

# **GAS DAILY**

Wednesday, October 10, 2018

# **NEWS HEADLINES**

# Approaching Michael shuts in 30% of Gulf gas

- 726 MMcf/d of Gulf of Mexico gas shut in
- Storm triggers gas demand destruction

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# Williams proposes another Transco expansion

- Leidy South eyed for startup in 2021
- Producers eager for improving price differentials

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# NGL demand drives some gas production gains

- NGL supply to grow 40% by 2022: ConocoPhillips
- Ethane prices recently hit six-year high

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# Non-associated gas output at Nejo field to double

- Pemex to boost Nejo production to 180 MMcf/d
- 104 wells to be drilled over next decade

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# SPOT PRICE AND BASIS CHANGES



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FINAL DAILY PRICE SU	RVEY -	PLAT	TS LC	CATIONS	(\$/MMBt	u)	
NATIONAL AVERAGE PRICE: 3.020 Trade date: 09-Oct Flow date(s): 10-Oct					Powered		ce
		Midpoint	+/-	Absolute	Common	Vol. [	
Northeast							
Algonguin, city-gates	IGBEE21	2.955	+0.075	2.880-3.100	2.900-3.010	182	28
Algonquin, receipts	IGBDK21	2.830	+0.280	2.800-2.850	2.820-2.845	13	3
Dracut, Mass.	IGBDW21	_	_			_	_
Iroquois, receipts	IGBCR21	3.280	+0.085	3.250-3.350	3.255-3.305	73	26
Iroquois, zone 2	IGBEJ21		+0.125	3.210-3.400	3.250-3.345	84	19
Niagara	IGBCS21		+0.010	3.000-3.100	3.035-3.085	61	11
Tennessee, z6 (300 leg) del.	IGBJC21		+0.050	3.350-3.400	2 220 2 205		10
Tennessee, zone 6 del. Tx. Eastern, M-3	IGBEI21 IGBEK21		+0.050	2.730-2.900	3.370-3.395 2.785-2.870	51 67	10
Transco, zone 5 del.	IGBEN21		-0.020	3.000-3.405	3.285-3.405	418	56
Transco, zone 5 del. North	IGCGL21		-0.265	3.000-3.350	3.000-3.160	13	4
Transco, zone 5 del. South	IGCHL21		-0.025	3.385-3.405	3.390-3.400	405	52
Transco, zone 6 N.Y.	IGBEM21	2.860	+0.065	2.780-2.900	2.830-2.890	181	26
Transco, zone 6 non-N.Y.	IGBEL21	2.830	+0.010	2.770-2.950	2.785-2.875	495	106
Transco, zone 6 non-N.Y. North	IGBJS21	2.830	+0.010	2.770-2.950	2.785-2.875	495	106
Transco, zone 6-non-N.Y. South	IGBJT21	_	-			_	_
Northeast regional average	IGCAA00	3.070					
Appalachia							
Columbia Gas, App.	IGBDE21	3.040	+0.055	3.010-3.080	3.025-3.060	470	107
Columbia Gas, App. non-IPP	IGBJU21	_	_				_
Dominion, North Point	IGBDB21	2.600	-0.045	2.540-2.670	2.570-2.635	138	17
Dominion, South Point	IGBDC21		-0.035	2.450-2.700	2.525-2.650	753	164
Lebanon Hub	IGBFJ21		+0.130	3.120-3.250	3.150-3.215	112	18
Leidy Hub	IGBDD21		_			_	_
Millennium, East receipts	IGBIW21		-0.045	2.500-2.720	2.605-2.715	89	27
Tennessee, zone 4-200 leg	IGBJN21		+0.050	3.030-3.090	3.055-3.085	217	51
Tennessee, zone 4-300 leg Tennessee, zone 4-313 pool	IGBFL21 IGCFL21		+0.005	2.500-2.700	2.575-2.675 2.900-2.900	392 43	88
Texas Eastern, M-2 receipts	IGCFL21 IGBJE21		+0.025	2.900-2.900	2.515-2.650	-	199
Transco, Leidy Line receipts	IGBIS21		-0.020	2.500-2.850	2.615-2.790	830	165
Appalachia regional average	IGDAA00		0.020	2.000 2.000	2.010 2.100	000	
Midcontinent							
ANR, Okla.	IGBBY21	2 0 4 5	+0.030	2.900-3.005	2.920-2.970	166	28
Enable Gas, East	IGBCA21		+0.035	3.000-3.085	3.055-3.085	93	16
NGPL, Amarillo receipt	IGBDR21		+0.045	3.040-3.050	3.050-3.050	79	14
NGPL, Midcontinent	IGBBZ21		+0.065	2.760-2.870	2.760-2.815	475	84
Oneok, Okla.	IGBCD21		+0.125	1.850-2.050	1.910-2.010	403	54
Panhandle, TxOkla.	IGBCE21		+0.065	2.900-2.970	2.925-2.960	413	88
Southern Star	IGBCF21		+0.400	2.860-2.950	2.875-2.920	78	23
Tx. Eastern, M-1 24-in.	IGBET21	_	_			_	_
Midcontinent regional average	IGEAA00	2.805					
Upper Midwest							
Alliance, into interstates	IGBDP21	3.250	+0.095	3.230-3.270	3.240-3.260	706	92
ANR, ML 7	IGBDQ21		_			_	_
Chicago city-gates	IGBDX21		+0.115	3.230-3.290	3.255-3.285	653	91
Chicago-Nicor	IGBEX21	3.260	+0.100	3.240-3.270	3.255-3.270	60	24
Chicago-NIPSCO	IGBFX21	3.270	+0.130	3.240-3.290	3.260-3.285	476	45
Chicago-Peoples	IGBGX21	3.265	+0.120	3.230-3.280	3.255-3.280	118	22
Consumers city-gate	IGBDY21	3.300	+0.060	3.280-3.320	3.290-3.310	198	32
Dawn, Ontario	IGBCX21		+0.070	3.245-3.340	3.285-3.335	424	49
Emerson, Viking GL	IGBCW21		+0.400	3.280-3.500	3.315-3.425	123	33
Mich Con city-gate	IGBDZ21		+0.035	3.250-3.325	3.255-3.295		166
Northern Bdr., Ventura TP	IGBGH21		+0.195	3.215-3.335	3.235-3.295	270	50
Northern, demarc Northern, Ventura	IGBDV21		+0.220 +0.200	3.280-3.350 3.200-3.345	3.290-3.325 3.235-3.305	323 589	54 91
REX, Zone 3 delivered	IGBDU21 IGBR021		+0.200	3.040-3.230	3.120-3.215		241
Upper Midwest regional average	IGFAA00		0.000	2.0.0 0.200	520 0.210		- //



) Natural Gas

# Approaching Michael shuts in 30% of Gulf gas, expected to whip prices

- 726 MMcf/d of Gulf of Mexico gas shut in
- Storm triggers gas demand destruction

Hurricane Michael was barreling down on the Florida Panhandle Tuesday, shutting down nearly 30% of gas production and 40% of oil output from the offshore Gulf of Mexico. The Category 3 storm also was whipping prices up and down, while threatening to knock out power service and drive down regional gas demand upon making landfall.

The storm's path will take it over a large swath of the Gulf's oil and gas producing region, resulting in the shutting in of 726 MMcf/d of gas,

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# PLATTS NATURAL GAS DAILY ASSESSMENT RATIONALE

Platts Gas Daily indices are based upon trade data reported to Platts by market participants and the Intercontinental Exchange.

The indices are calculated using detailed transaction level data from these providers. Platts editors screen the data for outliers that may be further examined and potentially removed. A volume weighted average is then calculated from the remaining set of data.

These locations were assessed by Platts and deviated from the standard volume weighted average methodology in the following ways:

1. Trunkline, WLA: Price of \$3.26/MMBtu was assessed at 4-cent premium to Trunkline, ELA based on recent daily gas trading and verified by ICE bid/offer activity.

This rationale applies to symbols found in the Market Data category GD listed at http://plts.co/uwHX30kyPG0

# 2-DAY-AHEAD TEMPERATURE FORECAST MAP

October 09 forecast for October 11



Source: S&P Global Platts, Custom Weather

# FINAL DAILY PRICE SURVEY - PLATTS LOCATIONS (\$/MMBtu)

Trade date: 09-Oct Flow date(s): 10-Oct

Flow date(s): 10-Oct							
East Texas	1	Midpoint	+/-	Absolute	Common	Vol. D	)eals
Aqua Dulce Hub	IGBAV21	_					
Carthage Hub	IGBAV21		+0.090	3.180-3.200	3.185-3.195	63	9
Florida Gas, zone 1	IGBAW21		+0.020	3.270-3.280	3.275-3.280	78	3
Houston Ship Channel	IGBAP21		-0.025	3.430-3.430	3.430-3.430	148	17
Katy	IGBAQ21	3.420	+0.000	3.400-3.440	3.410-3.430	936	95
NGPL, STX	IGBAZ21	3.350	+0.055	3.345-3.350	3.350-3.350	40	6
NGPL, Texok zone	IGBAL21	3.180	+0.045	3.165-3.190	3.175-3.185	916	110
Tennessee, zone 0	IGBBA21	3.175	+0.055	3.160-3.210	3.165-3.190	188	40
Tx. Eastern, ETX	IGBAN21		+0.050	3.245-3.260	3.245-3.255	88	18
Tx. Eastern, STX	IGBBB21		+0.000	3.350-3.380	3.365-3.380	247	52
Transco, zone 1	IGBBC21		+0.080	3.340-3.350	3.345-3.350	16	6
Transco, zone 2	IGBBU21		+0.070	3.290-3.330	3.290-3.310	81	5
East Texas regional average	IGGAA00	3.300					
Louisiana/Southeast							
ANR, La.	IGBBF21	3.115	+0.135	3.045-3.170	3.085-3.145	163	30
Columbia Gulf, La.	IGBBG21		+0.030	3.200-3.300	3.230-3.280	136	22
Columbia Gulf, mainline	IGBBH21		+0.020	3.140-3.170	3.140-3.155	1138	152
Florida city-gates	IGBED21						
Florida Gas, zone 2	IGBBJ21		+0.040	3.290-3.390	3.320-3.370	141	8
Florida Gas, zone 3 Henry Hub	IGBBK21		-0.030	3.470-3.540	3.480-3.515	416	46
	IGBBL21 IGBB021		+0.070	3.330-3.385	3.350-3.380	378	
Southern Natural, La. Tennessee, zone 1	IGBBU21 IGBHI21		+0.030	3.290-3.345 3.160-3.210	3.300-3.330 3.170-3.195	411 160	65 26
Tennessee, 500 Leg	IGBBP21		+0.040	3.255-3.360	3.300-3.350	448	70
Tennessee, 800 Leg	IGBBQ21		+0.040	3.255-3.280	3.265-3.275	186	32
Tx. Eastern, ELA	IGBBS21		+0.130	3.140-3.250	3.165-3.220	76	18
Tx. Eastern, M-1 30-in.	IGBDI21		+0.035	3.000-3.240	3.005-3.125	4	4
Tx. Eastern, WLA	IGBBR21	3.300	+0.020	3.285-3.325	3.290-3.310	273	34
Tx. Gas, zone 1	IGBA021		+0.030	3.160-3.180	3.170-3.180	386	57
Tx. Gas, zone SL	IGBBT21	3.180	+0.015	3.180-3.180	3.180-3.180	4	2
Transco, zone 3	IGBBV21	3.315	+0.020	3.290-3.330	3.305-3.325	228	45
Transco, zone 4	IGBDJ21	3.345	+0.025	3.300-3.390	3.325-3.370	1595	203
Trunkline, ELA	IGBBX21	3.220	+0.015	3.220-3.220	3.220-3.220	2	2
Trunkline, WLA	IGBBW21	3.260**	+0.120	3.260-3.260	3.260-3.260	0	0
Trunkline, zone 1A	IGBGF21	3.165	+0.090	3.150-3.180	3.160-3.175	112	24
Louisian/Southeast regional average	IGHAA00	3.250					
Rockies/Northwest							
Cheyenne Hub	IGBC021	2.965	+0.035	2.950-2.985	2.955-2.975	514	52
CIG, Rockies	IGBCK21	2.950	+0.035	2.945-2.950	2.950-2.950	69	8
GTN, Kingsgate	IGBCY21	2.800	-0.020	2.800-2.800	2.800-2.800	30	11
Kern River, Opal	IGBCL21	2.955	+0.020	2.930-2.985	2.940-2.970	686	102
NW, Can. bdr. (Sumas)	IGBCT21		+0.250	2.935-2.990	2.955-2.985	111	29
NW, s. of Green River	IGBCQ21		+0.110	2.650-2.790	2.705-2.775	71	17
NW, Wyo. Pool	IGBCP21		+0.015	2.900-2.975	2.945-2.975	409	70
PG&E, Malin	IGBD021		+0.040	2.960-3.030	2.970-3.005	429	86
Questar, Rockies	IGBCN21		+0.050	2.850-2.850	2.850-2.850	24	8
Stanfield, Ore.	IGBCM21		+0.020	2.950-2.980	2.965-2.980	52	10
TCPL Alberta, AECO-C* Westcoast, station 2*	IGBCU21		-0.495	1.730-2.050	1.775-1.935		165
White River Hub	IGBCZ21 IGBGL21		-0.415 +0.085	2.020-2.085 2.930-2.940	2.040-2.070 2.935-2.940	125 142	21 23
Rockies/Northwest regional average				2.000 2.040	2.000 2.040	146	
Southwest		0.400		0.050.0.400	0.070.0.400	107	10
El Paso, Bondad El Paso, Permian	IGBCG21		+0.060	2.250-2.460	2.370-2.460	107	18
	IGBAB21		+0.070				
El Paso, San Juan El Paso, South Mainline	IGBCH21		+0.210	2.250-2.530 2.650-2.785	2.300-2.440	172	30
Kern River, delivered	IGBFR21 IGBES21		+0.285	3.100-3.180	2.670-2.740 3.110-3.150	51 347	17 58
PGSE city-gate	IGBEB21		+0.040	3.540-3.600	3.555-3.585	814	90
PG&E, South	IGBDM21		+0.265	2.560-2.625	2.590-2.620		22
SoCal Gas	IGBDL21		+0.110	2.250-3.050	2.715-3.050		88
SoCal Gas, city-gate	IGBGG21		-0.570	3.200-3.400	3.205-3.305		62
Transwestern, Permian	IGBAE21		+0.085	1.500-1.550	1.505-1.530	57	12
Transwestern, San Juan	IGBGK21		+0.175	2.300-2.500	2.350-2.450	129	28
Waha	IGBAD21		+0.135	1.250-2.020	1.390-1.775		170
Southwest regional average	IGJAA00	2.505					
*Price in C\$ per gj; C\$1=US\$0.7713;	**Assesse	d Price;	Volume ir	n 000 MMBtu/da	y. Symbols rep	oresent	t gas

