

# Energy Trader

August 1, 2023

## Mountain Valley developer sticks to 2023 in-service target as construction resumes

- Project advances after Supreme Court lifts stays
- Equitrans says four to five months of construction remains

Equitrans Midstream stuck to its target for bringing the long-delayed 304-mile, 2 Bcf/d Mountain Valley Pipeline into service by the end of 2023, maintaining a more aggressive timeline than a recent estimate from its biggest customer.

The pipeline developer said Aug. 1 it anticipated “four to five months’ worth of construction” remaining on the estimated \$6.6 billion project that will add an outlet for Appalachian Basin production. That work is already underway, after the US Supreme Court on July 27 lifted two stay orders from a lower court holding up work on the project, Equitrans executives said. The developer told the US Federal Energy Regulatory Commission shortly after the Supreme Court order that it was resuming work following FERC’s June 28 order authorizing all construction.

“It’s ordinary course construction where there could be some weather impact, as with any project,” Equitrans Chairman and CEO Thomas Karam told analysts during a second-quarter earnings call. “But absent some of those extreme conditions, we’re fairly confident that we’re going to bring MVP into line

[\(continued on page 27\)](#)

## As Texas grid sets demand record, experts mull how utilities handle extreme heat

- Record seen to be topped through Aug. 8
- Retiring thermal too quickly poses problems

Broiling under triple-digit high temperatures, the Texas grid set an unofficial peakload record of 83 GW on July 31, a new record forecast to be exceeded every day through Aug. 8. However, other parts of the US also suffered, about which electric utility experts offered insights in an Aug. 1 webinar.

The Electric Reliability Council of Texas’ peakload of 83,047 MW on July 31 exceeded the 82,592 MW record set July 18, and as of 3:30 pm CT Aug. 1, ERCOT forecast load to peak at 83,965 MW that day.

The National Weather Service at 3:30 pm CT Aug. 1 had excessive heat warnings and advisories across the eastern two-thirds of Texas, Oklahoma and Kansas, all of Louisiana, most of Arkansas and Mississippi and the southwestern third of Missouri.

“It certainly has been a hot summer around the globe,” said

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## Key daily indexes

Hub/Delivery point	Index	Change
<b>Electricity (\$/MWh)</b>		
PJM Western Hub	32.21	-5.52
ISONE Internal Hub	28.66	-3.69
Into Southern	35.25	-2.75
MISO Indiana Hub	38.89	1.74
ERCOT North Hub	75.00	0.00
Palo Verde	104.00	-9.88
<b>Gas (\$/MMBtu)</b>		
TX.Eastern, M3	1.120	-0.060
Algonquin, city-gates	1.575	0.170
Chicago city-gates	2.240	-0.070
Henry Hub	2.490	-0.080
SoCal Gas	4.830	-0.055
<b>NYMEX futures</b>		
Henry Hub gas (\$/MMBtu)	2.560	-0.074

## Hourly index values

31-Jul	On-peak	Off-peak
Mid-C hourly (\$/MWh)	117.67	64.91
<b>Curtailement (MW)</b>		
Cal ISO Solar - Local	116.12	0.00
Cal ISO Solar - System	4.31	0.00
Cal ISO Wind - Local	0.72	1.29
Cal ISO Wind - System	0.00	0.00
SPP Wind	885.47	9976.31

## Northeast Power Markets

### US Northeast power dailies rangebound amid increased demand

On the Intercontinental Exchange, Mass Hub day-ahead on-peak ticked down about \$1.50 from the previous settlement of about \$32.25/MWh to trade near \$31/MWh. Off-peak prices had an offer at \$27/MWh and a bid at \$23/MWh which were different from the previous settlement of \$24.50/MWh.

Conversely, in the New York System Operator footprint, locational marginal prices ticked up, with Zone G Hudson Valley and Zone J New York City rising about \$1.75 to near \$29.25/MWh and \$29.75/MWh, respectively. Zone A West traded up about \$1.50 to near \$27.50/MWh.

Off-peak prices also inched higher and averaged about 75 cents higher, with the mean trading near \$10.75/MWh.

### Temperatures and Demand

New York City and Boston were forecast moderate regional temperatures. New York City temperatures were forecast to reach a high near 78 degrees Fahrenheit and Boston temperatures were forecast to reach a high near 77 F, according to the US National Weather Service.

Prices followed demand fundamentals, as NYISO peakload demand rose 1% to reach 20.74 GW. ISO-New England prices opposed demand fundamentals as peakload demand increased 4.10% to 16.50 GW.

### Natural Gas and Forwards

Spot natural gas prices for Algonquin city-gates increased about 25 cents from the previous settlement to reach about \$1.50/MMBtu. Transco Zone 6 NY had an offer near \$1.25/MMBtu and a bid near \$1/MMBtu, which varied from the previous settlement of about \$1.25/MMBtu.

In the forwards market, NEPOOL on-peak prices for August delivery settled near the weighted average price of \$39.25/MWh on ICE, compared with the prior price of about \$41.75/MWh. Peak prices for September delivery traded near \$33.75/MWh, relatively steady on the day.

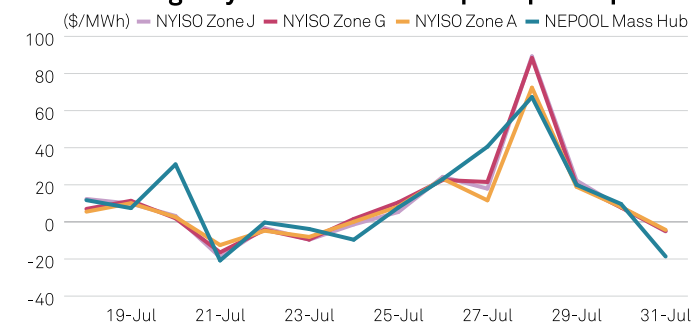
Platts is part of S&P Global Commodity Insights.

— Madeline Ryan

### Day-ahead electric LMP markets for Aug 2 (\$/MWh)

Hub/Zone	Average	Cong	Loss	Change	Avg \$/Mo	Marginal heat rate
<b>ISONE on-peak</b>						
Internal Hub	28.66	-0.02	-0.03	-3.69	30.51	18196
<b>ISONE off-Peak</b>						
Internal Hub	22.23	-0.04	-0.05	-7.81	26.14	14111
<b>NYISO on-peak</b>						
Hudson Valley Zone	29.21	-0.09	1.76	1.86	28.28	13010
N.Y.C. Zone	29.78	-0.13	2.29	1.82	28.87	27701
West Zone	27.61	0.00	0.25	1.51	26.86	23200
<b>NYISO off-Peak</b>						
Hudson Valley Zone	20.86	-0.13	1.06	1.09	20.32	9293
N.Y.C. Zone	21.15	-0.14	1.35	1.15	20.58	19674
West Zone	19.63	-0.02	-0.06	0.29	19.49	16492
<b>PJM on-peak</b>						
Western Hub	32.21	2.25	-0.39	-5.52	34.97	28757
Dominion Hub	34.27	4.17	-0.24	-6.76	37.65	12694
Eastern Hub	21.47	-8.59	-0.28	-1.65	22.30	19174
<b>PJM off-Peak</b>						
Western Hub	17.09	0.90	-0.22	-2.07	18.13	15261
Dominion Hub	18.64	1.92	0.31	-1.94	19.61	6902
Eastern Hub	12.16	-3.70	-0.55	-1.73	13.03	10858

### Northeast avg. day-ahead/real-time peak price spread



## Northeast Gas Markets

### US Northeast cash gas prices mixed amid lower demand, drop in storage injections

- S&P Global Commodity Insights sees Northeast demand at 16.3 Bcf/d on Aug 2
  - Injections at Columbia Gas at 6.25 Bcf in week ended July 28
- US Northeast spot gas prices were mixed during Aug. 1 trading, as demand was expected to decline on the day, while storage injections also fell from the year-ago week.

Transco Zone 6 NY slid 10 cents on the day to roughly \$1.10/MMBtu, its lowest level since Nov. 4, 2022, while Algonquin city-gates rose 15 cents to about \$1.60/MMBtu for next-day flows.

Prices fell across the board in the Appalachia region, with Columbia Gas and Eastern Gas both falling to near nine-month lows. Columbia Gas decreased about 5 cents to \$1.25/MMBtu, while Eastern Gas South fell 15 cents to around \$1/MMBtu.

Basis prices were mostly higher on the day, as TETCO-M3 and Eastern Gas South both strengthened about 5 cents to a 1.45 discount to Henry Hub and \$1.55 discount, respectively.

#### Demand expected to decline

S&P Global Commodity Insights forecast Northeast demand to fall to 16.3 Bcf/d on Aug. 2, from 16.98 Bcf/d the previous day.

