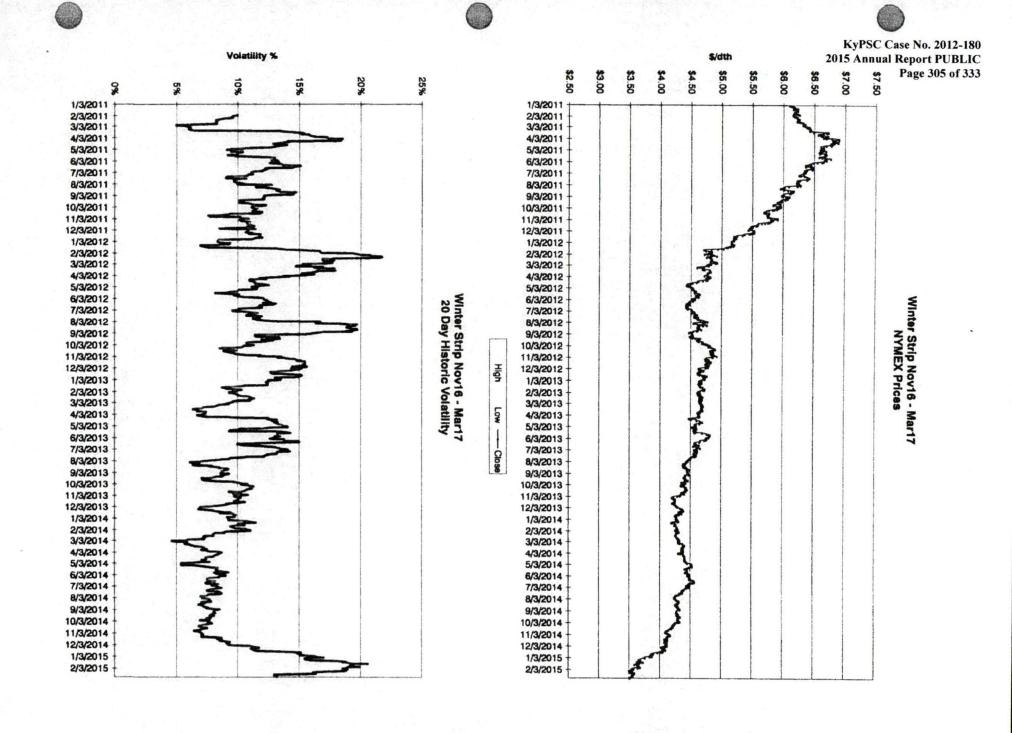
Winter 2014-	3 353
2015	\$ 3.252

Winter 2015-	2 402
2016	\$ 3.402

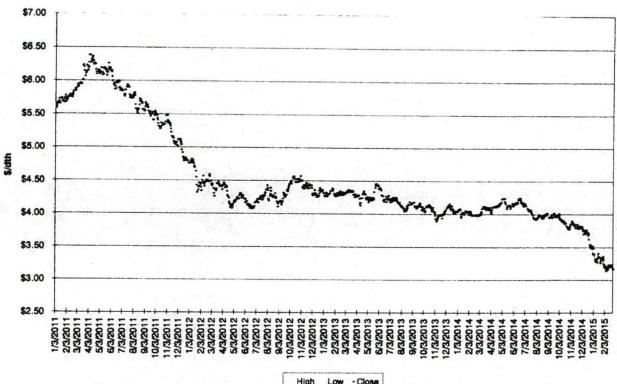




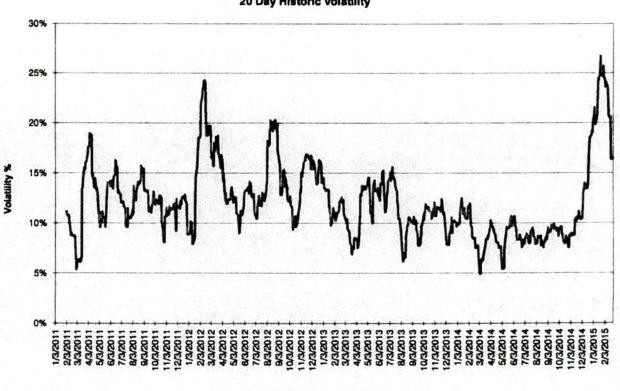








Summer 2017 20 Day Historic Volatility



\$2.50

1/3/2011 3/3/2011 3/3/2011 5/3/2011 6/3/2011 7/3/2011 1/3/2011 1/3/2012 4/3/2012 4/3/2012 6/3/2012 8/3/2012



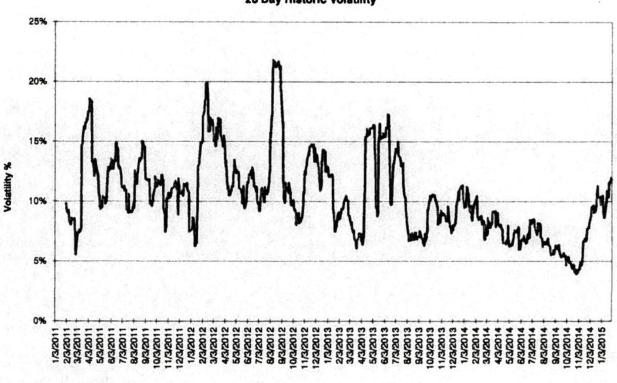
High

Low

- Close

1/3/2014 2/3/2014 3/3/2014 4/3/2014 5/3/2014

3/3/2014





Independent Statistics & Analysis

## U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

#### **Natural Gas**

U.S. Natural Gas Consumption.

EIA projects that U.S. total natural gas consumption will average 74.3 Bcf/d in 2015 and 75.2 Bcf/d in 2016, compared with an estimated 73.3 Bcf/d in 2014. Growth is largely driven by demand in the industrial and electric power sectors, while residential and commercial consumption is projected to decline in 2015 and 2016. Natural gas consumption in the power sector is expected to average 23.5 Bcf/d in 2015, a 0.5 Bcf/d increase from last month's STEO. EIA expects power sector consumption to grow by 2.6%, to 24.1 Bcf/d, in 2016. Industrial sector consumption increases by 5.6% and 1.9% in 2015 and 2016, respectively, as new industrial projects come online, particularly in the fertilizer and chemicals sectors, and industrial consumers are able to take advantage of low natural gas prices.

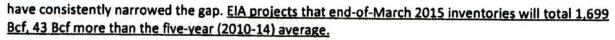
#### U.S. Natural Gas Production and Trade.