\*Price in C\$ per gj; C\$1=US\$0.7713; \*\*Assessed Price; Volume in 000 MMBtu/day. Symbols represent gas flow date.

or more than 28% of the Gulf's total gas output, and 670,831 b/d of oil, representing nearly 40% of total Gulf production, the US Bureau of Safety and Environmental Enforcement said Tuesday afternoon.

Supply curtailments in the region helped push prices to ninemonth highs at the benchmark Henry Hub, which jumped 7 cents on Tuesday to trade at \$3.365/MMBtu

"The initial impacts of the storm have naturally been on supply side as offshore pipelines have begun to shut in, which has helped provide upward movement in prices during a time of year that would normally be relatively flat," said S&P Global Platts Analytics analyst Tyler Jubert. "However, prices should quickly shift back down as the storm makes landfall, causing power demand to drop with temperatures and any major power outages."

A US National Hurricane Center Advisory issued at 4 pm CDT Tuesday upgraded Michael to a Category 3 hurricane and forecast that the center of the storm would move across the eastern Gulf through Tuesday night and make landfall as a major hurricane in the Florida Panhandle or Florida Big Bend area on Wednesday.

The storm is then expected to move northeast across the US

### PLATTS GAS DAILY MEXICO

### GAS DAILY MEXICO PRICES (\$/MMBtu)

Trade Date: 09-Oct Flow Date(s): 10-Oct

Location	Region		Proxy Hub	Proxy Hub Price	Transport Cost	Price
Rosarito	Baja	AAZMC21	Socal Border	2.915	0.190	3.105
Aguascalientes	Central	AAZMO21	El Encino	2.258	0.578	2.836
Tula	Central	AAZMN21	Tuxpan	4.427	0.545	4.972
Valtierrilla	Central	AAZMH21	Los Ramones - Monterrey	3.835	0.615	4.450
Villa de Reyes	Central	AAZMI21	Los Ramones - Monterrey	3.835	0.579	4.414
El Encino	North	AAZME21	Waha	1.580	0.678	2.258
Juarez	North	AAZMA21	Waha	1.580	0.521	2.101
Los Ramones - Monterrey	Northeast	AAZMF21	Tennessee, zone 0	3.175	0.660	3.835
Reynosa	Northeast	AAZMB21	TETCO STX	3.370	0.512	3.882
Sierrita	Northwest	AAZMD21	Waha	1.580	0.973	2.553
Topolobambo	Northwest	AAZMP21	El Encino	2.258	0.554	2.812
Merida	Peninsula	AAZMK21	Ciudad Pemex	4.741	0.684	5.425
Ciudad Pemex	South	AAZMJ21	Tuxpan	4.427	0.314	4.741
Puente Moreno	South	AAZMG21	Los Ramones - Monterrey	3.835	0.492	4.327
Tuxpan	South	AAZML21	Reynosa	3.882	0.545	4.427
Guadalajara	West	AAZMM21	Aguascalientes	2.836	0.637	3.473

Prices are a netforward calculation using selected Platts Gas Daily indices plus fully loaded transportation costs and are published in USD per MMBtu.



Source: S&P Global Platts

# HURRICANE MICHAEL'S PROJECTED PATH



Source: S&P Global Platts Analytics; National Hurricane Center; Bureau of Ocean Energy Management

Southeast Wednesday night and Thursday, and move off the Mid-Atlantic coast away from the US by Friday.

# Offshore production

Based on data submitted late Tuesday morning, BSEE said that personnel have been evacuated from 75 production platforms, roughly 11% of the 687 manned platforms in the Gulf, and from three of the 22 non-dynamically positioned rigs in the Gulf. Eight of the 17 dynamically positioned rigs currently operating in the Gulf have been moved out of the storm's expected path. In a statement on its website, BP said it had evacuated personnel and shut in production at its four operating platforms: Atlantis, Mad Dog, Na Kika and Thunder Horse. "Rigs are also preparing for storm evasion as necessary," the operator said.

The US Coast Guard issued an alert Tuesday, announcing altered port conditions in preparation for Hurricane Michael's arrival.

The following ports are closed to all inbound and outbound traffic: the Gulf Intracoastal Waterway east of Perdido Pass, the Port of Panama City and the Port of Pensacola.

In addition, the Coast Guard has set Port Condition Yankee, meaning

gale force winds are predicted to arrive within 24 hours, in the following ports and waterways: the Gulf Intracoastal Waterway west of Perdido Pass, the Port of Gulfport, the Port of Mobile and Port of Pascagoula.

### Pricing impact

Michael's expected Wednesday landfall created a two-sided impact on price movements in trading Tuesday. As had been the case with other recent storms, Michael triggered gas demand destruction, with price decreases observed in regions along the storm's expected path.

Pricing locations along the Florida Gas Transmission pipeline, such as Zone 3, demonstrated 3 cents in losses to trade at \$3.495/MMBtu, according to Platts pricing data.

Total Gulf Coast production decreases have been significant leading up to the hurricane's landfall. Since last Wednesday, production has decreased more than 1 Bcf/d to 2.39 Bcf/d Tuesday.

However, Southeast and East Texas pricing locations west of the hurricane's expected path demonstrated bullish movements Tuesday.

Onshore and offshore supply curtailments in the region kicked prices to highs not seen since the end of winter trading in January, including the \$3.365/MMBtu Henry Hub mark.

Falling in step, other highly liquid hubs such as Columbia Gulf Mainline, Tennessee's 500 Leg, Southern Natural and Transco Zone 4 all continued to set their own nine-month highs dating back to January 30 trading.

Columbia Gulf Mainline and Tennessee's 500 Leg gained 2 cents and 4 cents, respectively. The gains pushed their prices up to \$3.145/ MMBtu and \$3.325/MMBtu.

Sonat and Transco Zone 4 also had moderate gains of 3 cents and 2.5 cents each, pricing these locations at \$3.315/MMBtu and \$3.345/MMBtu, respectively.

### Market impact

Offshore production declines have been seen across all S&P Global Platts Analytics' production reporting areas (PRA) within the Gulf over the last two days, with Alabama and Mississippi Offshore experiencing the largest initial declines, according to data.

Total Offshore sample had fallen to 2.4 Bcf/d, as of Tuesday, a decrease of 1.0 Bcf/d over the last week. Alabama Offshore made up 260 MMcf/d of this decline, while Mississippi Offshore had fallen 460 MMcf/d, Platts Analytics data found.

Louisiana Offshore also began to show signs of decreasing, falling 150 MMcf/d over the same time period, while remaining in line with production

#### **OFFSHORE PRODUCTION - PIPELINE SAMPLE DATA**



levels seen within recent history. As a result, total modeled production for the Southeast slipped to 11.3 Bcf/d for Tuesday's estimates, a decrease of 1.0 Bcf/d from last week, according to Platts Analytics.

A number of pipelines already had experienced production shut-ins as of Tuesday afternoon. Destin Pipeline in Platts Analytics' Mississippi Offshore PRA saw the biggest declines from a volumetric standpoint, falling to 30 MMcf/d as of Tuesday, a decrease of 430 MMcf/d from the prior 30-day average.

Transco pipeline from Alabama Offshore had fallen 165 MMcf/d from its 30-day average to sit at 215 MMcf/d. There remains approximately 375 MMcf/d in sample production receipts across Alabama Offshore and Mississippi Offshore that could still experience shut-ins, most of which remained on Transco's system.

Several other major receipt pipes in the Gulf could still experience declines within Louisiana Offshore, according to Platts Analytics.

#### **Onshore preparations**

Onshore, pipeline operators, along with and gas and power utility companies, continued to activate emergency response plans to prepare for the potential power outages and infrastructure damage likely to be left in the storm's wake.

Duke Energy said it had power restoration crews staged to help the company's crews restore power as soon as it is safe to do so.

A spokeswoman for pipeline giant Kinder Morgan said the company was "monitoring Hurricane Michael's progress and activating our hurricane preparedness plans as needed."

<u>– Jim Magill, Brian Scheid, Jason Lord, Tyler Jubert</u>

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# Williams proposes another Transco expansion to boost Northeast gas takeaway capacity

- Leidy South eyed for startup in 2021
- Producers eager for improving price differentials

Williams' Transcontinental Gas Pipe Line, fresh off completion of its Atlantic Sunrise expansion, has secured shipper commitments from Seneca Resources and Cabot Oil & Gas to boost Appalachian Basin takeaway capacity by another 580 MMcf/d.

The Leidy South project announced Tuesday, featuring new compression and looping of existing Transco facilities in Pennsylvania, would further expand the pipeline system's ability to move Marcellus and Utica gas supplies from the Leidy Hub and Zick interconnect to points downstream in Transco's Zone 6 market area.

The news came as Cabot updated expected production figures for the quarter that ended September 30 and said that the new infrastructure that has recently come online has reduced bottlenecks in the US Northeast and improved basis differentials. Producers in the region have been eager to see a profit lift from better pricing out of the basin.

