



# Competitive Energy Services Weekly Market Summary

December 10 - 14, 2018

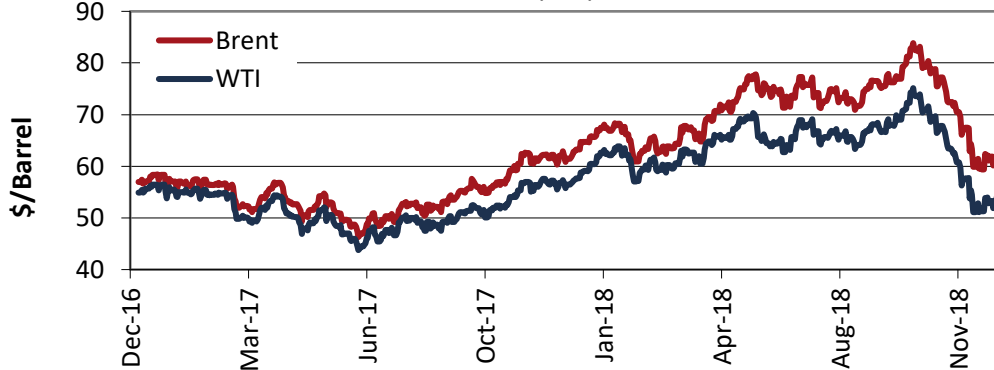
## Synopsis of Last Week's Energy Markets

Crude fell slightly last week but generally held in the range of the past 3 weeks. High domestic production rates are offsetting the market impact of the renewed agreement between the OPEC+ group. Natural gas prices for the remainder of this winter fell as much as 15% last week. Mild forecasts mollified fears that strong heating demand might strain inventories, which are 20% below the 5-year average.

## Oil Market

### Crude Oil - WTI & Brent

12-Month Forward Strips, past 24 months

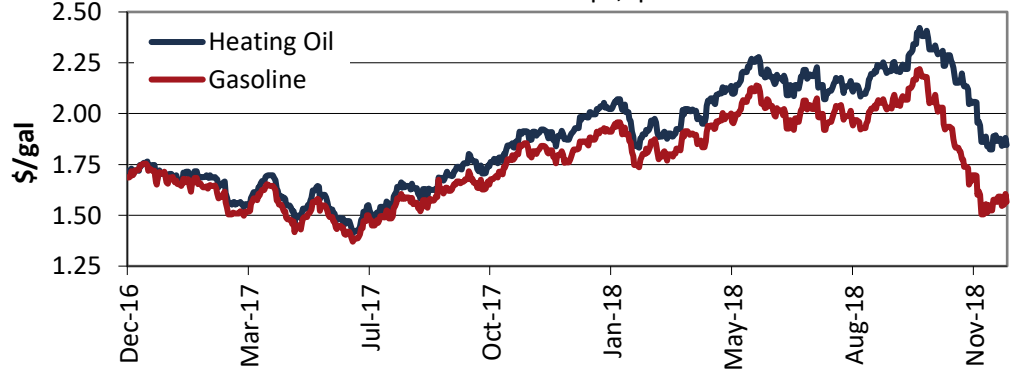


NYMEX WTI	last close	previous week	24-month high	24-month low
12 month strip, \$/bbl	\$52.56	\$53.27	\$75.39	\$43.82
date	12/14/18	12/7/18	10/3/18	6/21/17
change from last close		-1.3%	-30.3%	20%

US STORAGE (in million bbls)		crude oil
domestic stocks as of	12/7/18	442
gain / loss from previous week		-1.2
comparison to historic range		within