The biggest decrease was expected in the residential-commercial sector that is estimated to drop 410 MMcf to 2.59 Bcf/d.

#### Injections fall on year

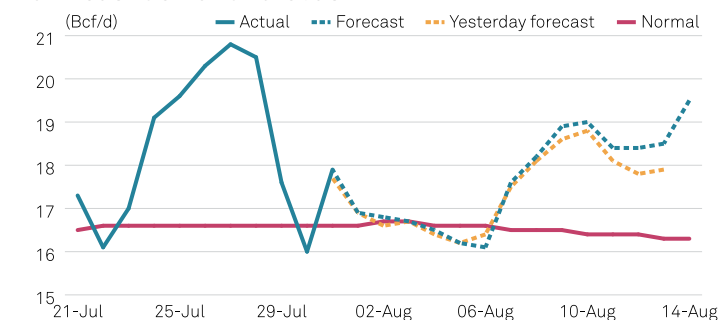
Injections at Columbia Gas were at 6.25 Bcf in the week ended July 28, up from 4.67 Bcf in the previous week but down from 6.33 Bcf in the year-ago week. It was the sixth straight year-on-year decrease.

Inventories were now at 174.91 Bcf, up from 147.02 Bcf a year earlier.

Eastern Gas Transmission and Storage injected a four-month low 2 Bcf, down from 4 Bcf in the prior week and 6 Bcf in the year-ago week. Storage levels for EGTS were now at 216 Bcf, up from 172 Bcf a year earlier.

— Tyler Godwin

#### Northeast demand forecast



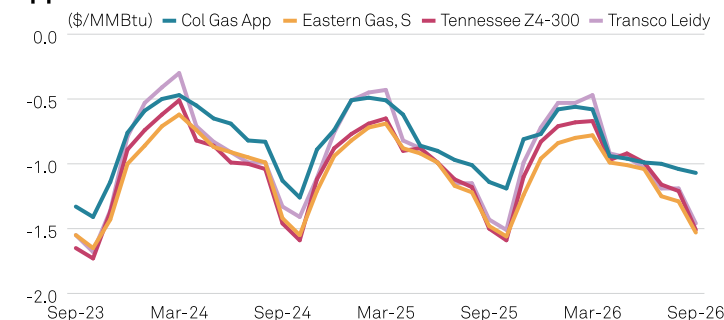
### Daily spot gas prices, Aug 1 (\$/MMBtu)

	Midpoint	+/-	Absolute	Common	Vol.	Deals
<b>Northeast</b>						
Algonquin, city-gates	1.575	+0.170	1.525-1.600	1.555-1.595	165	28
Algonquin, receipts	1.130	+0.060	1.130-1.130	1.130-1.130	10	2
Dracut, Mass.	---	---	---	---	---	---
Iroquois, receipts	2.225	+0.045	2.220-2.250	2.220-2.235	13	3
Iroquois, zone 1	---	---	---	---	---	---
Iroquois, zone 2	2.245	+0.060	2.200-2.250	2.235-2.250	159	38
Niagara	1.190	-0.005	1.160-1.350	1.160-1.240	44	8
Tennessee, z5 (200 leg)	1.290	-0.110	1.280-1.300	1.285-1.295	20	6
Tennessee, zone 6 del.	1.330	+0.050	1.300-1.400	1.305-1.355	83	19
Tennessee, zone 6, del. North	---	---	---	---	---	---
Tennessee, zone 6, del. South	1.330	+0.050	1.300-1.400	1.305-1.355	83	19
Tx. Eastern, M-3	1.120	-0.060	0.990-1.200	1.070-1.175	245	48
Transco, zone 5 del.	2.700	-0.145	2.680-2.750	2.685-2.720	559	107
Transco, zone 5 del. North	2.715	-0.115	2.680-2.750	2.700-2.735	195	35
Transco, zone 5 del. South	2.695	-0.160	2.680-2.740	2.680-2.710	364	72
Transco, zone 6 N.Y.	1.075	-0.105	0.980-1.200	1.020-1.130	61	18
Transco, zone 6 non-N.Y.	1.130	-0.040	1.010-1.200	1.085-1.180	150	30
Transco, zone 6 non-N.Y. North	1.130	-0.040	1.010-1.200	1.085-1.180	150	30
<b>Appalachia</b>						
Columbia Gas, App.	1.230	-0.055	1.200-1.260	1.215-1.245	472	91
Columbia Gas, App. non-IPP	---	---	---	---	---	---
Eastern Gas, North	1.050	-0.090	1.050-1.050	1.050-1.050	3	2
Eastern Gas, South	1.020	-0.125	0.930-1.100	0.980-1.065	587	76
Lebanon Hub	2.150	-0.125	2.110-2.180	2.135-2.170	51	12
Leidy Hub	---	---	---	---	---	---
Millennium, East receipts	1.065	+0.055	1.060-1.080	1.060-1.070	58	8
Tennessee, zone 4-200 leg	1.265	+0.045	1.200-1.330	1.235-1.300	122	40
Tennessee, zone 4-300 leg	1.025	+0.070	0.990-1.060	1.010-1.045	44	8
Tennessee, zone 4-313 pool	1.115	-0.045	1.035-1.150	1.085-1.145	136	33
Tx. Eastern, M-2 receipts	0.920	-0.215	0.870-1.080	0.870-0.975	667	120
Transco, Leidy Line receipts	1.100	-0.025	1.070-1.130	1.085-1.115	40	5

### Platts spark spreads, Aug 1 (\$/MWh)

	@7k	30-day avg	@12k	30-day avg
<b>Northeast</b>				
ISO-NE Internal Hub on-peak	22.52	29.88	15.49	16.51
ISO-NE Internal Hub off-peak	20.21	11.82	13.18	-1.56
NYISO Zone G on-peak	12.06	23.26	1.13	6.75
NYISO Zone G off-peak	4.48	4.91	-6.45	-11.61
<b>Mid-Atlantic</b>				
PJM Eastern Hub on-peak	14.86	48.25	8.96	40.35
PJM Eastern Hub off-peak	5.63	7.56	-0.27	-0.34
PJM Western Hub on-peak	29.47	36.41	23.57	28.51
PJM Western Hub off-peak	10.90	9.15	5.00	1.25

### Appalachia forward basis



## Central Power Markets

### US PJM power follows natural gas down as SPP extends resources advisory

Spot power in the PJM Interconnection trended bearish on the Intercontinental Exchange during Aug. 1 trading, following falling regional natural gas prices, with Texas Eastern M3 sliding around 7 cents on ICE from Platts' assessed Aug. 1 price to \$1.11/MMBtu for next-day Aug. 2 flows.

West Hub day-ahead on-peak shed around \$2.25 to price about \$35.50/MWh and its real-time peak contract declined some \$5 to approximately \$34/MWh for Aug. 2 delivery.

The National Weather Service forecast high temperatures in Pittsburgh to rise 4 degrees Aug. 1 to Aug. 2 to 83 Fahrenheit.

On warmer temperatures, the regional transmission operator expected a 2.8% increase in its systemwide peakload demand from the day before to 123.6 GW Aug. 2.

West Hub weekend off-peak Aug. 5-6 dropped 75 cents to \$36.25/MWh, while AD Hub rose \$5.75 to also price at \$36.25/MWh.

### SPP alerts

The Southwest Power Pool extended a Resource Advisory already in effect through Aug. 4 due to "high loads, variable energy resource forecast uncertainty and resource outages." A concurrent Hot Weather Advisory also remained in place until Aug. 2.

North Hub day-ahead peak tumbled about \$32.75 to \$47.50/MWh, while the corresponding South Hub contract rose about 50 cents to price at \$54/MWh for Aug. 2 delivery.

The balancing authority forecast Aug. 2 demand would be flat on the day at 51.2 GW and expected wind generation to rise 4.6% from the day before to 337.6 GWh.

The weather service forecast Omaha highs at 87 F and Tulsa highs at 103 F Aug. 2.

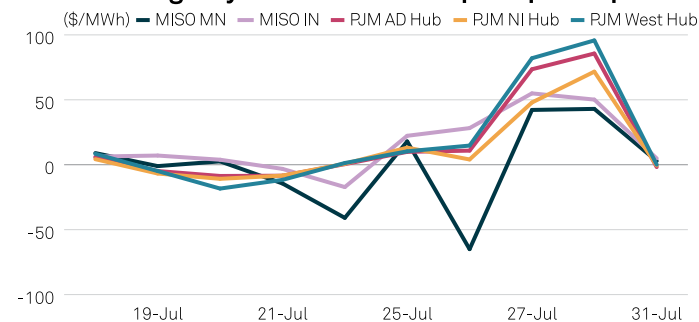
Platts is part of S&P Global Commodity Insights.