"Our realized prices for the third quarter came in higher than forecasted due to narrower basis differentials as fundamentals in the Northeast continued to improve," Cabot CEO Dan Dinges said in a statement. "We anticipate a further strengthening of realized prices during this coming winter heating season driven by the in-service of Atlantic Sunrise, current storage level expectations, and seasonal demand."

Leidy South is an expansion of Atlantic Sunrise's Central Penn Line South. The project will likely have a less-pronounced impact than Atlantic Sunrise, which provided a boost to Leidy prices, and could ultimately prove bearish if certain things hold true.

Expected to start up as early as the fourth quarter of 2021 subject to regulatory approvals, Leidy South would move more gas to River Road without a clear downstream demand market. To a certain extent, this is also being seen with Atlantic Sunrise, as nearly 1.7 Bcf/d of gas hits River Road, with only an incremental 300 MMcf/d (550 MMcf/d of mainline capacity came on last year) of southbound capacity on Transco's mainline available.

Since the full capacity of Atlantic Sunrise came online Saturday, Zone 5 South has flipped to a premium over Zone 5 North, indicating

# **TRANSCO STATION 195 SOUTH GAS VOLUMES**



length in Zone 5 North and Zone 6 and a constraint heading farther south into Zone 5, S&P Global Platts Analytics data shows. This is also supported by the fact that southbound flows on Transco through Station 195 have only increased by about 550 MMcf/d since Atlantic Sunrise came online, far less than the 1.65 Bcf/d flowing.

If Atlantic Sunrise continues to grow new production, and projects like Leidy South do so in the future, corresponding downstream capacity will need to be built, otherwise projects could prove bearish in the long run as production grows without a downstream market. The constraint, rather than being in and around the production area, amounts to a can being kicked down the road, in this case to the River Road interconnect and Station 195.

#### **Market trends**

For now, Williams and its shippers are bullish about the trends in the region moving in the right direction.

Transco has secured binding, 15-year commitments with Seneca and Cabot for 100% of the firm transportation capacity under the proposed Leidy South expansion project. The project includes lease agreements with National Fuel Gas Supply, from Leidy Hub to Clermont, Pennsylvania, and Meade Pipeline, from Zick to River Road on the Central Penn Line, Williams said.

Cabot, meanwhile, said that it expects net production for the third quarter to be approximately 2.03 Bcfe/d, a 19% increase compared to the same quarter a year ago on a divestiture-adjusted basis. Its current gross operated production volumes are above 2.6 Bcf/d, an increase of

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over 400 MMcf/d compared to the second quarter. For the full year, however, Cabot said it was cutting its daily production growth guidance from 10-12% to 7-8%.

Cabot is scheduled to release its third-quarter financial results on October 26. Williams is set to release its earnings results on October 31. — <u>Harry Weber and Grant Gunter</u>

# New appetite for US NGLs drives some associated gas production

- NGLs supply to grow 40% by 2022: Duncan
- Ethane prices recently hit six-year high

Higher associated gas production is not only being driven by the pursuit of oil, but also increasingly by producers seeking NGLs, according to Jim Duncan, director of market research for ConocoPhillips.

"By the end of 2018, US gas production will have increased by 7 Bcf/d over the course of one year to average around 80 Bcf/d," Duncan told the Rockies and West LDC Gas Forum in Los Angeles Tuesday. "By the end of 2020, we are expected to be producing 89 Bcf/d. The important thing to remember about that is many producers aren't trying to target natural gas."

"The growth has had a downstream impact on a number of industries. There are changes going on in gas usage. And one of those is industrial development. There is \$189 billion in industrial development on the ground right now scheduled to enter service between now and late 2019 and that includes NGLs," he said.

Ethane is the most recent to affect the market, he added. There are five new ethane steam crackers coming online, adding roughly 490,000 b/d of ethane that will come out of natural gas lines and go into the crackers, which will have an impact directly before the end of this year or shortly thereafter. That many barrels of ethane require about 8 Bcf/d of gas. These trends suggest supply growth of NGLs is expected to increase by 40% by 2022.

# Ethane prices

The recent surge in ethane prices at Mont Belvieu, Texas, has had an acute impact on ethylene margins, as the more than doubling of ethane prices has exceeded most market participants' expectations, according to S&P Global Platts Analytics. Ethane's rally to 61 cents/gal on September 18, the highest price for ethane since January 2012, was particularly notable as it pushed the ethane price to a point nearly equal to its propane equivalent price ceiling.

With early signs of stress appearing in the ethylene market through the early part of the year, the current price activity suggests September may have been a significant moment for the ability of steam cracker operators to manage feedstock prices and margins. The ability of cracker operators to switch among feedstocks to limit the price action of any one feed is weakening due to the emphasis on ethane debottlenecking in the mid-2010s and the current buildout of ethane-only crackers.

Historically, when the industry-wide feed slate was relatively balanced among ethane, LPG and naphtha, US cracker operators could switch to a price- or margin-advantaged feedstock to relieve pressure when any one feedstock was pricing comparatively high. But with the emphasis on the ethane feedstock advantage resulting from unconventional production in the US, the industry has moved away from feedstock flexibility, and thus away from switching as a mechanism for price control.

### NGLs surge

Around "10 years ago we didn't talk about NGLs much," Duncan said. "It was not high on the list of things to discuss. Out of the NGL market, ethane is now the biggest. And the biggest change has come because we've developed, drilled for and optimized pulling liquids out of these areas. The projects to watch going forward are very much inclusive of those, including ethane and propane projects.

"Texas is leading the band right now. The Permian [Basin] is starting to track up as the region gets over capacity restraints. There are nine pipeline projects ongoing in the Permian right now to make sure we can deliver the natural gas and NGLs we are producing," he said.

With indications of capacity management by US petrochemicals producers already in the market — including reduced operating rates, extended turnarounds and retooling to support non-ethane feedstocks — operators may face a period of difficult margins over the coming year or two, according to Platts Analytics. However, the anticipated buildout of fractionation capacity and new pipelines should offer relief on the ethane price side.

-Brandon Evans

# Non-associated gas output at Mexico's Nejo field to double by 2020

Mexico's National Hydrocarbon Commission Tuesday approved new development from Pemex's Nejo non-associated gas field in the Burgos Basin.

Through an integral exploration-and-production service contract with Iberoamericana de Servicios, Pemex will boost production at the field, the commission (CNH) said during a webcast session.

Pemex will boost Nejo's production to 180 MMcf/d by 2020-21 from 94 MMcf/d reported to CNH in July, according to the new development plan. The area is also expected to reach a peak condensate production of 7,000 b/d during the same period.

"This shows the results of Pemex partnering with private companies to maximize investment, production, and reserves promoted by the energy reform," CNH Commissioner Hector Acosta Felix said during the webcast.

Nejo has been one of the few fields that has exceeded its Round Zero production goals, according to the commission. The field was initially expected to produce 30 MMcf/d by 2018 and end its productive life by 2022.

Pemex and its partner will reach a final recovery rate at Nejo of 84.5% from above 54% today, the commission said. Nejo began production in 2007, reaching peak production of 244 MMcf/d by 2015. The expected final recovery will exceed the profile of similar non-associated gas fields in Mexico, which have a final recovery range between 72%-80%.

Iberoamericana will frack and use directional drilling to enhance production in the conventional non-associated gas field.

#### More wells to be drilled

Pemex plans to now drill 104 wells over the next decade rather than the 63 approved under the field's original Round Zero development plan. The company is also going to build a pipeline and a gas gathering center to continue developing the field. It will spend \$1.3 billion on these efforts until 2029.

The 127-square kilometer Nejo Field is in the southwestern Burgos Basin in Tamaulipas state.

To boost production, Pemex and Iberoamericana are focusing on developing the northern portion of Nejo and developing new reserves in the Frio Marino and Anahuac formations.

The total resources expected to be recovered by Pemex by 2029, 321 Bcf of gas and 11.2 million barrels of condensate, exceeds Nejo's certified resources today, the CNH technical development unit said.

With additions from this year, Pemex expects to increase certified reserves in the field for the next year annual reserve report, the commission said..

— <u>Daniel Rodriguez</u>

# Antero to simplify gas midstream affiliate in bid to boost growth

Similar moves seen from other producers and pipeline operators

Market trends and tax implications driving overhauls

Antero Resources said Tuesday it planned to simplify its midstream affiliate corporate structure in the latest move by a natural gas producer to overhaul parts of its operations.

Strategic reviews are becoming more commonplace across the sector as investors push producers to increase growth opportunities, leverage new pipeline infrastructure and cut costs.

Under the Antero plan, Antero Midstream will be converted from a limited partnership to a c-corp, with the producer being the single largest shareholder of the new entity with an approximately 31% stake. The transaction, which involves Antero Midstream GP acquiring all of the outstanding Antero Midstream Partners units and renaming the combined entity Antero Midstream, is expected to close in the first quarter of 2019.

Over the least year, there has been a wave of operators of pipelines, gathering systems, processing plants and export facilities seeking to simplify their corporate structures. Some of the moves followed a tax policy change by US regulators that disallowed some midstream companies organized as master limited partnerships from recovering taxes paid by unit holders through cost-of-service rates charged to some customers.

C-corps are able to add income taxes into their cost-of-service calculation since the entities themselves pay income taxes. Antero said it expects to be able to substantially shield itself from paying taxes on its gain from the midstream simplification because of net operating losses it was able to carry over from prior periods.

Pipeline operators Enbridge and Williams and No. 1 US gas producer EQT are among the other companies that have announced simplifications or structural changes. In EQT's case, it decided to spin off its midstream operations into a standalone company, following its acquisition of rival Appalachian producer Rice Energy.

<u>— Harry Weber</u>

# More than 16 GW of coal-fired capacity to retire by 2021: FERC staff

- Stakeholders divided on impact of retirement trends
- Gas, wind, solar account for most proposed additions

More than 37 GW of generation capacity has been proposed to retire by September 2021, including 16.3 GW of coal-fired capacity, 12 GW of gas-fired power and 8 GW of nuclear generation, according to the US Federal Energy Regulatory Commission staff's monthly infrastructure report.

In the context of the ongoing debate about fuel security, the latest report's numbers continue an alarming trend, said William Scherman, a partner at Gibson, Dunn & Crutcher. "The country is at a crossroads. Fuel diverse resources are vanishing each day," said Scherman.

"Markets are broken," Scherman said, citing recent FERC orders seeking key rule changes in PJM Interconnection and ISO New England. "If this doesn't cry out for a comprehensive and holistic policy review by FERC and the states, I do not know what would," he said.

In June, the Trump administration directed the US Department of Energy to take immediate steps to prevent the retirement of fuelsecure power facilities such as coal and nuclear plants.

#### **Context of retirements**

Alison Silverstein, an independent consultant, said that proposed retirements need to be considered in light of the fact that there is 897 GW of coal, nuclear and gas-fired capacity online today and another 79 GW of gas-fired plants are slated to be added by 2021.

"So the idea that 37 GW is proposed to retire ... doesn't exactly strike fear in my heart," Silverstein said. "That doesn't mean the grid is going to crater in any way, shape or form," she said.

John Shelk, the president of the Electric Power Supply Association, said the report's numbers are not surprising and simply show that older, inefficient, lower capacity-factor units like coal and nuclear plants are retiring, while newer, more efficient and more cost-effective

#### AVAILABLE INSTALLED GENERATING CAPACITY



#### units are replacing them.

There is no rational basis to intervene to stave off coal and nuclear retirements, Shelk said. "Initially selective intervention for coal and nuclear will simply beget non-market mechanisms for the rest of us too," said Shelk, who represents independent power producers. "Consumers, the economy and the environment would all be worse off if that happens."

It is telling that the administration has not acted on the grid resilience issue since this spring, Shelk added. "The passage of time proves that there is and never was any such emergency," he said.

#### **Proposed additions**

Meanwhile, FERC staff's report also found that gas-fired, wind and solar generation account for the lion's share of the 252 GW of capacity proposed to be added by September 2021. More than 79 GW of gasfired capacity, 89 GW of wind and 57 GW of solar are slated to come online in that timeframe, FERC staff said.