EIA expects that marketed natural gas production will increase by 2.9 Bcf/d (3.8%) and 1.7 Bcf/d (2.2%) in 2015 and 2016, respectively. This increase reflects continuing strong production in the Lower 48 states, which more than offsets the long-term declining production in the Gulf of Mexico. Although natural gas prices have fallen dramatically in recent months, EIA expects that increases in drilling efficiency and growth in oil production (albeit at a slower rate) will continue to support growing natural gas production in the forecast. Additionally, preliminary data indicate freeze-offs modestly reduced production in January, but production has quickly recovered and growth continues. With most growth expected to come from the Marcellus Shale, a backlog of drilled but uncompleted wells will continue to support production growth, as new pipelines come online in the Northeast.

Increases in domestic natural gas production are expected to contribute to lower demand for natural gas imports from Canada and increasing exports to Mexico. EIA expects exports to Mexico, particularly from the Eagle Ford Shale in South Texas, to increase because of growing demand from Mexico's electric power sector, coupled with flat Mexican natural gas production.

#### Natural Gas Inventories.

On January 30, natural gas working inventories totaled 2,428 Bcf, 468 Bcf (24%) above the level at the same time in 2014 and 29 Bcf (1%) below the previous five-year (2010-14) average. Following last year's extremely cold winter, inventories fell 1,000 Bcf below the five-year average in mid-April but since then



#### **Crude Oil Prices**

North Sea Brent crude oil spot prices averaged \$48/bbl in January, the lowest monthly average Brent price since March 2009, down \$15/bbl from the December average. The combination of robust world crude oil supply growth and weak global demand has contributed to rising global inventories and falling crude oil prices.

EIA expects global oil inventories to continue to build in 2015, limiting upward pressure on oil prices because of declining drilling activity. The forecast Brent crude oil price averages \$58/bbl in 2015, unchanged from last month's STEO. Based on current market balances, EIA expects prices to be relatively flat in the first half of 2015, when global inventory builds are projected to be significant. EIA projects that Brent prices will average \$67/bbl during the fourth quarter.

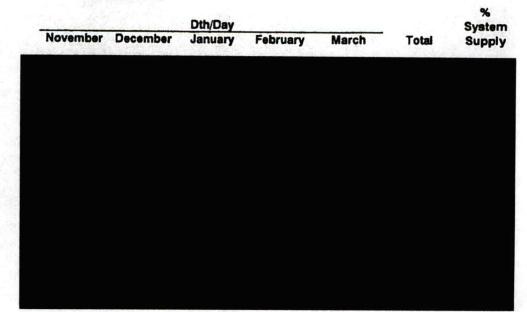
The monthly average WTI crude oil spot price fell from an average of \$59/bbl in December to \$47/bbl in January, its lowest level since February 2009. EIA expects the WTI crude oil price to average \$55/bbl in 2015 and \$71/bbl in 2016, both unchanged from last month's STEO. The discount of WTI to Brent crude oil averaged less than \$1/bbl in January, the narrowest monthly average price spread since August 2010. In the forecast, the discount of WTI to Brent is projected to average \$3/bbl in 2015 and \$4/bbl in 2016.

#### Duke Energy Hedging Program Remaining Base Not Yet Locked in Winter 2014-15



Duke Energy Ohio	
Previously Hedged	
	Col Gulf Mainline
	Tex Gas Zone 1 Tex Gas Zone 1
l'otal	1 0x Cas 2016 1
System Supply	
Ouke Energy Kentucky Previously Hedged	
	Col Gulf Mainline
12 1 12 1 13 1	Col Gulf Mainline
To <b>tal</b> Bystem Supply	
Ouke Energy-Total Previously Hedged	

Total



#### Gas Resources Hedging Program Market Indicators Summary March 25, 2015

	Price Pressure	Term	Comments	Page		
Weather						
Long Term Forecast (Jun 15Aug 15)	<b>†</b>	Long	NOAA predicting above average temperatures for June 2015August 2015 from the west coast to the Rockies and the east coast states. Remainder of CONUS equal chance of above, normal, or below.	13		
Mid Term Forecast (30-60 days)	-	Long	April is predicted to be 7.8% colder than normal based on 10 year normals and May weather is predicted to be 4.4% colder than normal.	14		
Short Term Forecast (6-10 days)	<b>+</b>	Short	Above normal temperatures west of the Mississippi during the period.  Below normal temperatures early in the period in the east turning to more normal temperatures later in the period.	15		
Storage Inventory			ALL PARTY DE LA CONTROL DE LA			
EIA Weekly Storage Report	Į.	Long	Storage withdrawals for the week ending March 13th were 45 Bcf. Storage levels are at 1.467 TCF which is 52.8% higher than last year and 13.3% lower than the 5 year average. Assuming average withdrawals between now and the end of March, inventories at the end of the withdrawal season will be over half a Tcf above 2014, putting downward pressure on prices going into the summer.	16		
Industry Publications	The Earth	ar njijak				
Gas DailyGas Price Predictions	<b>←→</b>	Long	Morningstar reduced their price estimate by 25% through 2020 to \$4.00/Mcf from \$5.40/Mcf based on continued production growth from Marcellus and associated gas. Gas production expected to grow 4% annually through 2020. Bentek's price forecast is more bearish than Morningstar. Bentek is predicting \$3.88/MMBtu through 2020, below \$3.00/MMBtu until Nov. 2016 and not to exceed \$4.00/MMBtu until Jan. 2018. Citl has indicated that gas prices may be at or near a bottom, citing gas prices near bottom of their 5-year range, short positioning of money managers, and storage levels are below the 5-year average level.			
Gas DailyMiscellaneous	† ļ	Long	Bentek has reported natural gas production is reaching 73.8 Bcf/d. Power burn has hit all time highs this past winter, February averaged 23.1 Bcf/d. As the EPA Mercury Air and Toxics rule is set to start this April, we should see close to 15.7 GW's of coal generation retire. Baker Hughes reported last week that there are 242 dry gas rigs online week ending March 20th 2015. We continue to see production increase despite the drop in rig count.	18		
Government Agencies			Journ.	-		
Energy Information Administration Winter 2015/16: \$3.402 Summer 2015: \$3.043	1	Long	The projected Henry Hub natural gas spot price averages \$3.054/MMBtu for 2015 and \$3.467/MMBtu for 2016.	19		
Technical Analysis						
Summer 2015 Strip Chart	1	Short	Closed at \$2.83	20		
Winter 2015-16 Strip Chart	1	Short	Closed at \$3.18	21		
Summer 2016 Strip Chart	1	Short		22		
Winter 2016-17 Strip Chart		Short	Closed at \$3.45	23		
Summer 2017 Strip Chart	į.	Short		24		
Winter 2017-18 Strip Chart	i i	Short	Closed at \$3.64	25		
Economy	- W. 12 (1988)					
Demand	•	Long	EIA projects total natural gas consumption will average 75.7 Bcf/d in 2015 and 76.2 Bcf/d in 2016 an increase of 3.0% and 3.7% respectively from 2014. Growth is largely driven by the industrial and electric power sectors, while residential and commercial consumption is projected to decline in 2015 and 2016.	26		
Supply	I I	Long	Growth in marketed gas production will increase by 3.7 Bcf/d (5.0%) and 1.6 Bcf/d (2.0%) in 2015 and 2016, respectively.	26		
Oil Market	1	Long	EIA expects Brent prices to average \$59/bbl in 2015, \$2/bbl higher from last month's report and \$75/bbl in 2016. EIA expects WTI prices to average \$52/bbl in 2015 and \$70/bbl in 2016.	27		