— Karen Rivera

### Day-ahead electric LMP markets for Aug 2 (\$/MWh)

Hub/Zone	Average	Cong	Loss	Change	Avg \$/Mo	Marginal heat rate
<b>MISO on-peak</b>						
Indiana Hub	38.89	-1.60	-0.25	1.74	38.02	17359
Michigan Hub	38.63	-2.03	-0.07	1.34	37.96	17640
Minnesota Hub	49.75	8.48	0.54	8.17	45.67	22666
Illinois Hub	37.11	-2.57	-1.06	1.71	36.26	16566
<b>MISO off-Peak</b>						
Indiana Hub	21.77	-0.25	0.42	0.78	21.38	9718
Michigan Hub	21.93	-0.26	0.58	0.95	21.46	10011
Minnesota Hub	21.75	1.07	-0.92	2.32	20.59	9907
Illinois Hub	20.79	-0.42	-0.40	0.70	20.44	9280
<b>PJM on-peak</b>						
AEP-Dayton Hub	32.59	1.93	0.32	-5.32	35.25	14882
Northern Illinois Hub	32.80	2.46	0.00	-5.22	35.41	14643
<b>PJM off-Peak</b>						
AEP-Dayton Hub	17.54	0.93	0.20	-1.94	18.51	8007
Northern Illinois Hub	17.02	0.70	-0.09	-1.93	17.99	7598
<b>SPP on-peak</b>						
SPP North Hub	42.45	-9.76	0.61	-1.36	43.13	19340
SPP South Hub	62.64	11.52	-0.48	7.86	58.71	29135
<b>SPP off-Peak</b>						
SPP North Hub	16.79	-1.90	-0.02	1.43	16.08	7649
SPP South Hub	15.28	-3.15	-0.28	-0.61	15.59	7106

### PJM/MISO avg. day-ahead/real-time peak price spread



## Central Gas Markets

### US Midcontinent gas prices decline as demand expected to improve

US Midcontinent natural gas spot prices sunk across the board during Aug. 1 trading for next day flows as residential-commercial demand is projected to drop.

In the Upper Midwest, Chicago city-gates dropped almost 10 cents to about \$2.25/MMBtu. In the Midcontinent, ANR, Okla fell around 5 cents to about \$2.20/MMBtu.

In the September forwards market, Chicago city-gates bumped up half a penny to a 27.5-cent discount from Henry Hub.

#### Demand to improve

Total Midcontinent demand is expected to increase 182 MMcf/d to 13.83 Bcf/d as power demand is anticipated to increase 493 MMcf/d to 6.65 Bcf/d, but res-comm demand is predicted to decline 311 MMcf/d to 7.18 Bcf/d, according to S&P Global Commodity Insights.

In the Midcon Market area, power demand is likely to boost 280 MMcf/d to 4.44 Bcf/d, but res-comm demand is estimated to decline 351 MMcf/d to 3.21 Bcf/d. In the Midcon Producing region, power demand is predicted to rise 214 MMcf/d to 2.22 Bcf/d and res-comm demand is also expected to increase by 214 MMcf/d to 1.98 Bcf/d.

#### Netflows

Netflows into the Midcontinent declined 12% from the day prior to 8.9 Bcf/d, according to S&P Global. Year-to-date inflows, though, are 5% higher than year-to-date inflows the year prior.

Year-to-date inflows in the Midcon Market area 1% higher than year-to-date inflows the previous year. However, in the Midcon Producing region, inflows are 3% higher than year-to-date inflows the previous year.

— Tamara Wisnieski

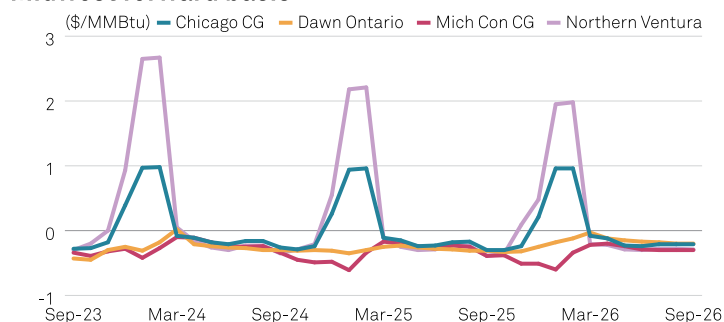
### Daily spot gas prices, Aug 1 (\$/MMBtu)

	Midpoint	+/-	Absolute	Common	Vol.	Deals
<b>Upper Midwest</b>						
Alliance, into interstates	2.230	-0.060	2.185-2.250	2.215-2.245	505	74
ANR, ML7	---	---	---	---	---	---
Chicago city-gates	2.240	-0.070	2.225-2.270	2.230-2.250	310	50
Chicago-Nicor	2.240	-0.075	2.225-2.260	2.230-2.250	177	28
Chicago-NIPSCO	2.240	-0.070	2.230-2.270	2.230-2.250	73	14
Chicago-Peoples	2.245	-0.050	2.240-2.250	2.245-2.250	60	8
Consumers city-gate	2.250	-0.025	2.230-2.260	2.245-2.260	190	32
Dawn, Ontario	2.185	-0.025	2.150-2.230	2.165-2.205	357	54
Emerson, Viking GL	2.135	-0.050	2.130-2.180	2.130-2.150	116	20
Mich Con city-gate	2.190	-0.025	2.180-2.200	2.185-2.195	209	38
Northern Bdr., Ventura TP	2.190	-0.065	2.170-2.230	2.175-2.205	190	32
Northern, demarc	2.210	-0.045	2.180-2.250	2.195-2.230	101	20
Northern, Ventura	2.195	-0.030	2.170-2.220	2.185-2.210	140	32
REX, Zone 3 delivered	2.195	-0.095	2.120-2.245	2.165-2.225	969	142
Rover, delivered	2.155	-0.020	2.130-2.200	2.140-2.175	265	50
<b>Midcontinent</b>						
ANR, Okla.	2.205	-0.055	2.180-2.230	2.195-2.220	115	20
Enable Gas, East	2.255	-0.095	2.220-2.360	2.220-2.290	95	7
NGPL, Amarillo receipt	2.260	+0.010	2.235-2.300	2.245-2.275	32	4
NGPL, Midcontinent	2.210	-0.070	2.190-2.250	2.195-2.225	462	64
Oneok, Okla.	2.225	+0.010	2.220-2.230	2.225-2.230	52	16
Panhandle, Tx.-Okla.	2.150	-0.095	2.140-2.160	2.145-2.155	29	8
Southern Star	2.225	-0.040	2.200-2.240	2.215-2.235	115	22
Tx. Eastern, M-1 24-in.	2.300	-0.125	2.300-2.300	2.300-2.300	5	1

### Platts spark spreads, Aug 1 (\$/MWh)

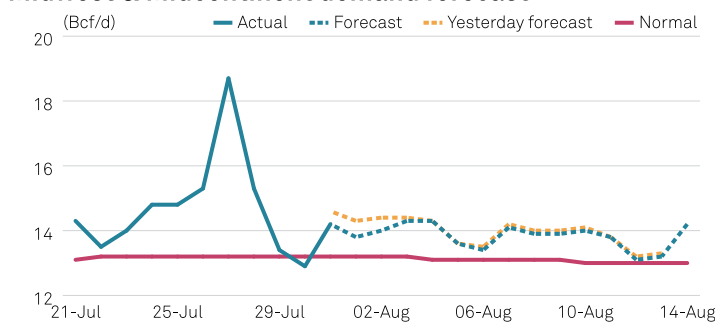
	@7k	30-day avg	@12k	30-day avg
<b>Midwest</b>				
MISO Indiana Hub on-peak	20.98	29.92	9.43	18.40
MISO Indiana Hub off-peak	4.82	9.50	-6.73	-1.96
MISO Illinois Hub on-peak	19.23	28.15	7.68	16.63
MISO Illinois Hub off-peak	3.92	8.25	-7.63	-3.21
PJM AEP Dayton Hub on-peak	22.41	28.81	11.33	17.65
PJM AEP Dayton Hub off-peak	3.98	5.18	-7.10	-5.98
SPP South Hub on-peak	39.07	29.21	27.84	18.26
SPP South Hub off-peak	0.18	7.19	-11.05	-3.72

### Midwest forward basis



Source: S&P Global Commodity Insights

### Midwest & Midcontinent demand forecast



Source: S&P Global Commodity Insights

## Southeast Power Markets

### US ERCOT power prices slump, but excessive heat remains

ERCOT North Hub day-ahead on-peak contract decreased about \$10 to price at roughly \$66/MWh during Aug. 1 trading for Aug. 2 delivery on the Intercontinental Exchange, as wind production was set to increase. The real-time peak contract decreased nearly \$6 to price about \$66.25/MWh.

The balance-of-the-week Aug. 3-4 contract increased about \$20 to price \$105/MWh during Aug. 1 trading.