The current mix of installed generating capacity is roughly 23% coal, 44% natural gas and 9% nuclear, according to the infrastructure report for August released Tuesday.

Looking at January-through-August 2018, more than 11.5 GW of gas-fired capacity came online, compared to 10.8 GW that started service in the same timeframe last year, the report said. But wind and solar installations decreased compared to last year at this time, with 2.3 GW of wind and 2.6 GW of solar installed through August 2018, compared to 4.4 GW and 3.2 GW respectively through August 2017.

— <u>Kate Winston</u>

# ISO NE proposes market-based approach to bolster winter fuel security

- A multi-day-ahead market could look seven days ahead
- Could include a voluntary, seasonal auction held prior to winter

ISO New England on Tuesday proposed several market-based approaches that could be used to help improve winter fuel security. At a New England Power Pool meeting, the grid operator recommended developing mechanisms, such as a multi-day-ahead market and seasonal auction, to value and optimize the region's energy resource inventory for roughly a week ahead.

The Federal Energy Regulatory Commission ordered the ISO (EL18-182) to develop market design improvements that better address regional fuel security and file the proposed rule changes July 1, 2019, according to a presentation given by Chris Parent, ISO NE's director of market development, at the NEPOOL Markets Committee Meeting held in Westborough, Massachusetts.

New England's power system and fuel mix are changing due to "industry and policy trends," the presentation noted. And while the grid operator is meeting its regional resource adequacy requirement for capacity based on expected summer peak demand, it is "concerned about the region's ability to overcome emerging energy security problems in the winter."

#### Defining the problem

There may be insufficient energy available to the New England power system during extended cold winter weather to satisfy power demand, given the system's evolving resource mix and fuel delivery infrastructure, the ISO said.

For example, high gas demand for heating caused natural gas pipeline constraints that sent gas prices to record highs at some locations during an extreme cold snap from late 2017 into January 2018. The jump in heating demand and gas prices drove up wholesale electricity prices offered by gas-fired power plants. As a result, both oil- and coal-fired power plants ran "at much higher levels" than normal during the period, the grid operator said at the time.

#### ISO NE FUEL MIX DURING 2017-18 COLD SNAP Daily generation by fuel source



Source: ISO-NE

"During this extreme cold, some power plants have either tripped offline or had to reduce their output, while other oil-fired and dual-fuel generators are quickly depleting their fuel supply," ISO NE spokeswoman Marcia Blomberg said in an email on January 7.

While there has been no loss of load to date on the bulk power system due to these conditions, the ISO is concerned this emerging issue will worsen over time due to observed industry trends, the grid operator said in the presentation Tuesday.

New England's energy markets are not designed to provide forward price signals, beyond the day-ahead market, that reflect the potential for insufficient energy during cold weather conditions, the ISO said.

It also noted that the current market design may not be set up to provide sufficient energy needed to withstand the "practical uncertainties of operating a limited energy, just-in-time power system during cold weather conditions."

ISO NE's markets currently do not provide specific, forward, price signals during the winter about future system constraints beyond the existing day-ahead market.

#### Market-based approach

Since New England's winter energy issues are fundamentally an energy supply problem, not a capacity shortfall problem, ISO NE said creating a way to value an energy resource buffer would increase incentives to supply energy, to reduce demand and maintain "on-demand energy inventory prospectively when (forecast) electricity demand begins to stress available supply." Simultaneously, ISO NE called for creating a market mechanism to cost-effectively optimize the region's energy resource inventory for roughly a week ahead.

At the conceptual level this could be achieved by developing multi-day ahead markets that run the day-ahead energy market using a rolling, seven-day-ahead-plus horizon, optimizing all energy — including inventoried energy — over that timeframe, according to the presentation.

That real-time, multi-day ahead market could include a new ancillary service the ISO has dubbed an "Energy Inventory Reserve Constraint." This would involve procuring and compensating for an energy inventory that is available to be used on-demand over the next seven-plus days.

Another conceptual element would be a "Forward Inventory Reserve Mechanism" that would take the form of a new, voluntary, seasonal auction ahead of the winter period. This would provide a forward price signal for resource owners to arrange energy inventory and fuel replenishment for the coming winter, the presentation said.

#### Next steps

The ISO has proposed defining the problem and discussing the conceptual approaches with stakeholders through December, then formal proposals and tariff changes could be developed from January to March 2019 through the relevant committees.

Finally, the packages could be voted on at the May 2019 Markets Committee meeting and June 2019 Participants Committee meeting in time for FERC's July 1, 2019 deadline, according to the presentation. — Jared Anderson

# Mexico's Pemex to develop six new offshore fields by 2020: CEO

Mexican state oil company Pemex expects to add 210,000 b/d and 350 MMcf/d of new production by the end of 2020 from the development of six shallow water fields in the Gulf of Campeche, CEO Carlos Trevino said Tuesday.

The development budget of these fields still pends congressional approval, Trevino said at a webcast event from Mexico City.

"As we say in Mexico, these are fields that are at a nougat point, ready to be exploited," he said. The development of this wells is highly likely as President-elect Andres Manuel Lopez Obrador seeks to boost Mexico's oil production. "We expect these six fields will begin production soon, giving the incoming administration a good platform to recover the declining production," Trevino said.

The six fields, Trevino said, are at different phases: Xikin and Esah are in development, Koban, and Kinbe are being assessed; and Mulach, and Manik are in the early stages of exploration. The combined proven, probable and possible reserves of the fields are 865 million boe, he added. All these fields are located near existing infrastructure, speeding their development, Trevino said.

Mulach and Manik are two new discoveries Pemex made public on Tuesday. Both are located in Campeche Bay, and their combined 3P reserves are 180 million BOE.

Manik was discovered in April. It has a total depth of 4,800 meters with a water depth of 90 meters. It is 102 kilometers from Ciudad del Carmen, Campeche state. It is between the lxtal and lxtoc fields. Manik has heavy oil with a 20 API and could produce between 10,000 and 15,000 b/d according to Pemex's estimates.

Mulach was recently discovered. It is 17 km away from Paraiso, Tabasco State. Its total depth is 4,000 meters with a water depth of 21 meters.

The field follows the same geological formations where the Xanab and Yaxche fields, easing its characterization and assessment, Trevino said.

Mulach has a light oil with an API close to 40. It has reserves above 100 million BOE with a potential production peak of up to 30,000 b/d.

Xikin and Esah are in the early development stage. Xikin is expected to produce 70,000 b/d, while Esah could produce 23,000 b/d.

Kinbe and Koban are in the evaluation phase and could produce 24,000 b/d and 46,000 b/d of crude oil, respectively.

- Daniel Rodriguez

#### **PIPELINE MAINTENANCE**

Start date	End date	Pipeline	Description
21-Ѕер	11-0ct	Cove Point	Cove Point - Potential Unavailability of Receipts at Loudoun
10-Mar	31-Dec	SOCAL	SOCAL Southern Zone restricted by 532 MMcf/d until further notice

# NATURAL GAS FUTURES

# NYMEX Nov gas settles at \$3.266/MMBtu on concerns ahead of winter

The NYMEX November natural gas futures contract settled at \$3.266/MMBtu Tuesday, driven largely by a lag in production and a large storage deficit ahead of the upcoming winter season.

The front-month contract settled 0.1 cent lower day on day and was trading between \$3.237/MMBtu and \$3.368/MMBtu. The contract last traded at these levels in late January.

"The market has taken into account the impressive gains [Monday] and is trading in the same region," said Daniel Myers, market analyst at Gelber & Associates. "Much of the increase seen lately is driven by the lead up to winter."

Shoulder-season maintenance projects have resulted in a lag in production since the start of October. Total US dry gas production is set to stand at 82.3 Bcf Tuesday, down 1.7 Bcf day on day, driven largely by the significant drops in Texas, the Southeast and the Northeast, according to S&P Global Platts Analytics data.

Some of the production drops could also be the effect of shut-in production due to Hurricane Michael, which is likely to make landfall in Florida on Wednesday before moving up the Atlantic Coast on Thursday and Friday.

Production is estimated to tick up over the next seven days and average 83.3 Bcf/d, the data showed.

"Above-normal temperatures and cooling demand extending deep into the shoulder season prevented large storage injections, which the market was expecting to fall," Myers said.

Current national gas stocks sit at 2.866 Tcf, a deficit of 17.5% to the five-year average of 3.473 Tcf, US Energy Information Administration data showed.

However, the current weather pattern will likely flip abruptly into cooler temperatures, with the National Weather Service calling for cooler-than-average temperatures across much of the US over the next six to 10 days, which could push up heating demand.

- <u>Veda Chowdhury</u>

# MONTH-AHEAD TEMPERATURE FORECAST MAP

November departure from average



Source: S&P Global Platts, Custom Weather

	Settlement	High	Low	+/-	Volume
Nov 2018	3.266	3.368	3.237	-0.001	112863
Dec 2018	3.298	3.384	3.273	0.009	29436
Jan 2019	3.361	3.425	3.335	0.028	19703
Feb 2019	3.262	3.310	3.237	0.026	5643
Mar 2019	3.061	3.082	3.032	0.022	8335
Apr 2019	2.747	2.761	2.727	0.005	6957
May 2019	2.701	2.710	2.683	0.001	1865
Jun 2019	2.728	2.736	2.710	0.000	920
Jul 2019	2.760	2.767	2.741	0.000	516
Aug 2019	2.760	2.765	2.741	0.000	718
Sep 2019	2.739	2.743	2.721	0.001	1198
Oct 2019	2.757	2.769	2.739	0.000	2257
Nov 2019	2.807	2.815	2.789	0.000	287
Dec 2019	2.937	2.938	2.918	0.002	527
Jan 2020	3.026	3.033	3.008	0.002	1078
Feb 2020	2.956	2.965	2.938	0.001	110
Mar 2020	2.816	2.842	2.804	0.002	110
Apr 2020	2.561	2.589	2.544	0.011	88
May 2020	2.526	2.564	2.509	0.012	46
Jun 2020	2.556	2.584	2.544	0.014	26
Jul 2020	2.587	2.614	2.576	0.016	10
Aug 2020	2.592	2.592	2.579	0.016	15
Sep 2020	2.577	2.578	2.571	0.015	4
Oct 2020	2.593	2.610	2.588	0.013	4
Nov 2020	2.648	2.665	2.642	0.008	2
Dec 2020	2.782	2.782	2.760	0.009	11
Jan 2021	2.887	2.887	2.887	0.009	0
Feb 2021	2.837	2.837	2.837	0.009	0
Mar 2021	2.734	2.734	2.734	0.006	0
Apr 2021	2.484	2.484	2.484	0.004	0
May 2021	2.455	2.455	2.455	0.004	0
Jun 2021	2.485	2.485	2.485	0.004	0
Jul 2021	2.518	2.518	2.518	0.005	0
Aug 2021	2.530	2.530	2.530	0.004	0
Sep 2021	2.522	2.484	2.484	0.004	0
Oct 2021	2.542	2.542	2.542	0.004	0
0					

NYMEX HENRY HUB GAS FUTURES CONTRACT, OCT 9

Contract data for Monday

Volume of contracts traded: 677,540

Front-months open interest:

Nov, 270,249; Dec, 177,002; Jan, 208.358

Total open interest: 1,663,451

Data is provided by a third-party vendor and is accurate as of 5:30 pm Eastern time.

# NYMEX PROMPT MONTH FUTURES CONTINUATION



Note: The entire wick of the candlestick depicts the high and low daily front-month Henry Hub futures price range. The body of the candlestick depicts the price range between the open and close, with a red candlestick indicating a close on the downside and a green candlestick indicating a close on the high end. Source: S&P Global Platts

#### US GAS STORAGE SURPLUS vs ROLLING 5-YEAR AVERAGE



# NORTHEAST GAS MARKETS

# Northeast spot gas price movements mixed for Wednesday flows

US Northeast natural gas spot prices saw mixed movement for Wednesday flows, with demand forecast to tick upward day on day.