### Heating Oil & Gasoline

NYMEX 12-Month Forward Strips, past 24 months

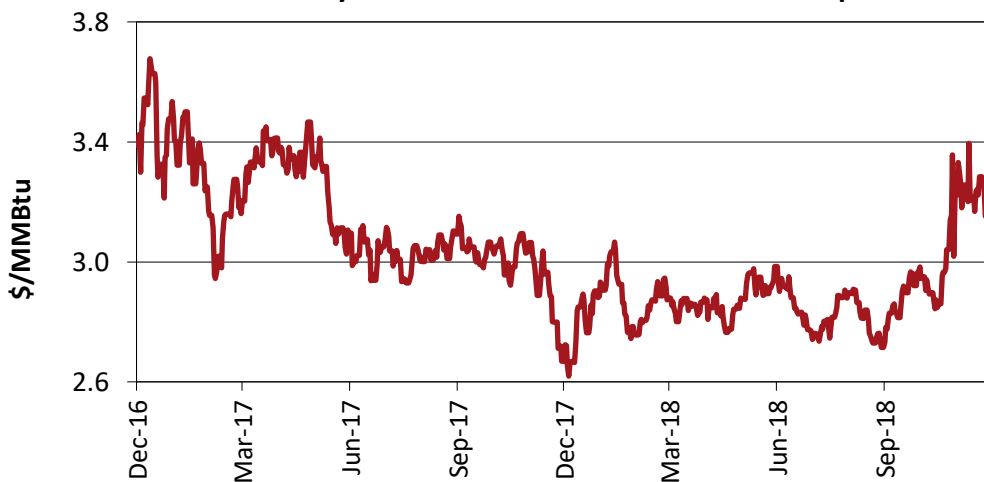


NYMEX Heating Oil	last close	previous week	24-month high	24-month low
12 month strip, \$/gal	\$1.84	\$1.88	\$2.43	\$1.41
date	12/14/18	12/7/18	10/3/18	6/21/17
change from last close		-1.8%	-24%	30%

US STORAGE (in million bbls)		distillate	propane	gasoline
domestic stocks as of	12/7/18	124	77	228
gain / loss from previous week		-1.5	-3.2	2.1
comparison to historic range		within	within	above

## Natural Gas Market

### NYMEX Henry Hub Futures: 12 Month Forward Strip



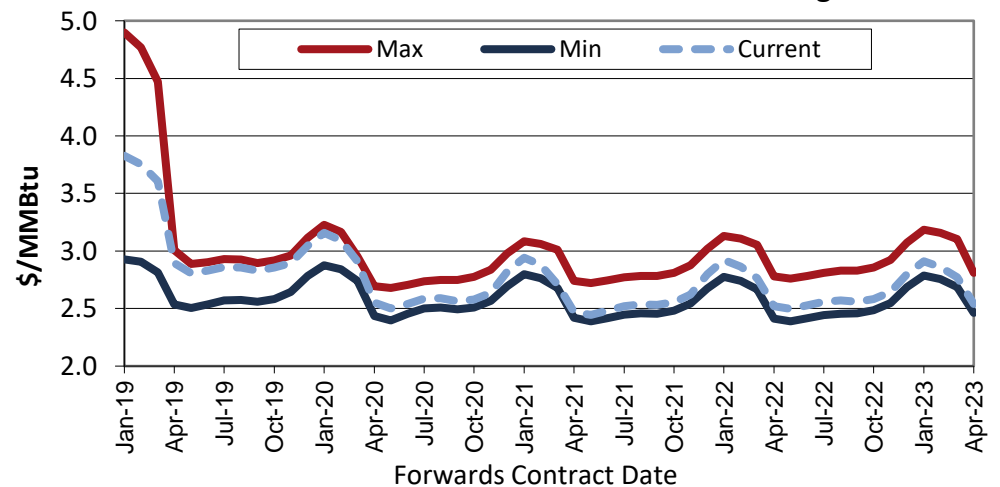
NYMEX PRICING	last close	previous week	24-month high	24-month low
12 mo. strip, \$/MMBtu	\$3.09	\$3.28	\$3.70	\$2.61
date	12/14/18	12/7/18	12/28/16	12/21/17
change from last close		-5.9%	-16%	18%

#### CES SCORE

12 month	29
18 month	33
24 month	42
36 month	53

The Score provides a measure of how current prices compare to their 52-week range. A score close to 0 indicates that current prices are close to their 52-week highs; a score close to 100 indicates that current prices are close to their 52-week lows.