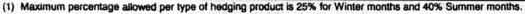
Meeting Minutes: 428 Conference Room - 8:00 am

Attendees: Jeff Kern, Chuck Whitlock, Mitch Martin, Joachim Fischesser, Ryan Conover, Steve Niederbaumer

Discussed market fundamentals including weather, storage inventory levels, EIA price forecasts, analysts price projections, economic influences on supply and demand and technical analysis on Summer and Winter Strip prices. Significant discussion took place around the current storage level. Due to the extreme weather in February, storage is the Bcf below the five-year average but about the Bcf above last year's level. In addition discussed US production hitting record levels and the anticipation of these levels will continue to be produced. Also discussed record power burn in February, retirement of coal-fired ganeration and the low level of active drilling rigs.

# Duke Energy Kentucky Hedging Program - Current Position November 2014 - October 2015 As of 03/12/15

Mar-15 Dec-14 Jan-15 Feb-15 Apr-15 May-15 Jun-15 Jul-15 Aug-15 Sep-15 Oct-15 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Fixed Price Fixed Price Fixed Price Collar Collar Fixed Price Fixed Price Fixed Price Total Hedged (utr/usy) Total Hedged (dth) Types of Hedging Products (1) Fixed Price Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %











KyPSC Case No. 2012-180 2015 Annual Report PUBLIC Page 313 of 333

#### Duke Energy Kentucky Hedging Program - Current Position November 2015 - October 2016 As of 03/12/15

Load Forecast	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16	May-16	Jun-16	Jul-16	Aug-16	Sep-16	Oct-16
City Gate Load Forecast (Mcf)									10 m	to the second		
TCO FSS Injections (Mcf)												
Total Requirements (Mcf)												
TCO FSS Withdrawals (Mcf)												
Other Withdrawals (Mcf)												
Total Withdrawals (Mcf)												
Amount Hedged (dth/day)												
Fixed Pric												
Fixed Pric												
Cost Ave												
Collar III												
Fixed Price												
Fixed Price												
Collar												
Total Hedged (duryday)												
Total Hedged (dth)												
vpes of Hedging Products (1)												
Fixed Price												
Price Caps												
No-Cost Collars												
mbedded Hedged Cost												
Winter												
Summer												
stimated EGC per Dth at City Gate												
Estimated System Supply (Gross)												
Hedged % of System Supply												
Seasonal % of System Supply												
mt Hedged with Storage @ City Gate												
Hedged (City Gate) (Dth)												
Storage Withdrawal (Dth)												
Market (Dth)												
Total (incl. Injections) (Dth)												
% Hedged & Storage												
Seasonal %												
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(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

# Duke Energy Kentucky Hedging Program - Current Position November 2016 - October 2017 As of 03/12/15

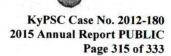
Nov-16 Dec-16 Jan-17 Feb-17 Mar-17 Apr-17 May-17 Jun-17 Jul-17 Aug-17 Sep-17 Oct-17 **Load Forecast** City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) Total Requirements (Mcf) TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) Fixed Price Cost Ave Fixed Price Total Hedged (otryday) Total Hedged (dth) Types of Hedging Products (1) **Fixed Price** Price Caps **No-Cost Collars Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

(1) Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.





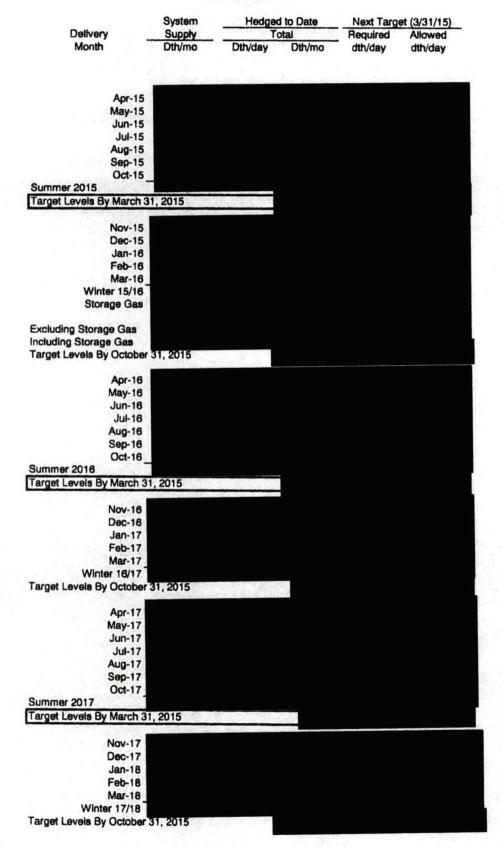
# Duke Energy Kentucky Hedging Program - Current Position November 2017 - October 2018 As of 03/12/15



Nov-17 Dec-17 Jan-18 Feb-18 Mar-18 Apr-18 May-18 Jun-18 Jul-18 **Load Forecast** Aug-18 Sep-18 Oct-18 City Gate Load Forecast (Mcf) TCO FSS Injections (Mcf) **Total Requirements (Mcf)** TCO FSS Withdrawals (Mcf) Other Withdrawals (Mcf) Total Withdrawals (Mcf) Amount Hedged (dth/day) TBD TBD TBD Total Hedged (dth/day) Total Hedged (dth) Types of Hedging Products (1) Fixed Price Price Caps No-Cost Collars **Embedded Hedged Cost** Winter Summer Estimated System Supply (Gross) Hedged % of System Supply Seasonal % of System Supply Amt Hedged with Storage @ City Gate Hedged (City Gate) (Dth) Storage Withdrawal (Dth) Market (Dth) Total (incl. Injections) (Dth) % Hedged & Storage Seasonal %