S&P Global Platts Analytics projects total Northeast demand to be 15.4 Bcf Wednesday, a slight increase from Tuesday's 15.3 Bcf.

The Algonquin city-gates next-day cash price rose 7.5 cents on the day, reaching \$2.955/MMBtu, strengthening its cash basis slightly against the Henry Hub spot price, as the Henry Hub climbed 7 cents to \$3.365/MMBtu.

A majority of production areas saw prices shed day on day, with Dominion South sliding 3.5 cents to \$2.585/MMBtu, and Transco Leidy-Line dropping 3 cents to \$2.7/MMBtu.

Transco Leidy-Line has continued to pace at an above-average premium against Dominion South since the activation of the Atlantic Sunrise pipeline.

Aided by the activation of Atlantic Sunrise, Transco Leidy has averaged a 9.3-cent premium against Dominion South point over the past four trading sessions, an increase from the 1-cent premium averaged over the previous 10 trading sessions, according to S&P Global Platts data.

Production could see a boost in the region with the activation of Atlantic Sunrise and its 1.7 Bcf/d capacity. Month to date, total production in the Northeast has averaged 30.1 Bcf/d, a 23% increase from the 24.5 Bcf/d averaged this time last October.

As the market marches towards the winter months, East stocks could continue to cut into the current storage deficit to the five-year average. Platts Analytics projects the US Energy Information Administration to announce a 32-Bcf injection for the week that ended October 5, which would pace well above the 21 Bcf averaged over the past five years, according to EIA data.

The most recent eight- to 14-day weather outlook from the National Weather Service calls for a likelihood of cooler-than-average temperatures for much of the Northeast, which could bring more demand for heating into the region.

Platts Analytics projects total Northeast demand to average 17.1 Bcf/d over the next eight to 14 days, with Res/Com demand forecast to account for 8 Bcf/d of that total.

<u>— Eric Janssen</u>

#### NORTHEAST FORWARD BASIS



	09-Oct	08-0ct	Chg	MTD Avg.	MTD last year	Chg	09-0ct	08-0ct	Chg
Henry Hub	3.37	3.30	0.07	3.24	2.87	+0.38	3.27	3.27	0.00
Northeast region									
Algonquin CG	-0.41	-0.42	0.01	-0.05	-0.47	+0.42	0.56	0.60	-0.04
Iroquois Zn2	-0.07	-0.13	0.06	0.03	-0.17	+0.20	0.38	0.38	0.00
Tenn Zn6 Dlvd	0.02	0.04	-0.02	0.06	-0.58	+0.64	0.51	0.55	-0.04
Transco Zn 6 NY	-0.51	-0.50	-0.01	-0.46	-0.58	+0.11	-0.09	-0.09	-0.01
Transco Zn5 Dlvd	0.02	0.11	-0.09	0.07	-0.02	+0.09	0.07	0.05	0.01
Transco Zn6 Non-NY	-0.54	-0.48	-0.06	-0.48	-0.58	+0.10	-0.21	-0.22	0.01
TX Eastern M-3	-0.54	-0.50	-0.05	-1.10	-1.74	+0.64	-0.26	-0.26	0.00
Appalachia									
Col Gas Appal	-0.33	-0.31	-0.02	-0.37	-0.28	-0.10	-0.29	-0.29	0.00
Dominion N Pt	-0.77	-0.65	-0.12	-1.40	-2.18	+0.78	-0.59	-0.60	0.01
Dominion S Pt	-0.78	-0.68	-0.11	-1.40	-2.19	+0.78	-0.44	-0.45	0.01
Lebanon Hub	-0.19	-0.25	0.06	-0.28	-2.09	+1.81	-0.18	-0.20	0.03
Millennium East Receipts	-0.71	-0.59	-0.12	-1.38	-2.18	+0.80	-0.35	-0.41	0.06
Tenn Zn4-200 Leg	-0.30	-0.28	-0.02	-0.31	-1.18	+0.87	-0.24	-0.25	0.01
Tennessee zone 4-300 leg	-0.74	-0.68	-0.07	-1.46	-2.20	+0.74	-0.48	-0.50	0.01
Texas Eastern M-2 receipts	-0.79	-0.73	-0.06	-1.43	-2.20	+0.77	-0.45	-0.47	0.01
Transco Leidy Line receipts	-0.67	-0.58	-0.09	-1.37	-2.14	+0.77	-0.39	-0.41	0.03
Other locations									
Dracut MA	_	_	_	_	_	_	0.87	0.92	-0.04
Iroquois Receipts	-0.09	-0.10	0.02	-0.01	-0.24	+0.23	0.08	0.08	0.00
Niagara	-0.31	-0.25	-0.06	-0.20	-1.52	+1.32	-0.02	-0.07	0.05
Source: Platts M2M data									

# NORTHEAST DEMAND FORECAST



#### **APPALACHIA FORWARD BASIS**

-0.25 -0.50 -0.50 -0.75 -1.00 Nov-18 May-19 Nov-19 May-20 Nov-20 May-21 Nov-21 Source: S&P Global Platts

# NORTHEAST SPOT AND FORWARD BASIS (\$/MMBtu)

Spot basis

Prompt forward basis

# SOUTHEAST GAS MARKETS

# Southeast prices rise ahead of expected Hurricane Michael landfall

With Hurricane Michael looming in the Gulf of Mexico, Southeast natural gas pricing hubs saw significant increases in trade Tuesday.

Hurricane Michael is expected to make landfall across the Florida Panhandle Wednesday, according to the National Hurricane Center, which could impact natural gas flows.

The US natural gas benchmark, Henry Hub, gained 7 cents in trading Tuesday, changing hands at \$3.365/MMBtu.

Recent bullish movements continue to set new nine-month highs at this benchmark and other Southeast pricing locations.

However, a pricing hub closer to the storm's expected path, Florida Gas Transmission Zone 3, had a 3-cent decrease, trading at \$3.495/MMBtu.

Another location that saw losses in trading was Houston Ship Channel, which decreased 2.50 cents to trade at \$3.43/MMBtu.

Demand across the rest of the Southeast still showed strength, with temperatures forecast to be 8 degrees Fahrenheit above normal Tuesday and Wednesday, according to S&P Global Platts Analytics data.

Southeast total demand is expected to average 21.37 Bcf/d on Tuesday and Wednesday.

On the supply side, total offshore Gulf Coast production has decreased by more than 1 Bcf/d, with some of this from shut-ins from the impending hurricane. Platts Analytics data shows Tuesday's production at 2.39 Bcf/d. Last Wednesday, production stood at 3.49 Bcf/d.

The demand that is still present across the unaffected regions in the Southeast and East Texas kept prices elevated at other natural gas pricing locations.

Columbia Gulf Mainline gained 2 cents to trade at \$3.145/MMBtu, also setting new nine-month highs.

Transco Zone 3 and 4 had similar gains of 2 cents and 2.50 cents to trade at \$3.315/MMBtu and \$3.345/MMBtu, respectively.

ANR, Louisiana had some of the strongest gains in the region, rising 13.5 cents, crossing above \$3/MMBtu to trade at \$3.115/MMBtu.

With nuclear generation in the region still undergoing outages for maintenance, increases in replacement natural gas generation are not likely.

#### SOUTHEAST FORWARD BASIS



			Spot	t basis			Prompt	forward	basis
	09-0ct	08-0ct	Chg	MTD Avg.	MTD last year	Chg	09-0ct	08-0ct	Chg
Henry Hub	3.37	3.30	0.07	3.24	2.87	+0.38	3.27	3.27	0.00
Southeast									
ANR LA	-0.25	-0.32	0.07	-0.28	-0.13	-0.16	-0.16	-0.17	0.00
Col Gulf LA	-0.11	-0.07	-0.04	-0.11	-0.10	-0.01	-0.08	-0.08	0.00
Col Gulf-Mainline	-0.22	-0.17	-0.05	-0.23	-0.15	-0.08	-0.18	-0.18	0.01
FL Gas Zn1	-0.09	-0.04	-0.05	-0.07	-0.06	-0.01	0.01	0.01	0.00
FL Gas Zn2	-0.02	0.01	-0.03	-0.02	-0.07	+0.04	0.02	0.02	0.00
FL Gas Zn3	0.13	0.23	-0.10	0.13	-0.02	+0.15	0.06	0.06	0.00
Florida CG	_	_	_	0.67	0.20	+0.47	0.35	0.35	0.00
SoNat LA	-0.05	-0.01	-0.04	-0.02	-0.07	+0.05	-0.06	-0.06	0.00
Tenn LA 500 Leg	-0.04	-0.01	-0.03	-0.02	-0.05	+0.03	-0.06	-0.06	0.00
Tenn LA 800 Leg	-0.10	-0.07	-0.03	-0.11	-0.11	+0.00	-0.08	-0.07	-0.01
TETCO-M1	-0.30	-0.27	-0.04	-0.21	-0.08	-0.12	-0.06	-0.06	0.00
Texas Gas Zn SL	-0.19	-0.13	-0.06	-0.18	-0.14	-0.04	0.00	0.00	0.00
Texas Gas Zn1	-0.19	-0.15	-0.04	-0.20	-0.15	-0.06	-0.19	-0.19	-0.01
Transco Zn2	-0.07	-0.07	0.00	-0.06	-0.06	+0.01	-0.05	-0.05	0.00
Transco Zn3	-0.05	_	-0.05	-0.04	-0.07	+0.02	-0.06	-0.06	0.00
Transco Zn4	-0.02	0.03	-0.05	0.00	-0.06	+0.06	-0.04	-0.04	0.00
Trunkline E LA	-0.15	-0.09	-0.06	-0.12	-0.14	+0.02	-0.12	-0.12	0.01
Trunkline WLA	-0.11	-0.11	0.00	-0.11	-	_	-0.05	-0.05	0.00
Tx Eastern E LA	-0.18	-0.24	0.06	-0.20	-0.08	-0.11	-0.10	-0.10	0.00
TX Eastern W LA	-0.07	-0.02	-0.05	-0.08	-0.07	-0.01	-0.09	-0.09	0.00
East & South Texas									

SOUTHEAST SPOT AND FORWARD BASIS (\$/MMBtu)

East & South Texas									
Agua Dulce	—	_	—	0.12	—	_	0.12	0.12	-0.01
Carthage Hub	-0.18	-0.20	0.02	-0.20	-0.10	-0.10	-0.19	-0.18	0.00
Houston Ship Channel	0.07	0.16	-0.10	0.15	0.04	+0.11	0.12	0.13	-0.01
Katy	0.06	0.13	-0.07	0.11	0.04	+0.07	0.12	0.13	-0.01
NGPL S TX	-0.02	—	-0.02	-0.03	-0.04	+0.01	0.11	0.11	-0.01
NGPL Texok Zn	-0.19	-0.16	-0.03	-0.20	-0.17	-0.04	-0.14	-0.15	0.01
Tenn Zn0	-0.19	-0.18	-0.02	-0.19	-0.16	-0.03	-0.10	-0.10	-0.01
Transco Zn1	-0.02	-0.03	0.01	-0.05	-0.04	+0.00	-0.05	-0.04	0.00
TX Eastern E Tx	-0.12	-0.10	-0.02	-0.16	-0.10	-0.06	0.00	0.01	0.00
TX Eastern S TX	0.01	0.08	-0.07	0.01	-0.02	+0.04	0.05	0.05	0.00

Source: Platts M2M data

# SOUTHEAST & TEXAS DEMAND FORECAST



#### EAST AND SOUTH TEXAS FORWARD BASIS

(\$/MMBtu) — Agua Dulce — Houston Ship Chnl — NGPL Texok Zn — TX Eastn S TX



<u>— Jason Lord</u>

# **CENTRAL GAS MARKETS**

# Cash prices in Central region continue to gain on rising demand

Cash prices in the Central region continued to rise Tuesday, as a cold snap forecast in the week is pushing up demand.