Georgia Power said the first new US nuclear reactor since 2016 was producing electricity commercially as of July 31. The 1,114 MW Unit 3 reactor joins two existing reactors at Plant Vogtle.

### ERCOT weather, renewables

ERCOT has issued an Operating Condition Notice for extreme hot weather, with temperatures forecast to be above 103 F in the Texas North Central and South Central weather zones from Aug. 3 to Aug. 7.

The National Weather Service issued heat advisory warnings in effect through 9 pm Aug. 2 for parts of Texas, stating dangerous heat will continue throughout the week.

ERCOT forecast total wind production to increase 2.8% from Aug. 1 levels to 326.43 GWh Aug 2. The grid operator forecast total solar production to decrease 1% from Aug. 1 levels to 136.16 GWh Aug. 2.

### Record demand

ERCOT reported a peakload demand record of 83.05 GW July 31. The grid operator forecast peakload demand to decrease 1% from Aug. 1 levels of 84.9 GW to 84.08 GW Aug. 2, both of which would set records.

— Larry Flores

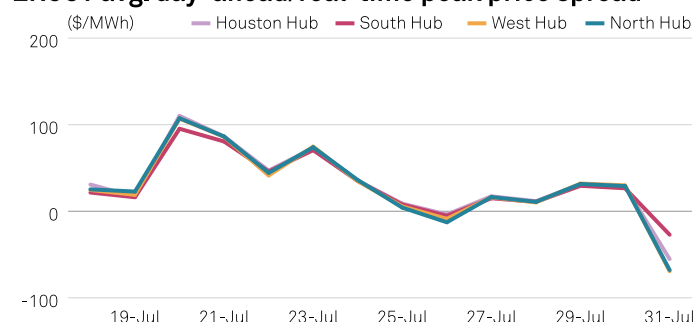
### Southeast day-ahead bilateral indexes for Aug 2 (\$/MWh)

	Index	Change	Avg \$/Mo	Marginal heat rate
<b>Southeast On-peak</b>				
VACAR	35.25	-2.75	36.63	13056
Southern, Into	35.25	-2.75	36.63	13558
GTC, Into	35.25	-2.75	36.63	13558
Florida	39.00	-2.75	40.38	13198
TVA, Into	36.25	-1.75	37.13	16477
<b>Southeast Off-Peak</b>				
VACAR	18.75	-0.25	18.88	6944
Southern, Into	18.75	-0.25	18.88	7212
GTC, Into	20.00	-0.33	20.17	7692
Florida	23.50	-0.25	23.63	7953
TVA, Into	18.75	-0.25	18.88	8523

### Day-ahead electric LMP markets for Aug 2 (\$/MWh)

Hub/Zone	Average	Cong	Loss	Change	Avg \$/Mo	Marginal heat rate
<b>ERCOT on-peak</b>						
Houston Hub	75.71			-1.70	76.56	33724
North Hub	75.00			0.00	75.00	33631
South Hub	71.12			-3.02	72.63	32925
West Hub	73.73			-0.85	74.16	33362
<b>ERCOT off-peak</b>						
Houston Hub	23.12			-0.28	23.26	10298
North Hub	22.39			-0.33	22.56	10040
South Hub	23.51			-0.27	23.65	10882
West Hub	24.44			-0.15	24.52	11058
<b>MISO on-peak</b>						
Arkansas Hub	37.06	-1.79	-1.88	2.39	35.87	16435
Louisiana Hub	38.59	-1.78	-0.37	0.05	38.57	16421
Texas Hub	44.28	3.33	0.21	-3.67	46.12	19857
<b>MISO off-Peak</b>						
Arkansas Hub	20.62	-0.28	-0.71	0.50	20.37	9142
Louisiana Hub	21.75	-0.24	0.39	0.67	21.42	9253
Texas Hub	21.75	-0.24	0.39	0.42	21.54	9753

### ERCOT avg. day-ahead/real-time peak price spread



Sources: S&P Global Commodity Insights, ERCOT



## Southeast Gas Markets

### US Southeast gas prices drop on falling demand forecast

US Southeast natural gas spot prices fell Aug. 1 for next-day flows, as demand was projected to decline in the Southeast and Texas.

Columbia Gulf-Louisiana decreased about 15 cents on the day, landing at about \$2.35/MMBtu. Additionally, Transco Zone 4 dropped 15 cents to about \$2.60/MMBtu.

In the forwards market, prompt-month Florida Gas Zone 3 dropped about 6 cents to a 42-cent premium to Henry Hub. Moreover, Houston Ship Channel slipped 1 cent to a 27-cent discount, while Transco Zone 4 dipped 1 cent to an 11-cent premium.

#### Demand to fall in Southeast, Texas

Total demand in the Southeast was projected to drop by 244 MMcf to 29.41 Bcf/d Aug. 2, according to S&P Global Commodity Insights data. Moreover, power demand was forecast to slide 310 MMcf from the previous day to 13.92 Bcf/d.

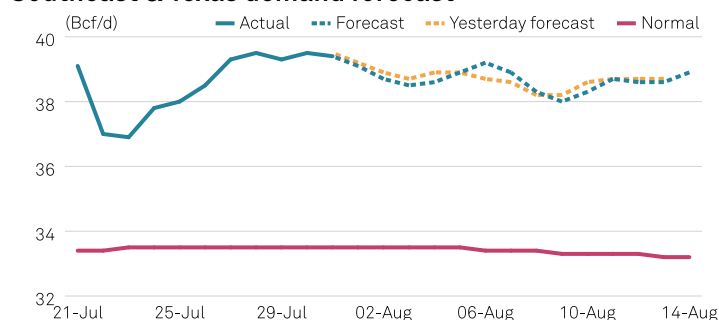
Total Texas demand was expected to dip 101 MMcf from the day prior to 20.80 Bcf/d. Furthermore, residential-commercial demand was forecast to decline 31 MMcf to 3.55 Bcf/d, while power demand was projected to drop 68 MMcf to 7.87 Bcf/d.

#### Southeast production slides

Total Southeast production fell by 108 MMcf from the previous day to 14.53 Bcf/d Aug. 1, according to S&P Global data. Moreover, the Haynesville basin tumbled 531 MMcf to 6.81 Bcf/d, while the Fayetteville basin decreased 25 MMcf to 872 MMcf/d.

— Amilcar Flores

### Southeast & Texas demand forecast



Source: S&P Global Commodity Insights

### Daily spot gas prices, Aug 1 (\$/MMBtu)

	Midpoint	+/-	Absolute	Common	Vol.	Deals
<b>Louisiana/Southeast</b>						
ANR, La.	2.395	-0.105	2.350-2.420	2.380-2.415	152	34
Columbia Gulf, La.	2.350	-0.150	2.340-2.380	2.340-2.360	66	14
Columbia Gulf, mainline	2.140	-0.105	2.080-2.200	2.110-2.170	217	34
Florida city-gates	3.515	-0.200	3.455-3.605	3.480-3.555	68	9
Florida Gas, zone 2	---	---	---	---	---	---
Florida Gas, zone 3	2.955	-0.220	2.900-3.135	2.900-3.015	162	37
Henry Hub	2.490	-0.080	2.455-2.530	2.470-2.510	448	69
Pine Prairie Hub	2.390	-0.140	2.380-2.425	2.380-2.400	120	22
Southern Natural, La.	2.585	-0.065	2.555-2.600	2.575-2.595	337	40
Tennessee, zone 1	2.200	-0.040	2.180-2.250	2.185-2.220	146	24
Tennessee, 500 leg	2.520	-0.065	2.480-2.550	2.505-2.540	268	60
Tennessee, 800 leg	2.310	-0.050	2.280-2.370	2.290-2.335	74	16
Tx. Eastern, ELA	2.310	-0.045	2.280-2.330	2.300-2.325	216	37
Tx. Eastern, M-1 30-in.	2.310	-0.050	2.310-2.310	2.310-2.310	1	0
Tx. Eastern, WLA	2.375	-0.090	2.340-2.425	2.355-2.395	328	44
Tx. Gas, zone 1	2.200	-0.105	2.150-2.250	2.175-2.225	331	52
Tx. Gas, zone SL	---	---	---	---	---	---
Transco, station 65	2.560	-0.170	2.540-2.600	2.545-2.575	252	53
Transco, zone 3	2.560	-0.165	2.400-2.600	2.510-2.600	266	55
Transco, zone 4	2.600	-0.135	2.555-2.700	2.565-2.635	1105	212
Trunkline, ELA	---	---	---	---	---	---
Trunkline, WLA	---	---	---	---	---	---
Trunkline, zone 1A	2.185	-0.065	2.165-2.225	2.170-2.200	118	20
<b>East Texas</b>						
Agua Dulce Hub	2.175	-0.175	2.150-2.200	2.165-2.190	20	4
Carthage Hub	2.200	-0.070	2.200-2.200	2.200-2.200	56	7
Florida Gas, zone 1	2.360	-0.115	2.320-2.450	2.330-2.395	15	2
Houston Ship Channel	2.245	-0.120	2.190-2.300	2.220-2.275	283	43
Katy	2.245	-0.130	2.190-2.280	2.225-2.270	887	116
NGPL, STX	2.210	-0.105	2.200-2.240	2.200-2.220	130	22
NGPL, Texok zone	2.230	-0.090	2.200-2.290	2.210-2.255	1321	170
Tennessee, zone 0	2.160	-0.060	2.140-2.190	2.150-2.175	258	56
Tx. Eastern, ETX	2.230	-0.070	2.230-2.230	2.230-2.230	1	0
Tx. Eastern, STX	2.360	-0.100	2.350-2.375	2.355-2.365	74	11
Transco, zone 1	2.280	-0.085	2.260-2.300	2.270-2.290	127	22
Transco, zone 2	2.415	-0.100	2.400-2.430	2.410-2.425	61	12