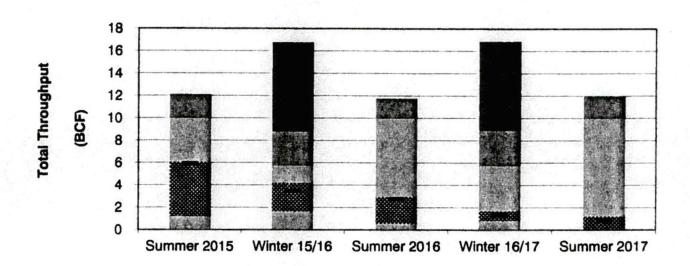
<sup>(1)</sup> Maximum percentage allowed per type of hedging product is 25% for Winter months and 40% Summer months.

#### Duke Energy Kentucky Hedging Program Current Position

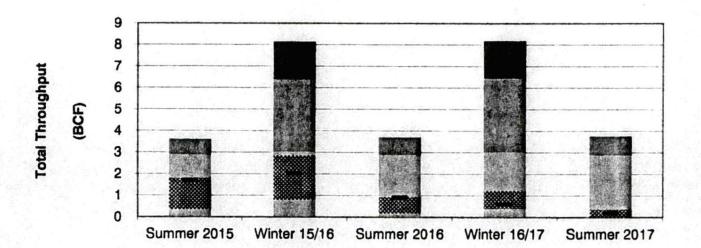


#### Hedging Strategy Current Position - March 12, 2015

#### **Duke Energy Ohlo**



#### **Duke Energy Kentucky**

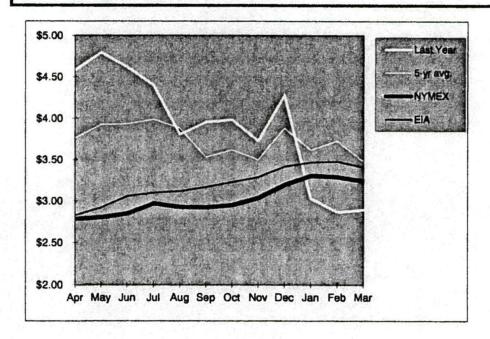


■ Target ■ Base ■ Swing ■ Storage - Hedged

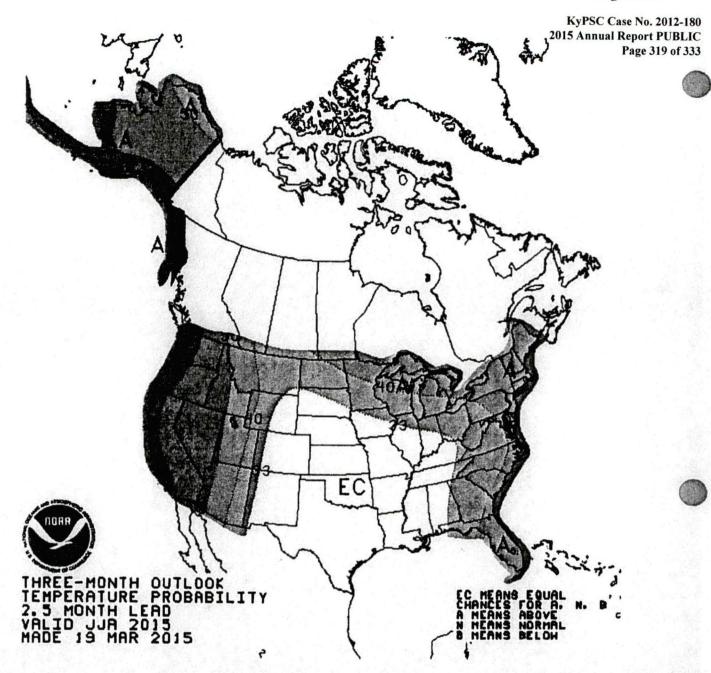
# COMPARISON OF HISTORIC SPOT & PROJECTED PRICES KyPSC Case No. 2012-180 TO CURRENT FUTURES PRICES Page 318 of 333

		ic Prices: osing Price		
	5-yr. avg. (10/11-14/15)	Last Year	EIA 10-Mar-15	NYMEX 24-Mar-15
Apr	\$3.77	\$4.58	\$2.830	\$2.785
May	\$3.93	\$4.80	\$2.920	\$2.805
Jun	\$3.94	\$4.62	\$3.060	\$2.849
Jul	\$3.99	\$4.40	\$3.100	\$2.970
Aug	\$3.88	\$3.81	\$3.120	\$2.928
Sep	\$3.53	\$3.96	\$3.170	\$2.924
Oct	\$3.62	\$3.98	\$3.230	\$2.950
Nov	\$3.50	\$3.73	\$3.290	\$3.037
Dec	\$3.89	\$4.28	\$3.420	\$3.196
Jan	\$3.62	\$3.03	\$3.470	\$3.306
Feb	\$3.73	\$2.87	\$3.480	\$3.290
Mar	\$3.48	\$2.89	\$3.410	\$3.240
2 Month Avg	\$3.74	\$3.91	\$3.208	\$3.023
Summe Winter A	er Average		\$3.061 \$3.414	\$2.887 \$3.214

\$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$	Ohio	Kentucky
\$ \$ \$ \$ \$ \$	\$	
\$ \$ \$ \$ \$	\$	
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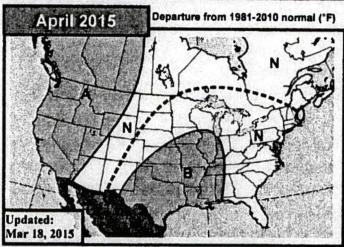
# EarthSat 30-00 Day Outlook

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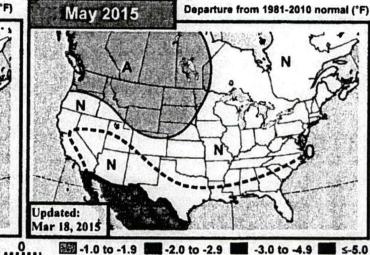
Wêdnesday, March 18, 2015

Meteorologists: BJ/BH/SS

**WEATHER SERVICES** 



≥+5.0 +3.0 to +4.9 +2.0 to +2.9 +1.0 to +1.9



-0.9 to 0.9



#### Forecast Remains Unchanged

**Aboves Remain Focused Over West** 

The April forecast remains unchanged with aboves in the West and belows from Texas to the south-central Midwest. There is a cold risk in the East and warm risk in the West given the expected negative state of the EPO at the start of the month, as ridging built into Alaska should allow for colder opportunities downstream in the East while keeping the West warm. There are questions as to how sustainable this negative EPO pattern will be, which is why the forecast remains unchanged and still mainly based on weak El Niño and +PDO forcings. But cold changes are possible in the East next week if confidence in a more sustainable -EPO increases. The CFS model shows belows the Northeast while also showing more warmth in the West and into the north-central US in a look not very dissimilar to March, and the warmer Northern Plains may be a risk given MJO trends early in the month.