In the Upper Midwest, natural gas settled at \$3.270/MMBtu at Nipsco, up 13 cents on day, while PGLC settled at \$3.265/MMBtu, a rise of 12 cents.

Prices moved in the Midcontinent production region as well, with Enable Gas, East settling at \$3.075/MMBtu, up 3.5 cents from the day prior, while Panhandle rose 6.5 cents and settled at \$2.940/MMBtu.

The National Weather Service calls for a likelihood of low temperature of 45 degrees Fahrenheit in Chicago Wednesday, slightly below the five-year average of 48 degrees for the same day. Detroit has a similar forecast as well, which is likely driving the upward movement in prices today.

Residential and commercial demand in the region is projected to rise sharply and average 13.5 Bcf/d over the next seven days, according to S&P Global Platts Analytics, as temperatures pace more than 10 degrees below seasonal norms, due to the impending cold snap. Heating demand averaged 10.1 Bcf/d in the past week.

The increase in demand is likely to weaken injections over the next several days. Mild temperatures led to some strong inventory build since the start of October, with storage averaging 5.288 Bcf/d, up about 1 Bcf from the year-ago level of 4.226 Bcf/d, according to Platts Analytics. A part of the boost in injections could be likely due to maintenance on ANR's system in the Southeast, which may be limiting supplies to downstream destinations.

Production is down slightly in the region, likely due to shoulder season maintenance projects. Platts Analytics projects production to stand at 8.565 Bcf/d Tuesday, down 1% on day but still at elevated levels compared to last year.

In the month so far, production averaged 8.595 Bcf/d, up nearly 1 Bcf from the year ago level of 7.7 Bcf/d.

The futures market continued to strengthen Tuesday. The Chicago city-gates winter strip closed at a 16.25 cents/MMBtu premium to Henry Hub, a rise of 2.95 cents, while the Michcon city-gates winter strip closed at a 3 cents/MMBtu discount to Henry Hub, up 3.85 cents. — Veda Chowdhury

MIDWEST FORWARD BASIS



#### CENTRAL SPOT AND FORWARD BASIS (\$/MMBtu)

		-								
		Spot basis						Prompt forward basis		
	09-0ct	08-0ct	Chg	MTD Avg.	MTD last year	Chg	09-0ct	08-0ct	Chg	
Henry Hub	3.37	3.30	0.07	3.24	2.87	+0.38	3.27	3.27	0.00	
Midwest/East Canada										
ANR ML 7	-	-	-	-0.17	-0.20	+0.03	-0.05	-0.15	0.10	
Chicago CG	-0.10	-0.14	0.05	-0.18	-0.18	-0.01	-0.04	-0.12	0.08	
Consumers Energy CG	-0.07	-0.06	-0.01	-0.10	-0.13	+0.03	-0.03	-0.06	0.03	
Dawn Ontario	-0.06	-0.06	0.00	-0.07	-0.14	+0.08	0.01	-0.04	0.05	
Mich Con CG	-0.09	-0.06	-0.04	-0.09	-0.14	+0.05	-0.03	-0.06	0.03	
Northern Ventura	-0.10	-0.23	0.13	-0.22	-0.27	+0.05	-0.02	-0.13	0.12	
Viking-Emerson	0.01	-0.33	0.33	-0.24	-0.92	+0.68	-0.13	-0.13	0.00	
Midcontinent										
ANR OK	-0.42	-0.38	-0.04	-0.54	-0.40	-0.14	-0.56	-0.65	0.09	
Enable Gas East	-0.29	-0.26	-0.04	-0.27	-0.23	-0.03	-0.25	-0.27	0.02	
NGPL Midcontinent	-0.58	-0.58	-0.01	-0.67	-0.33	-0.34	-0.63	-0.69	0.07	
Northern NG Demarc	-0.06	-0.21	0.15	-0.24	-0.26	+0.02	-0.15	-0.25	0.10	
Oneok OK	-1.41	-1.46	0.06	-1.42	-0.46	-0.96	-1.41	-1.40	-0.01	
Panhandle TX-OK	-0.43	-0.42	-0.01	-0.64	-0.40	-0.23	-0.59	-0.68	0.09	
Southern Star TxOkKs	-0.47	-0.75	0.28	-0.65	-0.41	-0.25	-0.57	-0.66	0.09	
Source: Platts M2M data										

# MIDWEST & MIDCONTINENT DEMAND FORECAST



#### MIDCONTINENT FORWARD BASIS

(\$/MMBtu) -NGPL Midcon - Northern NG Demarc - Panhandle TX-OK - ANR OK 0.5



# WEST GAS MARKETS

# SoCal city-gates recovers from Monday spike, drops 56 cents

Displaying its usual volatility, Southern California city-gates fell sharply Tuesday after a one-day spike to open the week.

The pricing point was trading at \$3.255/MMBtu after shedding 57 cents.

Originally, SoCal city-gates rose \$1.06 to \$3.825/MMBtu on the first day of the workweek on the back of a maintenance notice for the company's Southern Zone.

That section has seen ongoing maintenance since March, which has decreased capacity for several months. On Monday, a Southern California Gas notice said flows through the Southern Zone would be limited to 610 MMcf/d, some 119 MMcf/d below capacity.

Prices were moving the opposite way Tuesday as market conditions stabilized.

Demand in the SoCal Gas system slipped 26 MMcf to 1.994 Bcf Tuesday, according to S&P Global Platts Analytics. That 1% decline in consumption put demand below 2 Bcf/d for the third time in four days.

Overall, SoCal Gas demand has been trailing behind 2017. So far this month, the company has averaged 2.065 Bcf/d in need, while last year that figure was 2.201 Bcf/d.

North of the border, a pair of one-day maintenance projects were slated to shut in gas production in Alberta, which depressed prices there.

At the AECO location, gas was moving at C\$1.855/Gj after falling 49.5 Canadian cents.

Both maintenance projects were scheduled to be conducted Wednesday and would completely shut down the facilities, taking about 600 MMcf/d off line.

In one, the McMahon Plant, which has averaged volumes of 540 MMcf/d over the last week, would be shut in, while the other repair work was being done at the Aitken Creek Plant.

In the futures market, the SoCal Gas contracts were climbing heading into the winter months.

The November contract was trading at Henry Hub basis minus 36 cents/MMBtu, up 2 cents Tuesday.

December, however, was up 5.75 cents to Henry Hub plus \$1.55/ MMBtu and January rose 9.5 cents to Henry Hub plus \$1.50/MMBtu.

<u> — John DeLapp</u>

#### WEST SUPPLY LOCATIONS FORWARD BASIS



WEST SPOT AND F	ORWARD BASIS	(\$/MMBtu)
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	-		(†								
			Spot	Spot basis			Prompt forward ba				
	09-0ct	08-0ct	Chg	MTD Avg.	MTD last year	r Chg	09-0ct	08-0ct	Chg		
Henry Hub	3.37	3.30	0.07	3.24	2.87	+0.38	3.27	3.27	0.00		
Northwest											
GTN Kingsgate	-0.57	-0.48	-0.09	-0.65	-0.65	+0.01	-0.72	-0.72	0.00		
Northwest Sumas	-0.40	-0.58	0.18	-0.55	-0.45	-0.10	-0.43	-0.45	0.02		
Northwest Stanfield	-0.40	-0.35	-0.05	-0.54	-0.46	-0.09	-0.51	-0.51	0.00		
Rockies											
Cheyenne Hub	-0.40	-0.37	-0.04	-0.58	-0.43	-0.15	-0.73	-0.72	-0.01		
CIG Rockies	-0.42	-0.38	-0.04	-0.61	-0.44	-0.16	-0.73	-0.72	-0.01		
Kern River Opal	-0.41	-0.36	-0.05	-0.56	-0.40	-0.16	-0.54	-0.53	-0.01		
NW WY Pool	-0.40	-0.35	-0.06	-0.54	-0.46	-0.08	-0.54	-0.53	-0.01		
Questar Rky	-0.52	-0.50	-0.02	-0.64	-0.45	-0.19	-0.59	-0.58	-0.01		
Southwest											
El Paso Permian	-1.79	-1.79	0.00	-1.97	-0.54	-1.43	-1.86	-1.92	0.06		
El Paso San Juan	-1.00	-1.14	0.14	-1.52	-0.54	-0.98	-1.03	-1.09	0.06		
Kern River Dlvd	-0.24	-0.21	-0.03	-0.35	-0.29	-0.06	-0.34	-0.36	0.02		
PG&E CG	0.21	0.19	0.02	0.21	0.22	-0.01	0.21	0.23	-0.02		
PG&E Malin	-0.38	-0.35	-0.03	-0.54	-0.35	-0.19	-0.46	-0.46	0.00		
PG&E South	-0.76	-0.96	0.20	-1.30	-0.42	-0.88	-0.95	-1.01	0.06		
SoCal Gas	-0.45	-0.49	0.04	-0.65	-0.30	-0.35	-0.36	-0.38	0.02		
SoCal Gas Citygate	-0.11	0.53	-0.64	0.39	0.16	+0.24	1.24	1.41	-0.17		
Transwestern Permian	-1.85	-1.87	0.02	-1.99	-0.53	-1.46	-1.76	-1.82	0.06		
Waha	-1.79	-1.85	0.07	-1.97	-0.47	-1.50	-1.92	-1.99	0.07		
West Canada											
AECO-C	-1.51	-0.95	-0.57	-0.93	-2.41	+1.48	-1.50	-1.44	-0.06		

Source: Platts M2M data

#### SOUTHWEST, NORTHWEST, ROCKIES DEMAND FORECAST



#### WEST DEMAND LOCATIONS FORWARD BASIS



# TOTAL NET PIPELINE FLOWS BY REGION (MMcf/d\*)

	08-0ct	09-0ct	Change	MTD avg.	MTD last year	Change
Supply regions – ne	t pipeline outflo	ws				
Texas	10,140	10,322	-182	10,397	8,617	1,780
West Canada	8,790	8,895	-105	8,691	8,290	401
Rockies	6,748	6,321	427	6,638	6,611	27
Midcontinent	3,676	3,811	-135	3,676	3,144	532
Northeast	11,173	11,162	11	10,721	7,032	3,689
Demand regions – r	net pipeline inflo	ws				
Southwest	4,250	4,050	-200	4,101	4,255	-154
Southeast	11,731	11,847	116	11,721	8,978	2,743
Northwest	2,318	2,160	-158	2,103	1,657	446
Midwest	13,741	13,799	58	13,625	11,578	2,047
East Canada	3,584	3,656	72	3,556	2,977	579

Net pipeline flows by region are the aggregated total interstate pipeline flows across the regional bor der. Net supply regions are those that historically have had more supply than demand within the region and have been net suppliers of gas to other regions. Net demand regions historically have had more demand than supply and have been net receivers of pipeline gas from other regions.

#### **HENRY HUB/NYMEX SPREAD**



# S&P Global

Platts

# **GAS DAILY**

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#### **GAS DAILY SUPPLEMENTS**

To access the latest issue of the Gas Daily supplements, click below. Gas Daily Market Fundamentals (pdf)

Gas Daily Market Fundamentals Data (xls)

Gas Daily Monthly Price Guide (pdf)

\*Links require PMC login. For login help, contact support platts.com.