### NYMEX Natural Gas Forwards vs. 1 Year Range



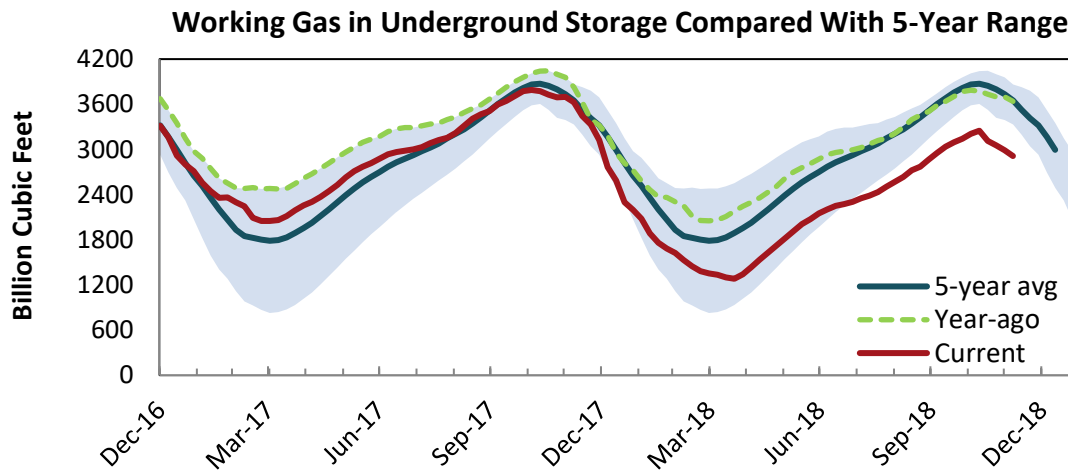
FORWARDS	12 month	18 month	24 month	36 month
strip (\$/MMBtu)	\$3.09	\$2.99	\$2.90	\$2.81

Natural gas futures are useful for both natural gas and electricity consumers because they drive electricity pricing in many U.S. markets. This chart compares the current natural gas price for each forward month on the NYMEX exchange to the highest and lowest prices for the same month over the past 12 months.



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### Natural Gas Storage



This chart shows the amount of natural gas in storage at each point in time (red line) compared to the highest, lowest, and average amounts in the past 5 calendar years.

EIA Storage Data			
	date	Bcf	+/-
Previous Stock Level	11/30/18	2,991	
Most Recent Stock Level	12/7/18	2,914	
Year-ago Stock Level		3,636	-19.9%
5-Year Average Stock Level		3,653	-20.2%
Most Recent Net Change	12/7/18	-77	
Year-Ago Net Change		-59	
5-Year Average Net Change		-79	