Apr GWHDD\*\* Forecasts

\*10Y Normal \*05-14

Apr 2015 Fcst:

365

10Y Normal\* 338.5 30Y Normal 358.7 Apr-2014 346.3

No Change

"National Gas-Weighted HDDs



# Forecast Remains Unchanged

Remaining Warm Northwest to Northern Plains

The May forecast also remains unchanged with aboves holding steady in the Northwest and extending into the Northern Plains, while near to slightly below normal temperatures are still expected across the southern tier. The forecast continues to favor the influences of the ongoing positive PDO and the weak El Niño. However, long term trends do argue for warmer risks in the West if ridging remains more influential and as drought becomes more of a factor in California and parts of the Southwest. The CFS model shows a similar look to our forecast with aboves across the Northwest and into the Northern Plains, but it extends the aboves farther into the Upper Midwest and even to a lesser extent into the Northeast.

May PWCDD\*\* Forecasts

\*10Y Normal '05-14

May 2015 Fcst:

115

120.4 10Y Normal\* 30Y Normal 108.5 May-2014 127.8

150 GWHDDs (nc) (30Y: 156.5)

No Change

"National Pop-Weighted CDDs

Mar SO far

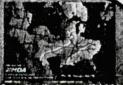




Final 60 Day Outlook



Final 30 Day Outlook



The last several days have featured some impressive warmth across parts of the Plains and western Midwest, and with the forecast continuing to lean in the warmer direction through the back end of the month it now appears that aboves will extend from the West into the Plains and northwestern Midwest with a second area of aboves in the Southeast, while cold is mainly focused in the Northeast and in Texas. The Final 30 Day outlook shows the area of belows expanded too far west and shows too little coverage of aboves in the West. The current expectation for March is 624.2 GWHDDs, now warmer than the 30Y normal (631.2) but colder than the 10Y normal (615.4).



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**WEATHER SERVICES** 

Tuesday, March 24, 2015

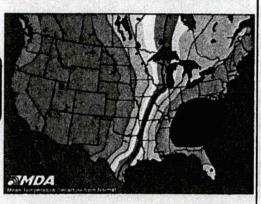
Meteorologist: BJ/AC

# Day 6: Sunday, Mar 29

Previous Forecast:



Forecast Confidence: 8/10



# Less Cool Air Present In the Northeast

# Abundant Much Aboves Over West Early

Mixed changes are present in today's forecast with some warmer adjustments to the Northeast and cooler adjustments in the Northwest. The Northeast will see high pressure early replaced with more moisture, allowing only seasonal to marginally below normal readings to exist across here in the latter parts of the period. However, the onset of the period does have much below normal anomalies stretching from the Mid-Atlantic into the Southeast. Meanwhile, warmth continues to thrive from the West into the Plains through the early and middle parts of the period. Much aboves are held over the West for then with a break down occurring due to a disturbance in the Northwest late. The Northwest turns seasonal late as a result.

#### Day 7: Monday, Mar 30

Previous Forecast:



Forecast Confidence: 7/10



# Day 8: Tuesday, Mar 31

Previous Forecast:



Forecast Confidence: 7/10

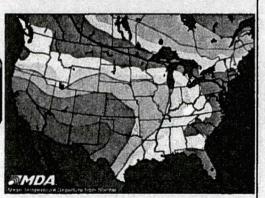


# Day 9: Wednesday, Apr 1

Previous Forecast:



Forecast Confidence: 7/10

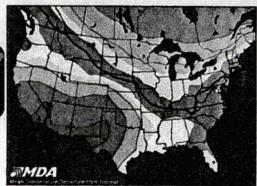


#### Day 10: Thursday, Apr 2

Previous Forecast:



Forecast Confidence: 6/10



-15

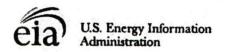
8 4 B

0°F +



A +5 A +8 MA+15 SA

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# Weekly Natural Gas Storage Report

for week ending March 13, 2015 | Released: March 19, 2015 at 10:30 a.m. | Next Release: March 26, 2015

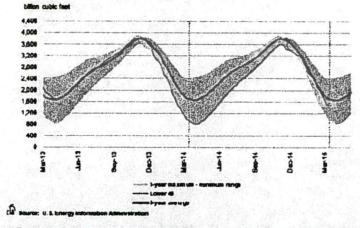
#### Working gas in underground storage, lower 48 states Summary lext CSV JSN

					Historical Comparisons			
		billion	Stocks cubic feet (Bcf)			sar ago 3/13/14)		r average 10-2014)
Region	03/13/15	03/06/15	net change	Implied flow	(Bcf)	% change	(Bef)	% change
East	581	618	-37	-37	400	45.3	742	-21.7
West	338	339	.1	-1	167	102.4	271	24.7
Producing	548	556	-7	-7	393	39.4	679	-19.3
Salt	108	108	0	0	61	77.0	131	-17.8
Nonsalt	440	447	.7	-7	332	32.5	548	-19.7
Total	1,467	1,512	-45	-45	960	52.8	1.692	-13.3

#### Summary

Working gas in storage was 1,467 Bcf as of Friday, March 13, 2015, according to EIA estimates. This represents a net decline of 45 Bcf from the previous week. Stocks were 507 Bcf higher than last year at this time and 225 Bcf below the 5-year average of 1,692 Bcf. In the East Region, stocks were 161 Bcf below the 5-year average following net withdrawals of 37 Bcf. Stocks in the Producing Region were 131 Bcf below the 5-year average of 679 Bcf after a net withdrawal of 7 Bcf. Stocks in the West Region were 67 Bcf above the 5-year average after a net drawdown of 1 Bcf. At 1,467 Bcf, total working gas is within the 5-year historical range.