#### SHALE VALUE CHAIN ASSESSMENTS, OCT 9

	\$/MMBtu	+/-
Gulf Coast ethane fractionation spread	3.224	-0.370
Gulf Coast E/P mix fractionation spread	2.472	0.419
E/P mix Midcontinent to Rockies fractionation spread	-0.995	0.078
E/P mix Midcontinent fractionation spread	-0.830	0.048
National raw NGL basket price	10.132	-0.195
National composite fractionation spread	6.702	-0.170

The methodology for these assessments is available at: www.platts.com/IM.Platts.Content/MethodologyReferences/MethodologySpecs/shale-value-chain.pdf

#### PLATTS OIL PRICES, OCT 9

	(\$/b)	(\$/MMBtu)	
Gulf Coast spot			
1% Resid (1)	75.92-75.94	12.15	
HSFO (1)	73.42-73.44	11.75	
Crude spot			
WTI (Nov) (2)	74.95-74.97	12.92	
New York spot			
No.2 (1)	96.42-96.47	15.43	
0.3% Resid LP (3)	84.93-84.95	13.59	
0.3% Resid HP (3)	84.93-84.95	13.59	
0.7% Resid (3)	76.43-76.45	12.23	
1% Resid (3)	73.53-73.55	11.77	

1= barge delivery; 2= pipeline delivery; 3= cargo delivery

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### SUBSCRIBER NOTES

#### End of year publishing schedule for Platts global price reporting

As previously announced, Platts price reporting globally will be closed Monday, December 24, 2018, Tuesday, December 25, 2018, Monday, December 31, 2018 and Tuesday January 1, 2019 and there will be no publications or assessments published on those days.

Furthermore, all weekly petrochemical price assessments and publications will be suspended 24 December 2018-1 January 2019 inclusive. Daily assessments; aromatics, gasoline components, olefins, polymers and intermediates, will be published on PCA during normal publishing schedules.

Normal publishing schedules will resume on Wednesday, December 26 in Asia and the Americas, and on Thursday, December 27 in Europe. Normal schedules will resume globally on Wednesday, January 2, 2019.

For full details of Platts' publishing schedule and services affected, refer to <a href="http://www.spglobal.com">www.spglobal.com</a>

Please send any comments or questions to pricegroup@spglobal.com

For written comments, please provide a clear indication if comments are not intended for publication by Platts for public viewing. Platts will consider all comments received and will make comments not marked as confidential available upon request.

#### Platts proposes to include basis trades in Florida city-gates daily indices

Following a period of market consultation, S&P Global Platts proposes to include basis trades in the preliminary and final daily indices for the Platts location Florida city-gates. The only basis trades that would be included would be trades priced as a differential to Florida Gas, zone 3. The basis trades would be converted to fixed price trades by adding the price differential to the Florida Gas, zone 3 index price. As defined by Platts natural gas methodology, Florida city-gates reflects deliveries off of Florida Gas Transmission to all city-gates in the Florida market, stretching from the Florida Panhandle to southern Florida.

#### Please send any comments to the listings above to

americasgaspricing@spglobal.com and pricegroup@spglobal.com by October 19. For written comments, please provide a clear indication if comments are not intended for publication by Platts for public viewing. Platts will consider all comments received and will make comments not marked as confidential available upon request.

#### Platts seeks feedback on Northwest, S. of Green River natural gas methodology

S&P Global Platts is seeking market participation in its review of the methodology for the Northwest, S. of Green River daily natural gas index.

At Northwest, S. of Green River, Platts has observed that Ignacio Plant, which is included in the existing index, is trading at a steady discount to other transactions done at other locations in the index, notably Northwest, Rocky Mountain Pool.

Please send any comments to <u>AmericasGasPricing@spglobal.com</u> and <u>pricegroup@spglobal.com</u>.

#### Platts proposes new Platts – ICE Natural Gas indices

S&P Global Platts is proposing to launch new regional and national daily natural gas indices based on its current Gas Daily Averages (GDA) published for North American Platts locations. The GDA is based on the volume-weighted average of all transactions reported to Platts by market participants and trades done on the Intercontinental Exchange (ICE).

Platts would publish a North America index as well as Northeast, South, Midwest, and West region indices and proposes the following methodology:

Platts would collect interstate pipeline natural gas flows from the Intraday 3 pipeline nomination cycle data to determine locations, location weightings, and region weightings. Volumes would be compiled by location according to the location definitions in the Platts North American Natural Gas methodology guide.

a. Locations would be selected in each region with the highest average daily nomination volume in the prior winter (Nov-Mar) or summer (Apr-Oct) seasons. The top 5 locations in each region would remain constant for the entirety of the season. To ensure adequate liquidity, each location must also have a minimum mean daily deal count of 20 trades over the prior winter or summer season to be selected.

b. The region indices would reflect weightings of the 5 selected locations based on the average daily nomination volume in the prior winter or summer season. The location prices would represent Platts final daily indices, published around 17:00hrs Central time according to the Platts daily gas survey calendar. The location weightings would remain constant for the entirety of the season. No location would have a weighting greater than twice the size of the direct average of the five points, i.e. 40%. Should a location need to be capped, any allocation above 40% would be divided equally over the remaining locations in that region.

c. The North America index would reflect weightings of the 4 region indices based on each region's average daily nomination volume in the prior winter or summer season. The region weightings remain constant for the entirety of the season. No region would have a weighting greater than twice the size of the simple average of the four regions, i.e. 50%. Should a region need to be capped, any allocation above 50% would be divided equally over the remaining regions.

Platts would announce the trading locations, location weightings, and region weightings in April for the following winter and in November for the following summer. Platts will accept comments on the above methodology through October 12, 2018.

Please send any comments to <u>AmericasGasPricing@spglobal.com</u> and <u>pricegroup@spglobal.com</u>. For written comments, please provide a clear indication if comments are not intended for publication by Platts for public viewing. Platts will consider all comments received and will make comments not marked as confidential available upon request.

#### Platts seeks feedback on El Paso, Permian natural gas methodology

S&P Global Platts is seeking market participation in its review of methodology for the El Paso, Permian daily and monthly natural gas indices. Due to constraints in the region, Platts has observed price divergence in the pooling areas that make up the El Paso, Permian index. El Paso, Plains pool has traded at a notable premium to the El Paso, Waha and El Paso, Keystone pools.

Please send any comments to <u>AmericasGasPricing@spglobal.com</u> and <u>pricegroup@spglobal.com</u>.

# FINAL DAILY GAS INDICES - ICE LOCATIONS (\$/MMBtu)

FINAL DAILY GAS INDICES – ICE LOCATIONS (\$/MMBtu)								D		
Trade date: 09-Oct								Powered bv	100	
Flow date(s): 10-0ct			Daily	Absolute	Absolute	Common	Common	Юу		
Location	Symbol	Index	Change	Low	High	Low	High	Volume	Deals	
Northeast										
ICE Algonquin CG (Excl. J and G Lateral deliveries)	JAAAA21	2.925	+0.120	2.880	3.000	2.895	2.955	88	20	
ICE Algonquin Citygates (Excl. J Lateral deliveries)	JAAAB21	_	_	_	_	_	_	_	_	
ICE Algonquin, Millennium-Ramapo receipts	JAAHF00	2.800	0.250	2.800	2.800	2.800	2.800	5	2	
ICE Algonquin, TGP-Mahwah receipts	JAAHG00	_	_	_	_	_	_	_	_	
ICE Dominion Energy, Cove Point, on system delivery	JAAHM21	_	_	_	_	_	_		_	
ICE Iroquois, zone 1 (delivered excl. Waddington)	JAABS21		_							
ICE Iroquois, zone 2 (non-Hunts Point/Eastchester Lateral)	JAABT21	3.270	+0.100	3.210	3.360	3.235	3.310	69	18	
ICE Iroquois, zone 2 Hunts Point/Eastchester Lateral	JAABU21									
ICE Maritimes, Hubline and Beverly Salem ICE Maritimes and Northeast Pipeline US (buyer's choice delivered)	JAACB21 JAACC21									
ICE PNGTS (buyer's choice delivered)	JAACC21 JAADH21									
ICE Stagecoach Marcellus Hub	JAAEN21	_	_	_	_	_			_	
ICE Tennessee, zone 5, 200 Line, delivered downstream of station 2		3.250	+0.050	3.250	3.250	3.250	3.250	10	2	
ICE Texas Eastern, Manhattan Lateral (delivered)	JAAEW21	_	_	_	_	_	_		_	
ICE Transco, zone 6 (non-NY north mainline)	JAAEZ21	_		_	_	_	_	_	_	
ICE Transco, zone 6 station 210 Pool	JAAFA21	2.820	+0.000	2.770	2.880	2.795	2.850	415	92	
Appalachia										
ICE Clarington Tennessee	JAAFI21	_	_	_	_	_	_	_	_	
ICE Columbia Gas, A04 Pool	JAAAU21	_	—	—	—	—	—	_	_	
ICE Columbia Gas, A06 Pool	JAAAV21	_	_	_	_	—	—	_	_	
ICE Columbia Gas, Segmentation Pool	JAAAW21	_	_	_	_	_	_	_		
ICE Millennium Pipeline (buyers' choice delivered)	JAAHA21	_	_	_	_	_	—			
ICE Tennessee, zone 4, station 219 Pool	JAAET21	3.075	+0.055	3.030	3.090	3.060	3.090	211	50	
ICE Texas Eastern, M2 Zone (delivered)	JAAEV21			_						
Midcontinent										
ICE Bennington, Oklahoma (buyers' choice)	JAAHK21		_							
ICE Enable Gas, Flex Pool only	JAABE21	3.080	+0.025	3.080	3.085	3.080	3.080	83	14	
ICE Enable Gas, North Pool only	JAABF21	_	_	_	_		_			
ICE Enable Gas, West (W1 or W2 as mutually agreed) ICE Enable Gas, West Pool	JAABI21 JAABJ21									
ICE NGPL, Gulf Coast Mainline Pool	JAABJ21 JAACI21	3.165	+0.085	3.165	3.175	3.165	3.170	50	6	
ICE NGPL, Mid-Continent Storage PIN	JAAC021									
ICE Northern Natural, Mid 13 - 16A Pool	JAACW21			_	_	_	_			
ICE Northern Natural, Mid 1-7 Pool	JAACX21	1.600	+0.245	1.600	1.600	1.600	1.600	10	2	
ICE Northern Natural, Mid 8 -12 Pool	JAACY21		_	_	_	_			_	
ICE Salt Plains Storage (buyers' choice)	JAADV21	—	_	—	—	—	—		_	
ICE Salt Plains Storage (in-ground transfer only)	JAADW21	_	_	_	_	_	_		_	
Upper Midwest										
ICE Alliance, Chicago Exchange Hub	JAAAC21	3.250	+0.095	3.230	3.270	3.240	3.260	706	92	
ICE Alliance, ANR Interconnect	JAAAD21	_	_	_	_	_	_		_	
ICE Alliance, Midwestern Interconnect	JAAFX21	_	_	_	_	_	—			
ICE Alliance, NGPL Interconnect	JAAAF21		_	_	_	_	_		_	
ICE Alliance, Nicor Interconnect	JAAAG21			_						
ICE Alliance, Vector Interconnect ICE ANR, Joliet Hub CDP	JAAAH21 JAAAK21				_					
ICE Bluewater Gas Storage	JAAAN21 JAAAN21								_	
ICE Great Lakes Gas, St. Clair	JAABM21	_	_	_	_	_	_	_	_	
ICE Guardian, Guardian Hub	JAABN21	_	_	_	_	_	_			
ICE NGPL, Amarillo Pooling PIN	JAACG21	3.050	+0.045	3.040	3.050	3.050	3.050	79	14	
ICE NGPL, Amarillo Storage PIN	JAACH21	_	_	_	_	_	_		_	
ICE NGPL, Iowa-Illinois GC Pool	JAAHN21	_	_	_	_	_	_	_	_	
ICE NGPL, Iowa-Illinois AM Pool	JAAHO21	_	_	_	_	_	_	_	_	
ICE NGPL, Iowa-Illinois GC Storage	JAAHP21	3.220		3.220	3.220	3.220	3.220	40	4	
ICE NGPL, Iowa-Illinois AM Storage	JAAHQ21	_	_	_	_	_	_	_		
ICE NGPL, Mid-American Citygate	JAACN21				-					
ICE Northern Border, Harper Transfer Point	JAACS21	3.310	+0.295	3.310	3.310	3.310	3.310	20	2	
ICE Northern Border, Nicor Interconnect ICE Northern Border, Vector Interconnect	JAACT21 JAACU21	3.270	+0.155	3.270	3.270	3.270	3.270	17	4	
ICE Northern Border, Will County	JAACU21 JAACV21	3.270	+0.155	3.270	3.270	3.270	3.270	110	14	
ICE REX (East), delivered into ANR	JAACV21 JAADK21	3.120	+0.075	3.040	3.200	3.080	3.160	479	102	