### Platts spark spreads, Aug 1 (\$/MWh)

	@7k	30-day avg	@12k	30-day avg
<b>Southeast</b>				
Into Southern on-peak	18.86	22.26	5.18	8.30
Into Southern off-peak	-0.15	1.91	-13.82	-12.05
Florida on-peak	19.53	24.28	3.65	8.26
Florida off-peak	1.53	3.19	-14.35	-12.83
MISO Arkansas Hub on-peak	18.22	19.24	6.47	7.81
MISO Arkansas Hub off-peak	3.67	6.31	-8.08	-5.12
MISO Louisiana Hub on-peak	21.04	23.57	8.54	11.30
MISO Louisiana Hub off-peak	3.58	7.10	-8.92	-5.36
<b>Texas</b>				
ERCOT Houston Hub on-peak	60.86	59.30	49.03	47.57
ERCOT Houston Hub off-peak	6.85	5.33	-4.98	-6.40
ERCOT North Hub on-peak	58.76	57.19	47.16	45.84
ERCOT North Hub off-peak	6.48	5.37	-5.12	-5.98

## West Power Markets

### US Western power dailies remain mixed with market fundamentals

Day-ahead power prices mostly declined across the California Independent System Operator and Desert Southwest region during Aug. 1 trading on the Intercontinental Exchange alongside regional natural gas prices and demand expectations.

SP15 on-peak for Aug. 2 delivery was valued around \$84.25/MWh, slipping almost \$7.75 from its previous settlement. Palo Verde day-ahead on-peak saw a \$9.50 decrease to price around \$104.50/MWh, and the off-peak package was down roughly \$2 to \$79/MWh.

SoCalGas city-gates traded 43 cents lower on the day at \$7.77/MMBtu for next-day flows, and Opal Kern River shed 4 cents to \$3.95/MMBtu.

#### Bearish fundamentals

The system operator estimated a 4.8% drop in its peakload demand to 36.65 GW Aug. 2, as CustomWeather forecast the ISO and Southwest's average daily temperature to ease to 70.2 F and 74.7 Fahrenheit, respectively.

Greater supply also put pressure as total generation output in the ISO footprint ramped up over 9% on the day to 798.77 GWh July 31 on the back of more than 28% higher gas-fired generation at 374.9 GWh.

#### Pacific Northwest

Conversely, spot power in the Pacific Northwest paced higher as wind supply in the Bonneville Power Administration slumped over 54% to 18.92 GWh July 31.

Mid-Columbia day-ahead on-peak leapt about \$18.50 on the day to trade around \$129.75/MWh, and the corresponding off-peak rose nearly \$8.75 to \$63.50/MWh.

In the hourly market, the Platts Mid-C on-peak hourly index for July 31 was up over 47% from the day-before price to \$117.67/MWh, and the off-peak index saw a 74% gain to \$64.91/MWh.

CustomWeather forecast the average daily temperatures in the region to remain steady on the day at 70.8 F.

— Grace Parker

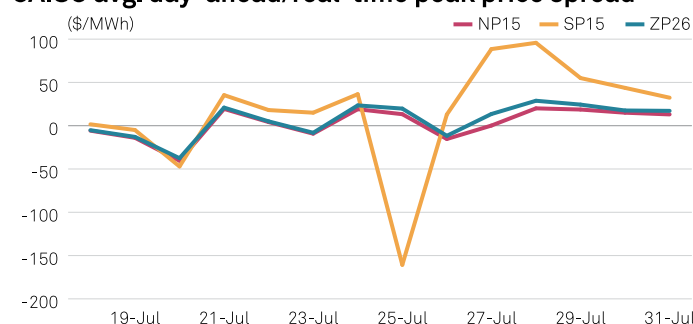
### Western day-ahead bilateral indexes for Aug 2 (\$/MWh)

	Index	Change	Avg \$/Mo	Marginal heat rate
<b>On-peak</b>				
Mid-C	124.72	13.52	117.96	31979
John Day	123.25	13.50	116.50	31603
COB	115.00	1.50	114.25	29299
NOB	120.00	0.00	120.00	30769
Palo Verde	104.00	-9.88	108.94	13385
Westwing	102.75	-10.00	107.75	13224
Pinnacle Peak	104.25	-10.00	109.25	13417
Mead	107.16	-8.15	111.24	13792
Mona	111.56	0.50	111.31	28753
Four Corners	112.50	-6.50	115.75	37688
<b>Off-Peak</b>				
Mid-C	63.93	9.14	59.36	16392
John Day	61.50	9.25	56.88	15769
COB	68.25	9.25	63.63	17389
NOB	68.00	9.00	63.50	17436
Palo Verde	80.00	-1.00	80.50	10296
Westwing	80.75	-1.00	81.25	10393
Pinnacle Peak	80.25	-1.00	80.75	10328
Mead	79.25	-0.75	79.63	10199
Mona	60.18	-5.73	63.05	15510
Four Corners	66.50	-17.50	75.25	22278

### Day-ahead electric LMP markets for Aug 2 (\$/MWh)

Hub/Zone	Average	Cong	Loss	Change	Avg \$/Mo	Marginal heat rate
<b>CAISO on-peak</b>						
NP15 Gen Hub	61.64	-12.94	-2.96	1.59	60.85	12158
SP15 Gen Hub	85.86	9.15	-0.84	-11.85	91.79	17776
<b>CAISO off-peak</b>						
NP15 Gen Hub	52.09	-7.95	-3.68	-0.71	52.45	10275
SP15 Gen Hub	69.68	6.67	-0.70	-4.87	72.12	14428

### CAISO avg. day-ahead/real-time peak price spread



Sources: S&P Global Commodity Insights, CAISO



## West Gas Markets

### US West gas prices fall on lower demand projections

US West cash gas prices slipped Aug. 1 for next-day flows as demand was expected to drop in the region. SoCal city-gate dipped about 45 cents on the day, landing about \$7.75/MMBtu. Additionally, White River Hub tumbled 50 cents to around \$2.95/MMBtu for Aug. 1 trading.

In the forwards market, the prompt-month PG&E Citygate contract dropped 14 cents to a \$2.61 premium over Henry Hub. Additionally, SoCal Gas slipped 17 cents to a \$2.47 premium, while El Paso Permian increased 3 cents to a 46-cent discount to Henry Hub. Also, El Paso San Juan dipped 1 cent to a 87-cent premium.

### West demand to drop

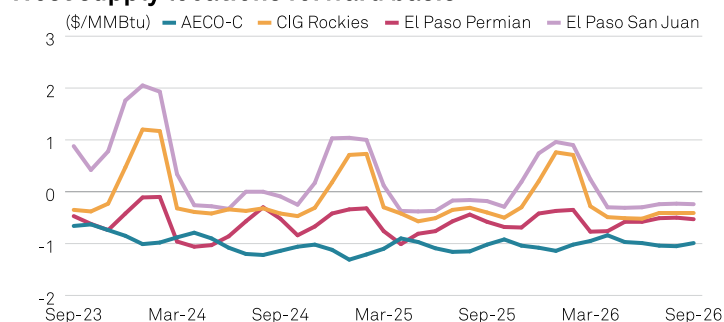
Total West demand was forecast to slide Aug. 2 by 96 MMcf from the day prior to 10.53 Bcf/d, according to S&P Global Commodity Insights. Additionally, power demand was projected to drop 64 MMcf to 5.92 Bcf/d while residential-commercial demand was expected to dip 13 MMcf to 2.23 Bcf/d. Finally, industrial demand in the region was projected to fall 19 MMcf to 2.38 Bcf/d.