#### Working gas in underground a torage compared with the 5-year meximum and minimum



Note: The shaded area indicates the range between the historical minimum and maximum values for the weekly series from 2010 through 2014.

Bource: Form EIA-912, "Weekly Underground Natural Gas Storage Report." The dashed vertical lines indicate current and year-ago weekly periods.

# **Pricing Predictions**



# A New Normal Expected For Gas Prices: Morningstar—March 17, 2015

Morningstar reduced their price estimate by 25% through 2020 based on continued natural gas production growth led by Marcellus Shale and associated gas.

"Despite our expectation for continued growth in US demand over the next several years, there is more than enough low-cost supply from areas like the Marcellus, Utica, and various oil-rich plays to justify a reduction in our midcycle natural gas price forecast to \$4/Mcf (Henry Hub) from \$5.40."

According to Morningstar, gas production is expected to grow 4% annually through the end of the decade, with output reaching nearly 90 Bcf/d by 2020. The majority of this incremental gas will come from Marcellus and Utica as well as oil rich basins in Texas, Colorado and North Dakota at prices lower than \$4.00/Mcf.

"Bentek's price forecast is more bearish than Morningstar; it expects Henry Hub cash prices to average just \$3.88/MMBtu through 2020. In fact, Bentek's current forecast doesn't see cash prices rising above \$3.00/MMBtu until November 2016 and \$4.00/MMBtu until January 2018. The \$5.00/MMBtu mark won't be surpassed until January of 2020, Bentek forecasts."

# Natural Gas May Have Bottomed, Citi Says—March 11, 2015

Citi analyst Tim Evans has indicated that gas prices may "actually be at or near a significant bottom." "Evans' reasoning is predicated upon a few key factors: gas prices that are hovering near the bottom of their five-year range, the net-short positioning of money managers, and storage levels that are below the five-year average level."

Bentek recently lowered their forecast due to oversupply. Bentek estimate for the summer strip is an average of \$2.39/MMBtu.

# **Miscellaneous Information**

# US Production approaches record levels

Bentek has estimated natural gas production is reaching 73.3 Bcf/d as we continue to set record high production days this winter (all time high set Dec. 20th 2014 73.5 Bcf/d). These new production level highs are driven by the Northeast and Utica shale coming online. Bentek is showing Utica increased production and we should see more coming online as FERC just approved 1.2 Bcf/d REX reversal.

# **Record Power Burn in February**

For the second month in a row due to cold weather and snow cover power burns breached the threshold of 23 Bcf/d. According to Bentek February averaged 23.1 Bcf/d power burn as HDD were up 96 y/y to 846. The concentration of the colder than normal weather happened over the more populated areas of the Northeast and Midwest. Electric loads were high during this time period, but power burn was up .5 Bcf/d weather normalized. Through 2014 6.5 GW of coal was retired with 70% of those GW's coming in the Northeast Bentek estimates. In addition to the retirements, we had 6.47 GW's of nuclear outages occurring in Feb (1.5 GW below the previous 5 year avg). Gas prices remained relatively cheap during this time period encouraging fuel switching in some areas. As we enter into the injection season it feels like we are going to have 1.4 Tcf in the ground, Bentek is expecting prices at Henry Hub to average \$2.39/MMBtu this summer. With the EPA Mercury Air and Toxics rule to take place in April of 2015 the US is looking at another 15.7 of coal retirements to happen of which 12.8 GW's are to be retired April – June of this year.

# Gas Rigs plummet to all-time low

Current US rigs drilling for natural gas sits at 242 for the week ending March 20, 2015 down 15 from the previous week and down 1,606 from the all-time high in 2008. Despite the fact that the rig count is continuing to fall production is expected to grow. According to Bentek US dry gas production will average 72.7 Bcf/d in March and 73.2 Bcf/d for 2015 (2014 US dry gas production was 68.5 Bcf/d). There are two major producers in Marcellus (Chesapeake and Cabot) planning on curtailing production or idle rigs this year. They feel in the current pricing environment that is the prudent thing to do. The fourth quarter of last year Chesapeake reported they realized \$1.72/Mcf.

# Energy Information Administration Henry Hub Pricing Per MMbtu March 10, 2015 Release



Jan-13	3.33
Feb-13	3.33
Mar-13	3.81
Apr-13	4.17
May-13	4.04
Jun-13	3.83
Jul-13	3.62
Aug-13	3.43
Sep-13	3.62
Oct-13	3.68
Nov-13	3.64
Dec-13	4.24
Average	
2013	\$ 3.728
Summer	\$ 3.770
2013	\$ 3.770

Jan-14		4.71
Feb-14		6.00
Mar-14		4.90
Apr-14		4.66
May-14		4.58
Jun-14		4.59
Jul-14		4.05
Aug-14		3.91
Sep-14		3.92
Oct-14		3.78
Nov-14		4.12
Dec-14	edina renaut	3.48
Average 2014	\$	4.392
Summer 2014	\$	4.213

Jan-15	2.99
Feb-15	2.87
Mar-15	2.90
Apr-15	2.83
May-15	2.92
Jun-15	3.06
Jul-15	3.10
Aug-15	3.12
Sep-15	3.17
Oct-15	3.23
Nov-15	3.29
Dec-15	3.42
Average	
2015	\$ 3.075
Summer	A 2.054
2015	\$ 3.061

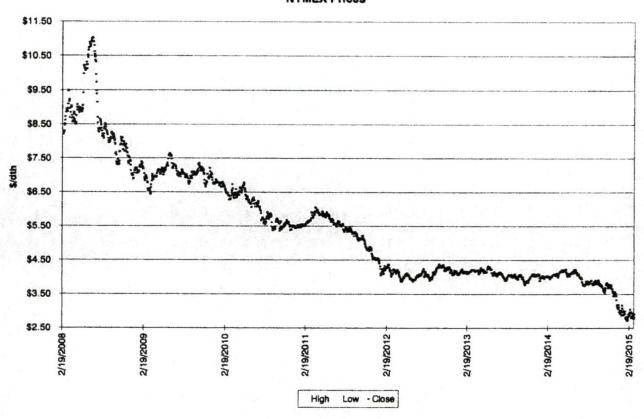
Jan-16	3.47		
Feb-16	3.48		
Mar-16	3.41		
Apr-16	3.26		
May-16	3.28		
Jun-16	3.27		
Jul-16	3.49		
Aug-16	3.53		
Sep-16	3.56		
Oct-16	3.60		
Nov-16	3.66		
Dec-16	3.70		
Average			
2016	\$ 3.476		
Summer 2016	\$ 3.427		