# FINAL DAILY GAS INDICES - ICE LOCATIONS (\$/MMBtu)

Trade date: 09-Oct	-								
Flow date(s): 10-0ct			Daily	Absolute	Absolute	Common	Common		
Location	Symbol	Index	Change	Low	High	Low	High	Volume	Deals
Upper Midwest					5		5		
ICE REX (East), delivered into Lebanon Hub	JAAHC21	_	_	_	_	_	_	_	
ICE REX (East), delivered into Midwestern Gas	JAADL21	3.170	+0.045	3.140	3.200	3.155	3.185	204	36
ICE REX (East), delivered into NGPL	JAADM21	3.195	+0.070	3.160	3.230	3.180	3.215	657	96
ICE REX (East), delivered into Panhandle	JAADN21	3.180	+0.120	3.170	3.190	3.175	3.185	37	6
ICE REX (East), delivered into Trunkline	JAADO21			_	_	_	_		_
ICE REX (West), delivered into ANR	JAADP21			_	_	_			
ICE REX (West), delivered into Northern Natural ICE REX (West), delivered into Panhandle	JAADQ21						_		
ICE REX, zone 3 receipts	JAADR21 JAAHS21								
ICE Rover, delivered into ANR	JAAHS21 JAAHI21	3.150	0.450	3.150	3.150	3.150	3.150	20	2
ICE Rover, delivered into Panhandle	JAAHI21	3.145	0.225	3.140	3.160	3.140	3.150	38	6
ICE Rover, receipts	JAAHR21								
East Texas									
ICE Agua Dulce Hub	JAAGI21	_	_	_	_	_	_	_	
ICE Atmos, zone 3, receipts	JAAGI21 JAAAL21	3.155	+0.105	3.140	3.180	3.145	3.165	67	24
ICE Carthage Hub Tailgate	JAAAL21 JAAAQ21	3.190	+0.105	3.140	3.200	3.145	3.105	62	8
ICE ENT, STX Map	JAAAQ21 JAAHT21		+0.090	5.160	3.200				
ICE ETC, Cleburne	JAAHH00	_	_	_	_	_	_	_	_
ICE ETC, Maypearl	JAABK21	3.190	+0.090	3.080	3.200	3.160	3.200	226	10
ICE Golden Triangle Storage & Hub	JAABL21	_	_	_	_	_	_		_
ICE Gulf South, Pool Area #16	JAABP21	3.170	+0.065	3.150	3.180	3.165	3.180	131	20
ICE HPL, East Texas Pool	JAABR21	_	_	_	_	_	_		_
ICE Katy, ENSTOR Pool (excl. Kinder Morgan Texas)	JAABW21	3.425	+0.145	3.420	3.430	3.425	3.430	38	8
ICE Katy, Lonestar (warranted as Intrastate)	JAABX21	_	_	_	_	_	_	_	_
ICE Katy, Lonestar Interstate	JAABY21	_		_	_	_	_	_	
ICE Katy, Oasis Pipeline	JAABZ21	3.420	+0.000	3.400	3.430	3.415	3.430	832	88
ICE Moss Bluff Interconnect (buyers' choice delivered)	JAACD21	3.395	+0.000	3.390	3.410	3.390	3.400	81	18
ICE Moss Bluff Storage (in-ground transfers only)	JAACE21	_	_	_	_	_	_	_	
ICE NGPL, TXOK East Pool	JAACP21	3.180	+0.045	3.165	3.190	3.175	3.185	871	106
ICE NGPL, TXOK West Pool	JAACQ21	-				-			
ICE NorTex, Tolar Hub ICE Tennessee, zone 0 North	JAACR21	3.160	+0.140	3.120	3.210	3.140	3.185	340	56
ICE Tennessee, zone 0 South	JAAEP21 JAAEQ21	3.175	+0.055	3.160	3.210	3.165	3.190	188	40
ICE Tres Palacios Hub - Injection	JAAEQ21 JAAFE21	3.280	+0.005	3.270	3.310	3.270	3.290	79	12
ICE Tres Palacios Hub - Withdrawal	JAAFE21 JAAFF21	3.420	+0.000	3.390	3.420	3.415	3.420	65	10
Louisiana/Southeast	3661122	0.120	0.020	0.000	0.120	0.110	0.120		10
ICE ANR, SE Transmission Pool	JAAAI21	3.115	10.125	3.045	3.170	3.085	3.145	163	30
ICE ANR, SE Gathering Pool	JAAAI21 JAAAJ21		+0.135			3.085			
ICE Bobcat Interconnect (buyers' choice delivered)	JAAAJ21 JAAA021								
ICE Bobcat Storage (in-ground transfer only)	JAAA021 JAAAP21	_		_	_	_	_	_	
ICE Egan Interconnect (buyers' choice delivered)	JAAAZ21		_	_	_	_	_	_	_
ICE Egan Storage (in-ground transfer only)	JAABA21	_	_	_	_	_	_	_	_
ICE Enable Gas, Perryville Hub	JAABG21	_		_	_	_			_
ICE Enable Gas, South Pool only	JAABH21			_	_	_	_	_	_
ICE Gulf South, Perryville Exchange Point	JAABO21	_	_	_	_	_	_		_
ICE Jefferson Island Storage and Hub	JAABV21	—		—	—	—	—		_
ICE MS Hub Storage	JAACF21	_		-	-	_			
ICE NGPL, Louisiana Pooling PIN	JAACL21	_		_	_				_
ICE NGPL, Louisiana Storage PIN	JAACM21	_		_	_	_	—		_
ICE Pine Prairie Hub	JAADF21	3.310	+0.060	3.290	3.320	3.305	3.320	880	98
ICE Sonat, Zone 0	JAAHE21								
ICE Sonat, Zone 0 South Louisiana Pool	JAAEJ21	3.315	+0.030	3.290	3.345	3.300	3.330	394	62
ICE Sonat, Zone 1 North Pool	JAAEK21	_	_	_	_		_	_	
ICE Southern Pines Hub	JAAEM21	_		_	_	_	_	_	
ICE Stingray, pool delivery	JAAE021	2 1 7 0	-		2 100			120	
ICE Tennessee, zone 1 100 Leg Pool	JAAER21	3.170	+0.035	3.160	3.190	3.165	3.180	120	20
ICE Tennessee, zone 1, Station 87 Pool ICE Texas Gas, Mainline Pool	JAAES21	3.205	+0.065	3.190	3.210	3.200	3.210 3.180	40	6
ICE Texas Gas, Mainline Pool ICE Texas Gas, North Louisiana Pool	JAAEX21	3.175	+0.030	3.160	3.180	3.170	3.180	368	56
	JAAEY21								

# FINAL DAILY GAS INDICES - ICE LOCATIONS (\$/MMBtu)

	-	-
Trade date: 09-0	ct	
11000 0010.03-0	66	

Flow date(s): 10-0ct			Daily	Absolute	Absolute	Common	Common		
Location	Symbol	Index	Change	Low	High	Low	High	Volume	Deals
Rockies/Northwest									
ICE CIG, Mainline (sellers' choice, non-lateral)	JAAFY21	2.950	+0.030	2.945	2.950	2.950	2.950	69	8
ICE CIG, Mainline Pool	JAAFZ21	_	_	_	_	_	_		_
ICE CIG, Mainline South (sellers' choice)	JAAAT21	2.895	+0.070	2.850	2.935	2.875	2.915	80	10
ICE Kern River, on system receipt	JAACA21	2.955	+0.035	2.930	2.985	2.940	2.970	470	66
ICE Opal Plant Tailgate	JAADB21	2.960	-0.005	2.950	2.970	2.955	2.965	176	32
ICE PG&E, Onyx Hill	JAAHB21	_	_	_	_	_	_		_
ICE Pioneer Plant Tailgate	JAADG21	2.960	+0.355	2.950	2.965	2.955	2.965	40	4
ICE Questar, North Pool	JAADI21	2.850	+0.050	2.850	2.850	2.850	2.850	24	8
ICE Questar, South Pool	JAADJ21	_	_	_	_	_	_		_
ICE Ruby, Onyx Hill	JAADS21	2.990	+0.035	2.970	3.010	2.980	3.000	55	12
ICE Ruby, Receipt Pool	JAADT21	_	_	_	_	_	_	_	_
ICE Ryckman Creek Gas Storage	JAADU21	_	_	_	_	_	_	_	_
ICE WIC, Pool	JAAFH21	_	_						_
Southwest									
ICE Agua Blanca Pool	JAAHU21	_	_	_	_	_	_	_	_
ICE El Paso, Keystone Pool	JAABB21	1.480	+0.090	1.400	1.700	1.405	1.555	745	100
ICE El Paso, Plains Pool	JAABC21	2.365	+0.350	2.250	2.500	2.305	2.430	159	30
ICE El Paso, Waha Pool	JAABD21	1.490	+0.125	1.400	1.600	1.440	1.540	675	88
ICE Oasis, Waha Pool	JAACZ21	1.360	+0.125	1.250	1.550	1.285	1.435	60	16
ICE ONEOK, Westex Pool	JAADA21	1.885	+0.195	1.700	2.020	1.805	1.965	257	36
ICE PG&E, Daggett	JAADC21	_	_						_
ICE PG&E, Kern River Station	JAADD21	_	_				_		_
ICE PG&E, Topock	JAADE21	2.605	+0.265	2.560	2.625	2.590	2.620	128	22
ICE Socal, Blythe	JAADX21	_	_						_
ICE Socal, Ehrenberg (delivered)	JAADY21	2.775	+0.385	2.700	2.820	2.745	2.805	70	8
ICE Socal, Firm Storage only (Citygate)	JAADZ21	_	_	_	_	_	_	_	_
ICE Socal, In-ground transfer only (Citygate)	JAAEA21	_	_						_
ICE Socal, Interruptible Storage only (Citygate)	JAAEB21	_	_				_		_
ICE Socal, Kern River Station	JAAEC21	2.985	+0.000	2.970	3.010	2.975	2.995	70	10
ICE Socal, Kramer Junction	JAAED21	2.950	+0.050	2.910	3.000	2.930	2.975	233	30
ICE Socal, Needles	JAAEE21	2.315	+0.065	2.250	2.350	2.290	2.340	30	4
ICE Socal, sellers' choice delivered incl. CA production	JAAEF21	_	_	_	_	_	_	_	_
ICE Socal, Topock	JAAHD21	_	_	_	_	_	_		_
ICE Socal, Topock, El Paso	JAAEG21	_	_				_		_
ICE Socal, Topock, Transwestern	JAAEH21	_	_				_		_
ICE Socal, Wheeler Ridge	JAAEI21	2.995	+0.060	2.900	3.050	2.960	3.035	262	34
ICE Transwestern, Central Pool	JAAFB21	1.500	+0.080	1.500	1.500	1.500	1.500	10	2
ICE Transwestern, Panhandle Pool	JAAFC21	_	_	_	_	_	_	_	_
ICE Transwestern, West Texas Pool	JAAFD21	1.520	+0.090	1.500	1.550	1.510	1.535	47	10
ICE Waha Hub, West Texas (buyer's choice delivered)	JAAFG21	1.510	+0.110	1.450	1.650	1.460	1.560	161	28

### ICE GAS DAILY ASSESSMENT RATIONALE

The daily indices for ICE locations are a volume weighted average of ICE Exchange trades submitted to Platts by ICE. No other sources of data are used. Platts editors do not screen the data for outliers or assess prices if there are no transactions. Questions may be directed to Ryan Ouwerkerk at 713-655-2202 or

ryan.ouwerkerk@spglobal.com