### Transwestern issues overage alert

Low line pack in the Phoenix area has resulted in a same day overage alert being issued, according to Transwestern Pipeline Co. Based on current operating conditions, Transwestern expects the low line pack condition to continue for at least the current gas day.

— Amilcar Flores

### West supply locations forward basis



### Daily spot gas prices, Aug 1 (\$/MMBtu)

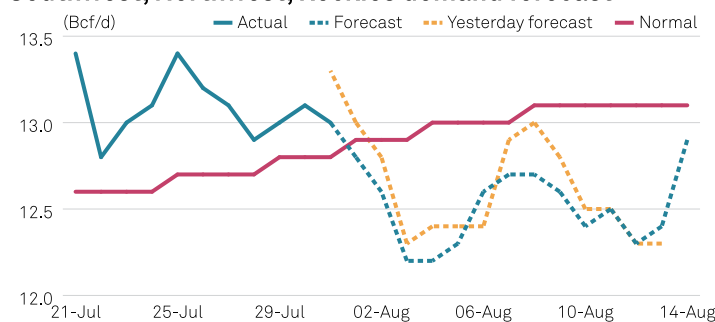
	Midpoint	+/-	Absolute	Common	Vol.	Deals
<b>Rockies/Northwest</b>						
Cheyenne Hub	2.195	-0.050	2.075-2.250	2.150-2.240	262	53
CIG, Rockies	2.215	-0.055	2.190-2.250	2.200-2.230	50	8
GTN, Kingsgate	3.400	-0.350	3.200-3.500	3.325-3.475	25	7
Kern River, Opal	3.880	-0.120	3.770-4.050	3.810-3.950	221	49
NW, Can. border (Sumas)	3.900	-0.050	3.800-4.000	3.850-3.950	127	21
NW, Rocky Mtn. Pool	2.935	-0.600	2.750-3.500	2.750-3.125	42	10
NW, south of Green River	2.920	-0.650	2.750-3.500	2.750-3.110	72	12
NW, Wyo. pool	3.890	-0.095	3.800-4.050	3.830-3.955	229	50
PG&E, Malin	3.925	-0.105	3.820-3.965	3.890-3.960	492	120
Questar, Rockies	3.770	-0.090	3.700-3.800	3.745-3.795	27	5
Stanfield, Ore.	3.875	-0.110	3.850-3.920	3.860-3.895	85	24
TCPL Alberta, AECO-C*	2.385	-0.040	2.355-2.460	2.360-2.410	611	97
Westcoast, station 2*	1.905	-0.415	1.720-2.000	1.835-1.975	102	26
White River Hub	2.930	-0.500	2.600-3.500	2.705-3.155	132	37
<b>Southwest</b>						
El Paso, Bondad	2.940	-0.460	2.620-3.350	2.760-3.125	206	46
El Paso, Permian	2.215	+1.300	2.100-2.300	2.165-2.265	943	151
El Paso, San Juan	2.985	-0.615	2.600-3.500	2.760-3.210	616	94
El Paso, South Mainline	4.140	-0.010	4.000-4.190	4.095-4.190	154	45
El Paso, West Texas	2.215	+1.350	2.100-2.270	2.175-2.260	888	141
Kern River, delivered	4.155	-0.650	4.050-4.250	4.105-4.205	388	89
PG&E, city-gates	5.070	-0.040	5.020-5.200	5.025-5.115	691	146
PG&E, South	4.055	+0.115	3.750-4.200	3.945-4.170	73	16
SoCal Gas	4.830	-0.055	4.100-6.400	4.255-5.405	379	93
SoCal Gas, city-gate	7.770	-0.435	7.500-7.980	7.650-7.890	299	75
Transwestern, Permian	2.085	+2.300	2.050-2.100	2.075-2.100	22	5
Transwestern, San Juan	2.925	-0.760	2.650-3.500	2.715-3.140	118	22
Waha	2.210	+1.200	2.080-2.300	2.155-2.265	976	141

\* TCPL Alberta, AECO-C and Westcoast station 2 prices are in Canadian dollars per gigajoule.

### Platts spark spreads, Aug 1 (\$/MWh)

	@7k	30-day avg	@12k	30-day avg
<b>West</b>				
Mid-Columbia on-peak	83.55	74.31	63.80	57.71
Mid-Columbia off-peak	27.14	36.02	7.39	19.42
CAISO NP15 on-peak	24.28	25.73	-1.27	2.56
CAISO NP15 off-peak	17.03	18.91	-8.52	-4.26
Palo Verde on-peak	56.45	70.15	15.42	41.57
Palo Verde off-peak	23.57	33.36	-17.46	4.78
CAISO SP15 on-peak	63.52	48.20	39.09	26.24
CAISO SP15 off-peak	40.36	27.44	15.93	5.49

### Southwest, Northwest, Rockies demand forecast



## Hourly Indices

### System-wide renewable generation curtailments (MW)

	Symbol	31-Jul	30-Jul
Cal ISO Solar			
		Local	
On-peak	CALSP00	116.12	111.79
Off-peak	CALSO00	0.00	0.00
		System	
On-peak	CASSP00	4.31	28.96
Off-peak	CASSO00	0.00	0.00
Cal ISO Wind			
		Local	
On-peak	CALWP00	0.72	0.96
Off-peak	CALWO00	0.72	0.84
		System	
On-peak	CASWP00	0.00	0.00
Off-peak	CASWO00	0.00	0.00
SPP Wind			
On-peak	SPPWP00	885.47	780.60
Off-peak	SPPW000	9976.31	2989.92

### Curtailment by hour (MW), Jul 31

Hour	Cal ISO Solar		Cal ISO Wind		SPP Wind
	Local	System	Local	System	
1	0.00	0.00	0.18	0.00	1665.30
2	0.00	0.00	0.11	0.00	1525.54
3	0.00	0.00	0.68	0.00	1415.09
4	0.00	0.00	0.32	0.00	1067.52
5	0.00	0.00	0.00	0.00	920.84
6	0.00	0.00	0.00	0.00	655.48
7	0.31	0.00	0.00	0.00	123.53
8	0.87	0.00	0.00	0.00	0.00
9	5.62	0.00	0.00	0.00	0.00
10	10.57	0.00	0.00	0.00	0.00
11	14.57	0.00	0.00	0.00	2.47
12	17.18	1.62	0.00	0.00	0.00
13	17.10	0.42	0.55	0.00	0.06
14	17.05	0.00	0.00	0.00	22.28
15	11.74	2.27	0.00	0.00	81.85
16	10.35	0.00	0.00	0.00	105.77
17	3.92	0.00	0.00	0.00	93.31
18	5.27	0.00	0.00	0.00	29.70
19	1.57	0.00	0.00	0.00	3.90
20	0.00	0.00	0.00	0.00	0.00
21	0.00	0.00	0.00	0.00	3.19
22	0.00	0.00	0.17	0.00	419.41
23	0.00	0.00	0.00	0.00	1319.78
24	0.00	0.00	0.00	0.00	1406.76

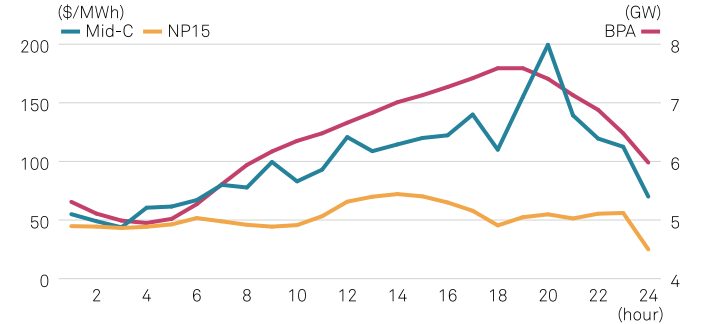
### Mid-C hourly bilateral indexes (\$/MWh)

	Symbol	31-Jul	Range	Deals	Volume (MW)
On-peak	MC RTP00	117.67	77.75-199.50	54	2527
Off-peak	MC RT000	64.91	43.75-112.50	22	1253