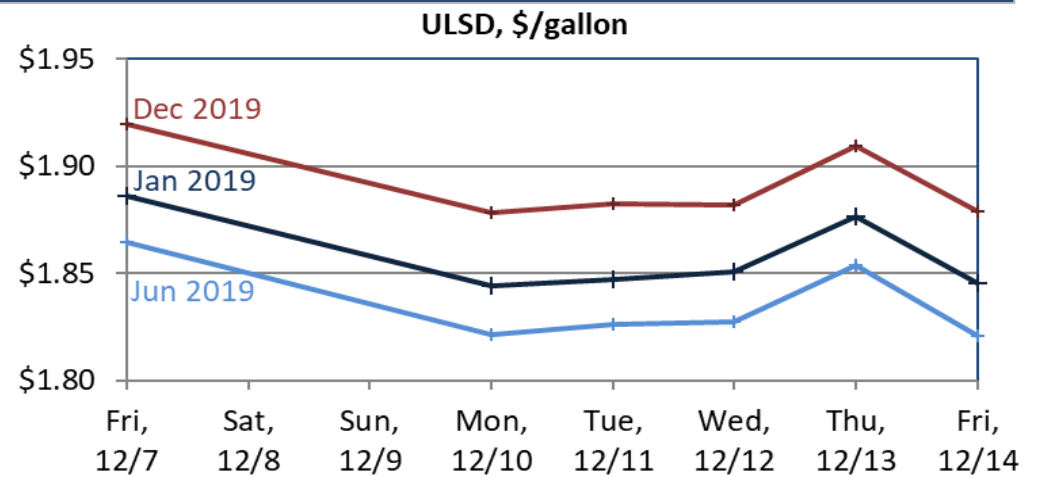
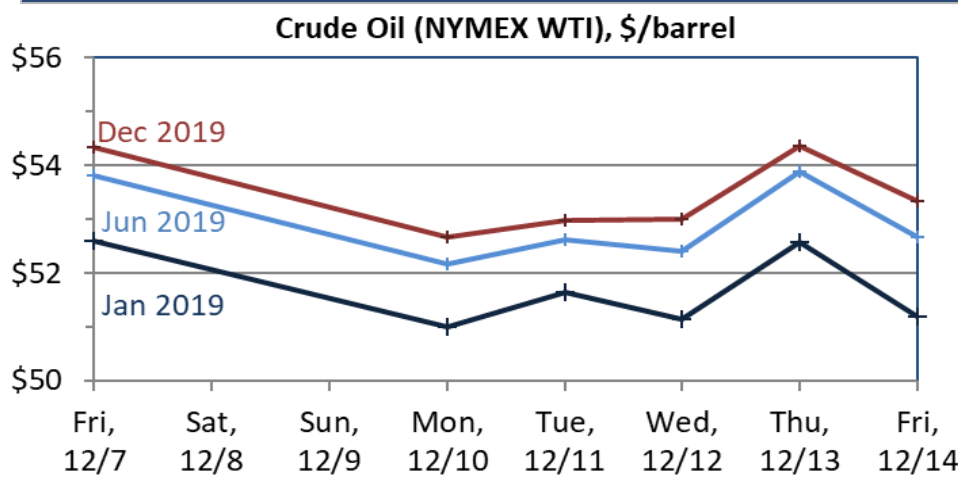
Data Source: EIA <http://tonto.eia.doe.gov/oog/info/ngs/ngs.html>