Winter 2013-	4 500
2014	\$ 4.698

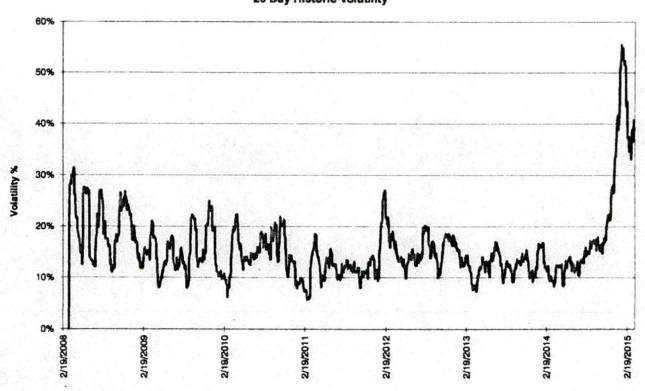
Winter 2014-		2 272
2015	>	3.272

Winter 2015- 2016	\$ 3.414
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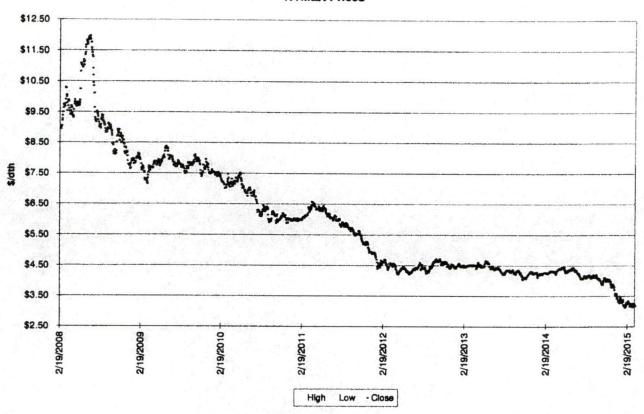
# Summer Strip 2015 NYMEX Prices



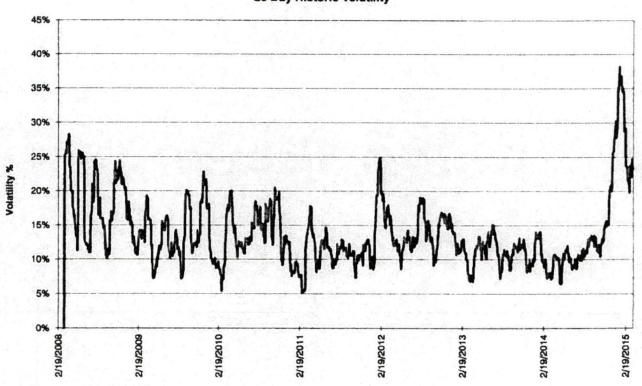
Summer 2015 20 Day Historic Volatility



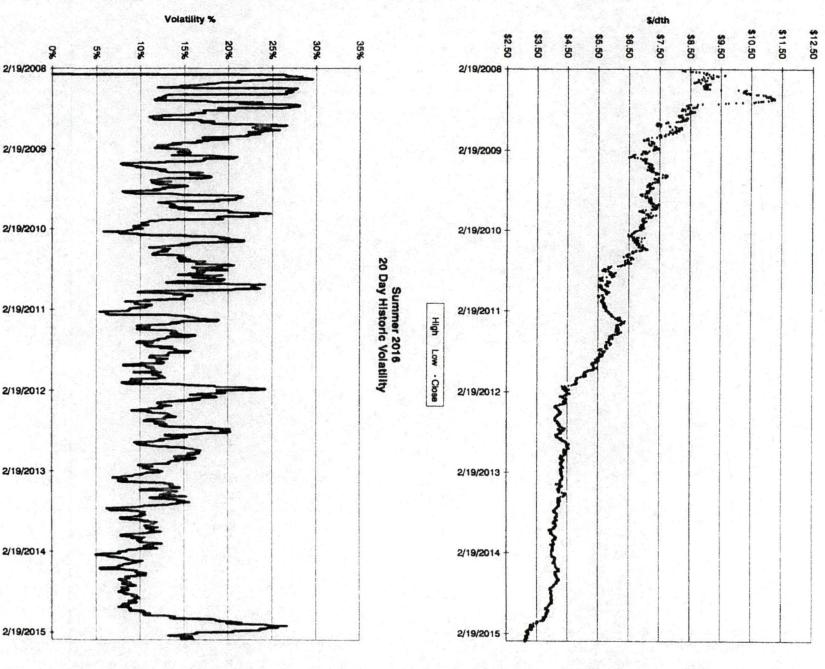
## Winter Strip Nov15 - Mar16 NYMEX Prices



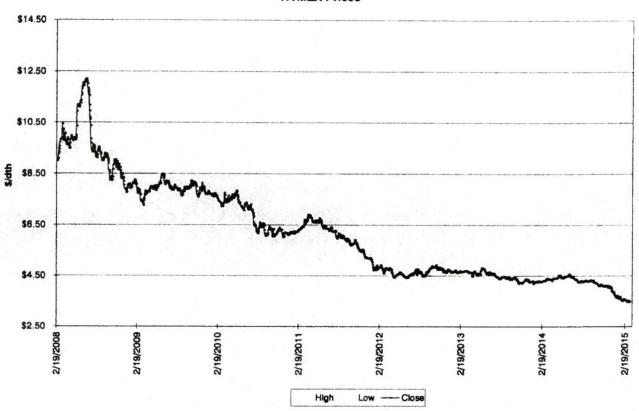
Winter Strip Nov15 - Mar16 20 Day Historic Volatility