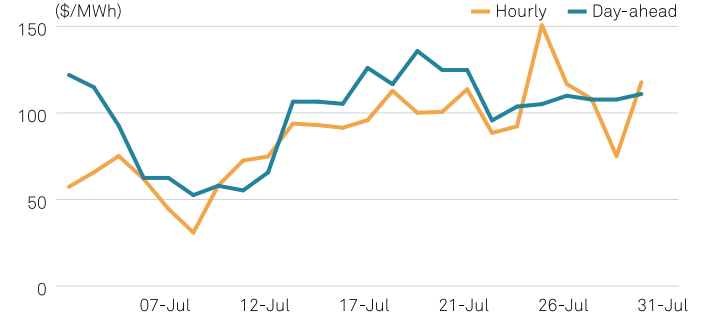
Hour	Symbol	31-Jul	Range	Deals	Volume (MW)	Jul-23 ending
1	MC RTH01	55.00	55.00-55.00	1	100	52.12
2	MC RTH02	49.00	30.00-55.00	3	144	49.03
3	MC RTH03	43.75	20.00-55.00	3	164	49.06
4	MC RTH04	60.50	45.00-70.00	5	227	48.94
5	MC RTH05	61.50	48.00-70.00	4	214	48.46
6	MC RTH06	67.00	48.00-80.00	5	304	51.07
7	MC RTH07	80.00	80.00-80.00	1	100	54.22
8	MC RTH08	77.75	70.00-80.00	2	130	56.90
9	MC RTH09	99.50	70.00-125.00	6	280	54.05
10	MC RTH10	83.00	70.00-90.00	4	185	56.38
11	MC RTH11	93.00	70.00-125.00	6	220	60.18
12	MC RTH12	120.75	85.00-125.00	3	235	65.14
13	MC RTH13	108.75	85.00-110.00	3	108	72.16
14	MC RTH14	114.50	110.00-115.00	2	57	75.64
15	MC RTH15	120.00	120.00-120.00	2	60	81.08
16	MC RTH16	122.25	122.25-122.25	1	50	88.72
17	MC RTH17	140.00	140.00-140.00	1	75	101.09
18	MC RTH18	110.00	110.00-110.00	1	73	112.19
19	MC RTH19	155.00	135.00-175.00	5	200	123.52
20	MC RTH20	199.50	135.00-240.00	8	438	129.23
21	MC RTH21	139.25	126.00-160.00	5	185	115.69
22	MC RTH22	119.50	100.00-126.00	5	181	95.68
23	MC RTH23	112.50	112.50-112.50	7	448	78.27
24	MC RTH24	70.00	70.00-70.00	1	100	62.77

### Mid-C and NP15 hourly prices vs BPA hourly demand



Sources: S&P Global Commodity Insights, BPA, CAISO

### Mid-C day-ahead/hourly on-peak price comparison



Source: S&P Global Commodity Insights

## Global Bitcoin Quarq Spreads

### Spot European, July 31 (\$/MWh)

#### Nordics, Germany, France, Spain

	Spread	Renewable-Hydro	Renewable-Wind	Renewable-Solar
NO1	61.97	54.93	54.95	54.95
NO2	30.40	23.36	23.39	23.39
NO3	62.23	55.20	55.22	55.22
NO4	74.26	67.22	67.25	67.25
NO5	61.97	54.93	54.95	54.95
SE1	61.77	54.73	54.75	54.75
SE2	61.77	54.73	54.75	54.75
SE3	61.77	54.73	54.75	54.75
SE4	61.77	54.73	54.75	54.75
FI	40.41	33.37	33.40	33.40
DK1	23.62	16.58	16.60	16.60
DK2	23.53	16.49	16.52	16.52
Systemwide	57.69	50.65	50.67	50.67
Germany	19.90	12.87	12.89	12.89
France	21.69	14.65	14.67	14.67
Spain	0.11	-6.93	-6.91	-6.91

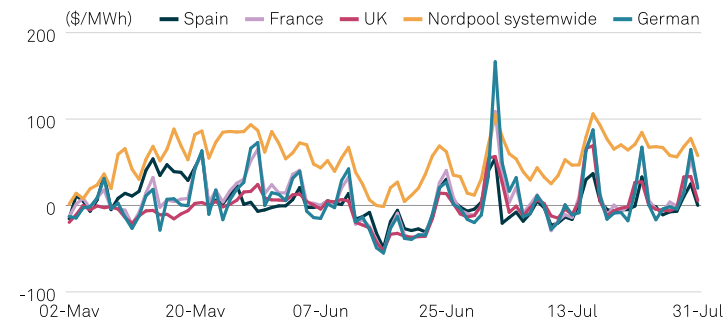
#### United Kingdom

	Spread	Renewable-Non-Biomass	Renewable-Biomass
GB	5.73	-7.77	-6.87

### Spot North American, July 31 (\$/MWh)

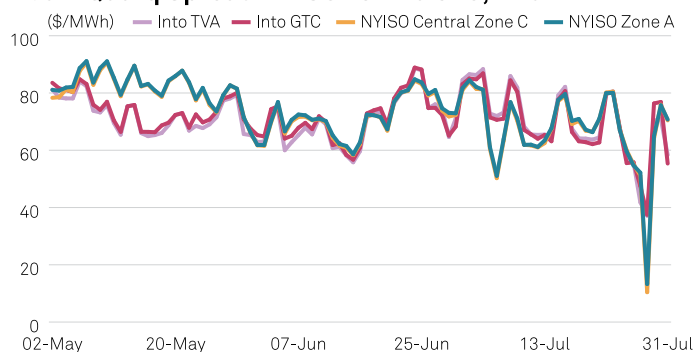
	Spread	Renewable-Any Tech	Renewable-Solar
<b>Texas</b>			
ERCOT AEN Zone	-61.52	-63.97	-64.22
ERCOT Bus Average	-58.74	-61.19	-61.44
ERCOT CPS Zone	-63.49	-65.94	-66.19
ERCOT Houston Zone	-58.93	-61.38	-61.63
ERCOT Hub Average	-58.75	-61.20	-61.45
ERCOT LCRA Zone	-61.72	-64.17	-64.42
ERCOT North Zone	-61.04	-63.49	-63.74
ERCOT Rayburn Zone	-62.78	-65.23	-65.48
ERCOT South Zone	-51.09	-53.54	-53.79
ERCOT West Zone	-62.99	-65.44	-65.69
<b>Midwest</b>			
SPP North Hub	69.74	67.29	67.04
SPP South Hub	55.81	53.36	53.11
<b>Georgia</b>			
Into GTC	55.36	52.91	52.66
<b>Kentucky</b>			
Into TVA	58.36	55.91	55.66
Indiana Hub	66.34	63.89	63.64
<b>New York</b>			
NYISO Zone A	70.73	68.28	68.03
NYISO Zone C	70.42	67.97	67.72
NYISO Zone D	71.58	69.13	68.88
NYISO Zone E	70.06	67.61	67.36
<b>California</b>			
CAISO NP16 Gen Hub	29.87	27.42	27.17
CAISO SP15 Gen Hub	-0.33	-2.78	-3.03
<b>Washington</b>			
Mid-Columbia	4.73	2.28	2.03

### Bitcoin Quarq spreads Nordics vs Germany, UK, France, Spain Spot baseload



Source: S&amp;P Global Commodity Insights

### Bitcoin Quarq Spread NYISO vs Into GTC, Into TVA



Source: S&amp;P Global Commodity Insights

## Renewable Capture Prices

### US Renewable Capture Prices continue sliding except in SPP, ERCOT

- CAISO, MISO, Northeast slide with steady-to-lower demand
- ERCOT demand, lower generation support higher prices

Wind and solar Renewable Capture Prices continued sliding July 30 in the California, Midcontinent, New England and New York Independent System Operators as demand remained steady to weaker.

In the CAISO NP15 and ZP26 generation hubs, solar capture prices decreased by 8.81% and 10.13%, while it increased by 4.07% in the SP15 hub. MISO Indiana, Louisiana and Minnesota capture prices settled in the \$30s, with the exception of the Minnesota Hub Wind price, which was down to near \$25.25/MWh. In the Northeast ISOs, capture prices were down between \$14 and \$27.

#### Capture prices slide in ERCOT, SPP

Meanwhile, Electric Reliability Council of Texas and Southwest Power Pool peakload demand increased, pushing up capture prices. SPP reported its peakload demand rising 3.05% even as the average daily temperature cooled off 3.5 degrees Fahrenheit into the low 80s F. ERCOT average temperature remained in the high 80s, however, even gaining 0.7 F to reach 89.4 F.

Lifted by demand as well as lower wind generation, ERCOT Wind Weighted Average Locational Marginal Prices increased up to 132.91% in the South Zone while North, South and West Hub solar capture prices all increased about 18.39%. At the same time, SPP North and South Hub Wind capture prices were up about \$2. Conversely, SPP wind curtailments were higher by about 1.11 GWh, according to Platts Renewable Curtailment Index.

Platts is part of S&P Global Commodity Insights.