### Market Assessment

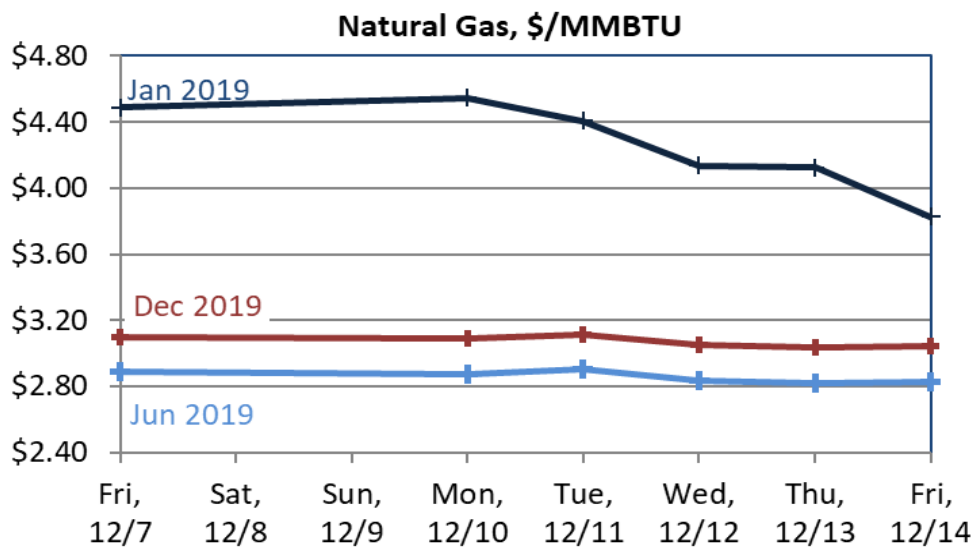
#### NYMEX Futures Summary Statistics

	Last Expired Contract	Exp. Date	Price	Prompt Month	Price	Most Expensive Next 12 Months	Price	Least Expensive Next 12 Months	Price	Next Winter Avg (Nov19-Mar20)
Crude oil	Dec-18	11/19/18	\$56.76	Jan-19	\$51.20	Dec-19	\$53.35	Jan-19	\$51.20	\$53.33
Heating oil	Dec-18	11/30/18	\$1.85	Jan-19	\$1.84	Dec-19	\$1.88	Apr-19	\$1.82	\$1.88
Natural gas	Dec-18	11/28/18	\$4.72	Jan-19	\$4.49	Jan-19	\$4.49	May-19	\$2.87	\$3.07

#### NYMEX End-of-Day Settlements



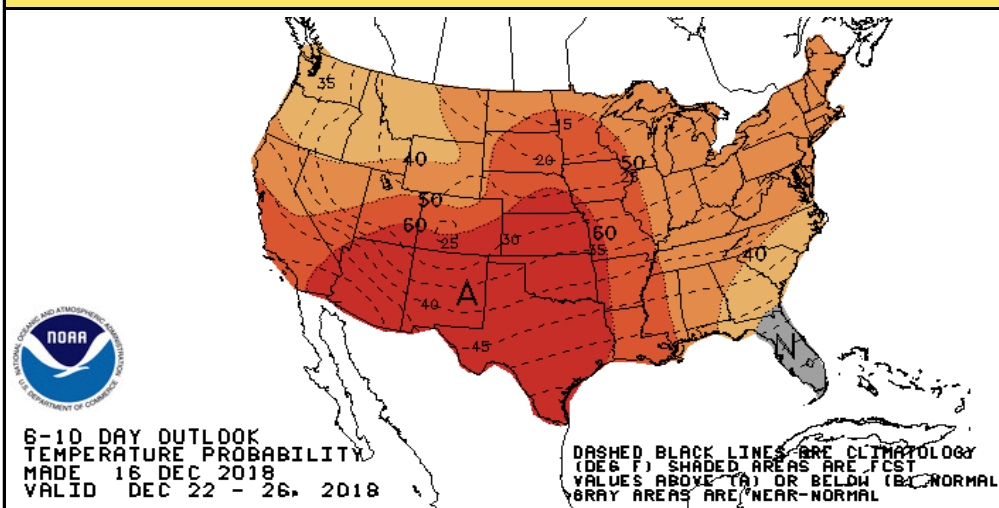
Crude oil has stabilized in the \$50-53 range for the past three weeks after retreating from \$75+ in early October. Two weeks ago, OPEC and Russia agreed to reinstate production cuts for the first half of 2019. Last week Saudi Arabia announced that starting in January it would cut 900,000 barrels per day from November's level. Russia plans to reduce by 50,000-60,000 barrels a day. As always, skepticism remains as to the degree and duration of their willingness to comply with announced plans. On Wednesday, the EIA reported that US crude stocks fell, but only by 1.2M barrels, much less than analysts' expectations of a 10M drop. Furthermore, the US production rate has exceeded 11M barrels per day for the past 7 weekly reports, reflecting the shale booms in Texas and North Dakota.



Natural gas prices fell dramatically last week, marking a second weekly loss after an early-winter rally that sent front-month contracts to nearly \$5/MMBtu. Markets returned to prices last seen in mid-November as the rest-of-winter strip fell 61 cents week-over-week and January contracts slipped below \$4 to close at \$3.83/MMBtu on Friday afternoon. Inventories remain well below typical levels, thanks in part to strong power burn demand from rising installed gas generation capacity and this year's unseasonably hot summer. Demand is set to recede this week as temperatures turn mild across the country, however, signaling that the 20% inventory deficit could shrink in coming weeks.