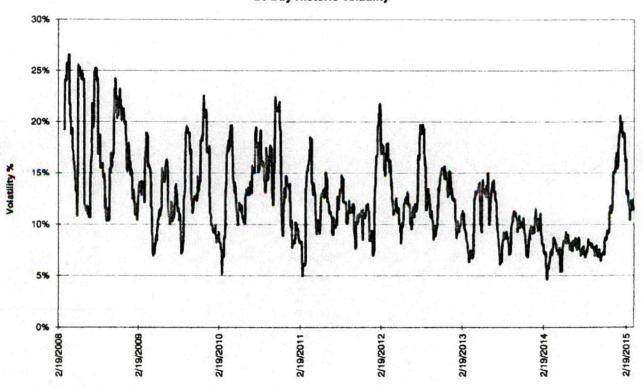


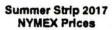


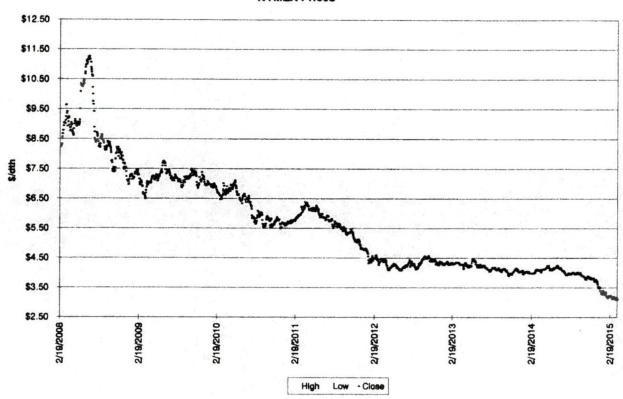
Winter Strip Nov16 - Mar17 NYMEX Prices



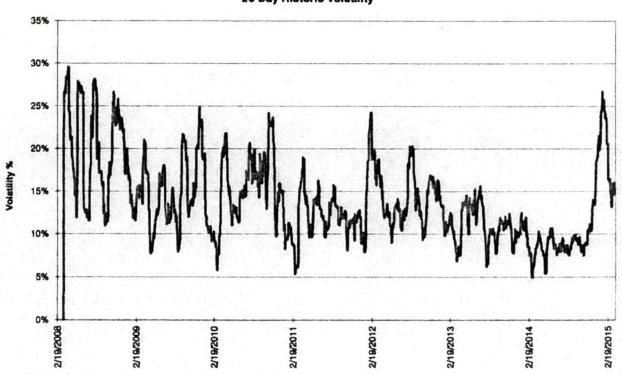
Winter Strip Nov16 - Mar17 20 Day Historic Volatility



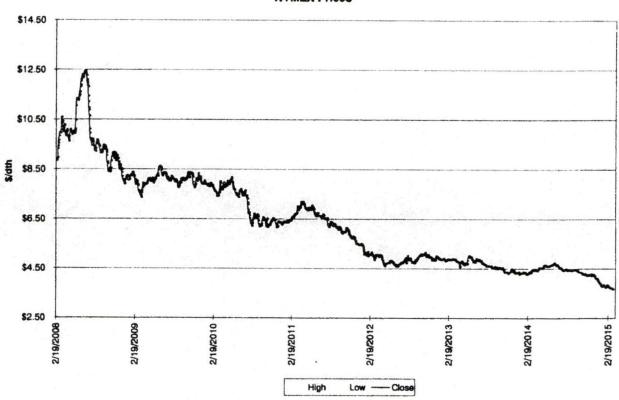




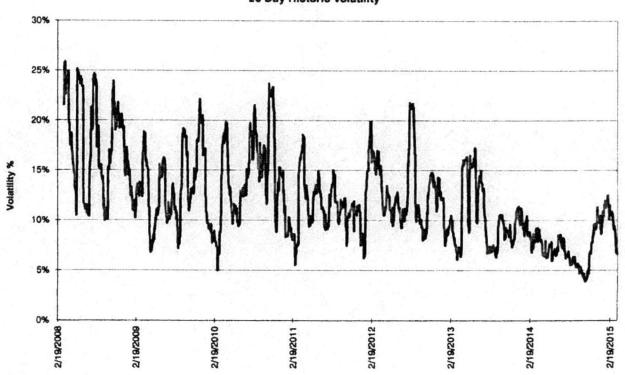
Summer 2017 20 Day Historic Volatility







Winter Strip Nov17 - Mar18 20 Day Historic Volatility





Independent Statistics & Analysis

# U.S. Energy Information Administration

**Short-Term Energy Outlook (STEO)** 

## **Natural Gas**

U.S. Natural Gas Consumption.

ElA projects that U.S. total natural gas consumption will average 75.7 Bcf/d in 2015 and 76.2 Bcf/d in 2016, compared with an estimated 73.5 Bcf/d in 2014. Growth is largely driven by demand in the industrial and electric power sectors, while residential and commercial consumption are projected to decline in 2015 and 2016. ElA projects natural gas consumption in the power sector to grow by 8.1% in 2015 and by 1.9% in 2016. Industrial sector consumption increases by 6.6% and 2.1% in 2015 and 2016, respectively, as new industrial projects come online, particularly in the fertilizer and chemicals sectors, and industrial consumers take advantage of low natural gas prices.

#### U.S. Natural Gas Production and Trade.

ElA expects that marketed natural gas production will increase by 3.7 Bcf/d (5.0%) and 1.6 Bcf/d (2.0%) in 2015 and 2016, respectively, reflecting continuing production growth in the Lower 48 states, which more than offsets the long-term declining production in the Gulf of Mexico. Although natural gas prices have fallen dramatically in recent months, ElA expects that increases in drilling efficiency and growth in oil production (albeit at a slower rate) will continue to support growing natural gas production in the forecast. With most growth expected to come from the Marcellus Shale, a backlog of drilled but uncompleted wells will continue to support production growth, as new pipelines come online in the Northeast.

Increases in domestic natural gas production are expected to reduce demand for natural gas imports from Canada and to support growth in exports to Mexico. EIA expects exports to Mexico, particularly from the Eagle Ford Shale in South Texas, to increase because of growing demand from Mexico's electric power sector, coupled with flat Mexican natural gas production.

#### Natural Gas Inventories.

On February 27, natural gas working inventories totaled 1,710 Bcf, 492 Bcf (40%) above the level at the same time in 2014 and 143 Bcf (8%) below the previous five year (2010-14) average for the week. Following the extremely cold weather last winter, inventories were 1,000 Bcf below the five-year average in mid-April 2014. After strong builds over the summer and weak draws during the early winter, natural gas working inventories briefly surpassed the five-year average in mid-February. However, recent cold temperatures have contributed to inventory levels falling back below the five-year average.

EIA projects that end-of-March 2015 inventories will total 1,587 Bcf, close to the five-year average and 730 Bcf more than at the end of last March.

# 0

# **Crude Oil Prices**

EIA forecasts that Brent crude oil prices will average \$59/bbl in 2015, \$2/bbl higher than projected in last month's STEO, and \$75/bbl in 2016. West Texas Intermediate (WTI) prices in 2015 and 2016 are expected to average \$7/bbl and \$5/bbl, respectively, below Brent. The Brent-WTI spread for 2015 is more than twice the projection in last month's STEO, reflecting continuing large builds in U.S. crude oil inventories, including at the Cushing, Oklahoma storage hub.