The National Weather Service near-term forecast once again calls for above-average temperatures for the continental US except Florida. The natural gas market scores on page 1 improved from the previous week. Clients with electricity or natural gas contracts expiring in 2018 and 2019 should consult with a CES representative for customized guidance.

**National Weather Service Forecast**



**6 - 10 Day Forecast for Dec 22 - 26**

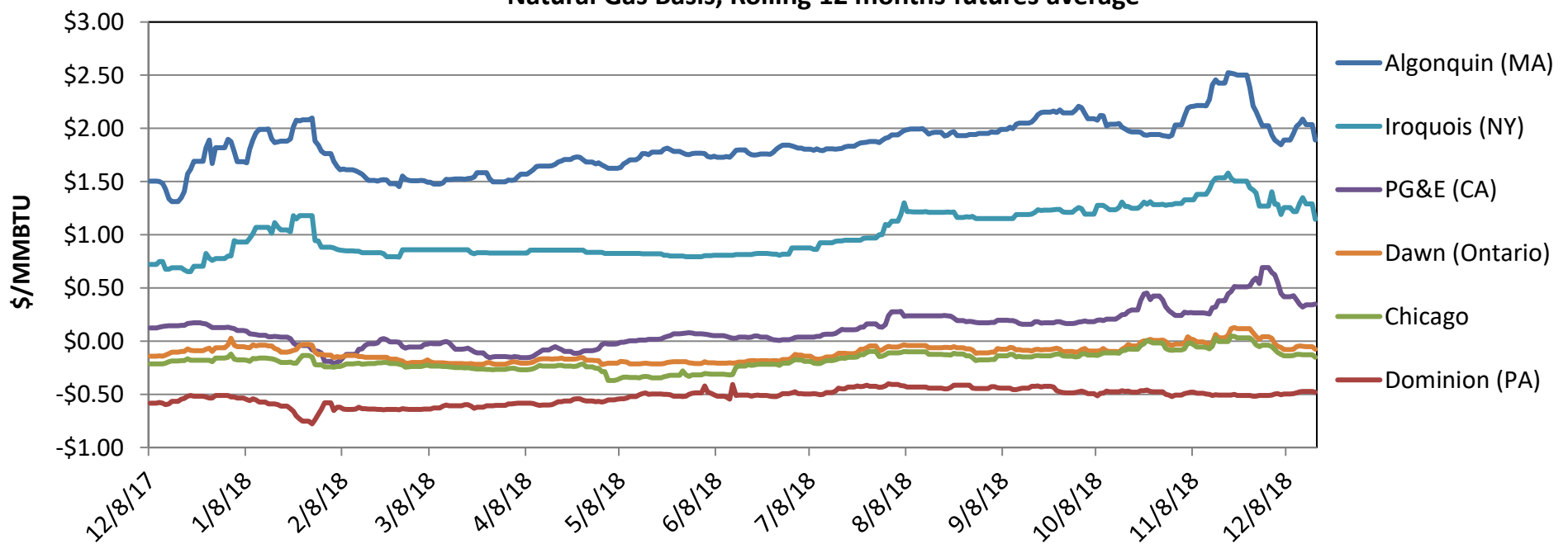
This map depicts forecasted temperatures for next week compared to the long term average. The blue/purple areas are forecast to be colder than normal, white areas are normal, and yellow/orange/red areas are warmer than normal. Abnormally hot weather in the summer and cold weather in the winter can increase the price for natural gas, oil, and electricity.

Source: Chart from the National Weather Service Climate Prediction

**Natural Gas Basis Futures**

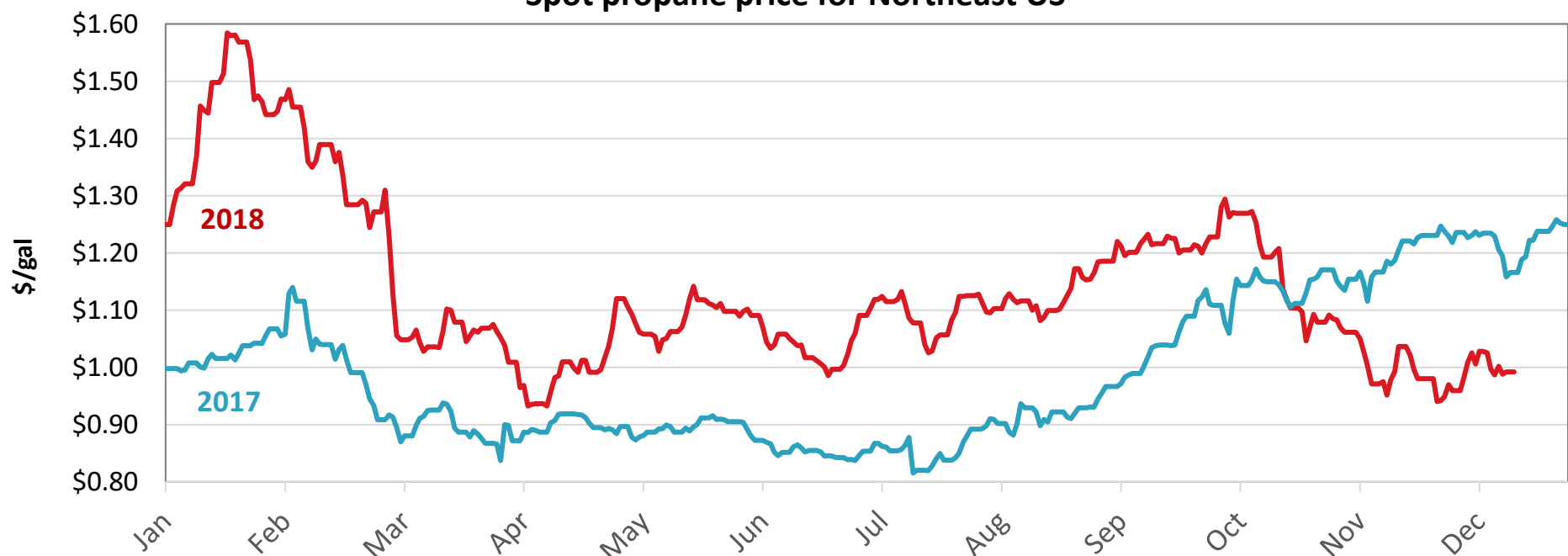
Basis is the price differential between Henry Hub, located in Erath, Louisiana, and the liquidity point closest to the end-user. Because Henry Hub is used as the delivery point for NYMEX natural gas futures contracts, the cost of using natural gas in any geographic region of the country can be approximated by adding the basis price for the appropriate liquidity point to the NYMEX futures contract. Basis prices can be negative (indicating that natural gas at a liquidity point is cheaper than at the Henry Hub) or positive (indicating that natural gas at a different liquidity point is more expensive than at the Henry Hub). Basis prices are a key component of regional electricity and natural gas costs.

**Natural Gas Basis, Rolling 12 months futures average**



**Propane**

**Spot propane price for Northeast US**



**Spot Prices**

		<b>New England ISO Real Time Power Pricing By Zone (\$/MWh)</b>							<b>Avg</b>	
		12/10/18	12/11/18	12/12/18	12/13/18	12/14/18	12/15/18	12/16/18		
<b>Power (\$/MWh)</b>	Maine RT On Pk	64	97	66	76	46			70	
	Maine RT Off Pk	62	93	78	53	51	31	33	57	
	NH RT On Pk	63	95	68	75	46			70	
	NH RT Off Pk	62	94	83	60	52	31	33	59	
	Vermont RT On Pk	62	93	67	71	45			68	
	Vermont RT Off Pk	61	93	81	59	50	30	32	58	
	Connecticut RT On Pk	62	92	66	72	44			67	
	Connecticut RT Off Pk	60	91	80	57	50	30	32	57	
	Rhode Island RT On Pk	64	94	68	74	45			69	
	Rhode Island RT Off Pk	63	94	82	59	52	31	32	59	
	NE Mass RT On Pk	64	96	69	75	46			70	
	NE Mass RT Off Pk	63	95	83	60	52	31	33	60	
	SE Mass RT On Pk	64	96	69	75	46			70	
	SE Mass RT Off Pk	63	95	83	60	52	31	32	59	
	WC Mass RT On Pk	63	94	68	74	45			69	
	WC Mass RT Off Pk	62	94	83	60	52	31	32	59	
		<b>New York ISO Real Time Power Pricing By Zone (\$/MWh)</b>							<b>Avg</b>	
<b>Power (\$/MWh)</b>	Capital RT On Pk	54	45	43	50	57			50	
	Capital RT Off Pk	39	48	35	17	22	33	33	32	
	Central RT On Pk	51	41	40	47	52			46	
	Central RT Off Pk	31	25	28	15	16	24	29	24	
	Hudson RT On Pk	54	45	43	51	57			50	
	Hudson RT Off Pk	38	41	34	17	21	31	32	30	
	Mohawk RT On Pk	52	43	41	49	52			48	
	Mohawk RT Off Pk	32	26	29	16	16	24	29	25	
	Milwood RT On Pk	55	45	44	51	57			50	
	Milwood RT Off Pk	38	42	34	17	21	31	32	31	
	NYC RT On Pk	55	47	43	51	58			51	
	NYC RT Off Pk	38	41	34	17	21	31	33	31	
			<b>PJM Real Time Power Pricing By Zone (\$/MWh)</b>							<b>Avg</b>
	<b>Power (\$/MWh)</b>	Eastern Hub On Pk	83	65	75	48	48			64
		Eastern Hub Off Pk	45	87	77	90	90	32	32	64
		Western Hub On Pk	55	49	36	35	35			42
Western Hub Off Pk		50	53	33	31	31	31	31	37	
PPL Zone On Pk		44	34	34	28	28			34	
PPL Zone Off Pk		36	32	31	29	29	31	31	31	
AEP RT On Pk		49	36	35	33	33			37	
AEP RT Off Pk		35	35	32	30	30	31	31	32	
Chicago RT On Pk		43	36	33	32	32			35	
Chicago RT Off Pk		33	25	26	29	29	29	29	29	
New Jersey Hub On Pk		54	42	36	36	36			41	
New Jersey Hub Off Pk		41	37	34	30	30	32	32	34	
		<b>California ISO Real Time Power Pricing (\$/MWh)</b>							<b>Avg</b>	
<b>Power (\$/MWh)</b>		SoCal Edison RT On Pk	95	50	32	28	74			56
	SoCal Edison RT Off Pk	50	48	42	41	47	40	43	44	
		12/10/18	12/11/18	12/12/18	12/13/18	12/14/18	12/15/18	12/16/18	<b>Avg</b>	
<b>Natural Gas \$/MMBtu</b>	Henry Hub, LA	4.54	4.49	4.28	4.31	3.99			4.32	
	TZ6, MA	7.03	8.66	7.54	5.09	4.45			6.55	
	Algonquin, MA	9.50	10.01	7.95	5.17	4.80			7.49	
	Chicago Hub, IL	4.37	4.26	3.95	4.06	3.68			4.06	
	New York, NY	5.12	4.58	4.24	4.10	3.71			4.35	
	Dominion South, PA	4.36	4.25	3.95	3.94	3.69			4.04	
	Opal Hub, WY	5.39	4.80	4.15	4.28	4.00			4.52	
	PG&E Citygate, CA	5.76	5.17	4.50	4.69	4.20			4.86	