— Nicole Baquerizo

### Renewable Capture Price Indexes (\$/MWh)

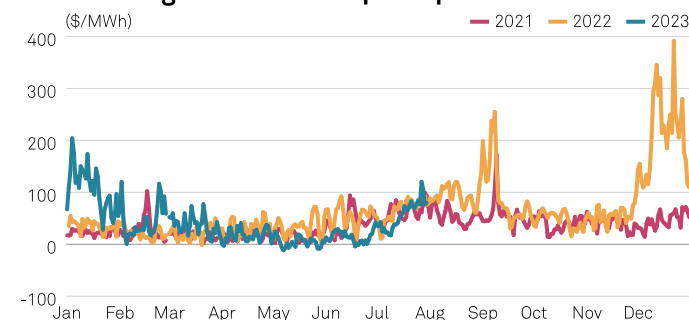
Date: 30-Jul\*

Index	Symbol	Current	Previous
<b>CAISO</b>			
CAISO NP15 Gen Hub Solar	ACPIC00	50.12	54.96
CAISO NP15 Gen Hub Wind	ACPIA00	57.59	62.61
CAISO SP15 Gen Hub Solar	ACPID00	79.99	76.86
CAISO SP15 Gen Hub Wind	ACPIB00	92.29	113.07
CAISO ZP26 Gen Hub Solar	ACPIE00	45.33	50.44
<b>ERCOT</b>			
ERCOT North Hub Solar	ACPIL00	70.81	59.92
ERCOT North Zn Weighted Average LMP Wind	ACPIL00	30.27	23.37
ERCOT South Hub Solar	ACPIN00	67.39	56.82
ERCOT South Zn Weighted Average LMP Wind	ACPIN00	25.41	10.91
ERCOT West Hub Solar	ACPIW00	71.16	60.11
ERCOT West Zn Weighted Average LMP Wind	ACPIW00	34.23	23.47
<b>ISONE</b>			
ISONE Internal Hub Solar	ACPXE00	25.42	52.33
ISONE Internal Hub Wind	ACPXD00	27.94	48.51
<b>MISO</b>			
MISO Indiana Hub Solar	ACPIT00	34.85	43.04
MISO Indiana Hub Wind	ACPIR00	30.41	32.90
MISO Louisiana Hub Solar	ACPIU00	36.78	37.16
MISO Minnesota Hub Solar	ACPII00	35.41	45.87
MISO Minnesota Hub Wind	ACPIQ00	25.19	30.88
<b>NYISO</b>			
NYISO Hudson Valley Zone Wind	ACPXB00	28.46	55.23
NYISO West Zone Wind	ACPXC00	27.21	42.13
<b>PJM*</b>			
PJM Dominion Hub Solar	ACPXA00	141.12	50.98
PJM Dominion Hub Wind	ACPXD00	104.52	44.62
PJM Northern Illinois Hub Solar	ACPIZ00	151.57	51.72
PJM Northern Illinois Hub Wind	ACPIN00	65.23	43.29
PJM Western Hub Solar	ACPIY00	152.06	51.10
PJM Western Hub Wind	ACPIV00	92.80	43.84
<b>SPP</b>			
SPP North Hub Wind	ACPIN00	30.28	28.31
SPP South Hub Wind	ACPIS00	30.67	28.53

\*Data is lagged 1 day, PJM data is lagged 4 days

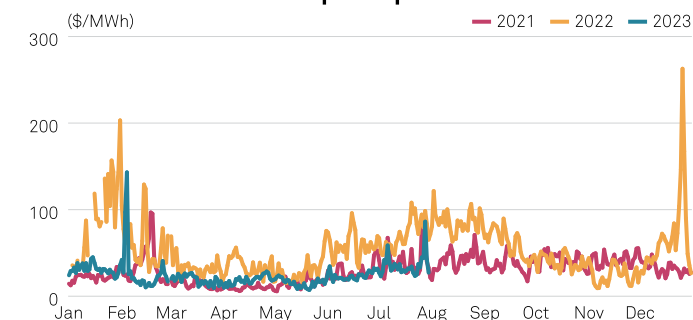
Source: S&P Global Commodity Insights

#### CAISO SP15 gen hub solar capture price



Source: S&P Global Commodity Insights

#### NYISO west zone wind capture price



Source: S&P Global Commodity Insights

## Renewable Penetration, Solar

### Penetration Indices, Solar (%)

	Symbol	31-Jul	30-Jul
Cal ISO			
On-peak	RPCSP00	15.28	17.95
Off-peak	RPCS000	0.02	0.01
SPP			
On-peak	RPSSP00	0.29	0.34
Off-peak	RPSS000	0.00	0.00
ERCOT			
On-peak	RPESP00	10.22	11.13
Off-peak	RPES000	0.00	0.00
MISO			
On-peak	RP MSP00	1.72	1.89
Off-peak	RPMS000	0.02	0.01
PJM			
On-peak	RPPSP00	2.16	2.56
Off-peak	RPPS000	0.00	0.00
NYISO			
On-peak	RPNSP00	1.92	2.14
Off-peak	RPNS000	1.88	1.83
ISO New England			
On-peak	RPISP00	1.76	1.99
Off-peak	RPIS000	0.00	0.05

### Hourly Penetration, Solar (%), Jul 31

Hour	Symbol	Cal ISO	Symbol	SPP	Symbol	ERCOT	Symbol	MISO	Symbol	PJM	Symbol	NYISO	Symbol	ISONE
1	RPCSC01	0.02	RPSSC01	0.00	RPESC01	0.00	RPMSC01	0.00	RPPSC01	0.00	RPNSC01	1.91	RPISC01	0.00
2	RPCSC02	0.02	RPSSC02	0.00	RPESC02	0.00	RPMSC02	0.00	RPPSC02	0.00	RPNSC02	1.89	RPISC02	0.00
3	RPCSC03	0.03	RPSSC03	0.00	RPESC03	0.00	RPMSC03	0.00	RPPSC03	0.00	RPNSC03	1.93	RPISC03	0.00
4	RPCSC04	0.02	RPSSC04	0.00	RPESC04	0.00	RPMSC04	0.00	RPPSC04	0.00	RPNSC04	2.01	RPISC04	0.00
5	RPCSC05	0.02	RPSSC05	0.00	RPESC05	0.00	RPMSC05	0.00	RPPSC05	0.00	RPNSC05	2.01	RPISC05	0.00
6	RPCSC06	0.02	RPSSC06	0.00	RPESC06	0.00	RPMSC06	0.12	RPPSC06	0.00	RPNSC06	1.97	RPISC06	0.00
7	RPCSC07	1.83	RPSSC07	0.00	RPESC07	0.01	RPMSC07	0.55	RPPSC07	0.03	RPNSC07	1.94	RPISC07	0.20
8	RPCSC08	12.66	RPSSC08	0.00	RPESC08	2.88	RPMSC08	1.89	RPPSC08	0.84	RPNSC08	1.93	RPISC08	0.93
9	RPCSC09	19.07	RPSSC09	0.02	RPESC09	13.11	RPMSC09	2.45	RPPSC09	2.54	RPNSC09	1.99	RPISC09	1.99
10	RPCSC10	21.71	RPSSC10	0.23	RPESC10	17.44	RPMSC10	2.54	RPPSC10	3.62	RPNSC10	2.27	RPISC10	2.85
11	RPCSC11	23.57	RPSSC11	0.47	RPESC11	17.61	RPMSC11	2.62	RPPSC11	3.91	RPNSC11	2.46	RPISC11	3.51
12	RPCSC12	25.75	RPSSC12	0.51	RPESC12	17.20	RPMSC12	2.64	RPPSC12	3.79	RPNSC12	2.49	RPISC12	3.79
13	RPCSC13	24.88	RPSSC13	0.49	RPESC13	16.04	RPMSC13	2.40	RPPSC13	3.57	RPNSC13	2.31	RPISC13	3.44
14	RPCSC14	23.81	RPSSC14	0.46	RPESC14	14.98	RPMSC14	2.39	RPPSC14	3.36	RPNSC14	2.05	RPISC14	2.97
15	RPCSC15	22.70	RPSSC15	0.43	RPESC15	14.07	RPMSC15	2.31	RPPSC15	3.19	RPNSC15	1.96	RPISC15	2.72
16	RPCSC16	21.77	RPSSC16	0.41	RPESC16	13.42	RPMSC16	2.25	RPPSC16	2.96	RPNSC16	1.85	RPISC16	2.59
17	RPCSC17	20.14	RPSSC17	0.39	RPESC17	12.71	RPMSC17	2.05	RPPSC17	2.50	RPNSC17	1.83	RPISC17	1.72
18	RPCSC18	15.77	RPSSC18	0.38	RPESC18	11.56	RPMSC18	1.71	RPPSC18	2.02	RPNSC18	1.75	RPISC18	0.95
19	RPCSC19	8.77	RPSSC19	0.37	RPESC19	8.89	RPMSC19	1.17	RPPSC19	1.50	RPNSC19	1.55	RPISC19	0.42
20	RPCSC20	1.85	RPSSC20	0.34	RPESC20	3.36	RPMSC20	0.48	RPPSC20	0.66	RPNSC20	1.40	RPISC20	0.10
21	RPCSC21	0.27	RPSSC21	0.13	RPESC21	0.21	RPMSC21	0.03	RPPSC21	0.07	RPNSC21	1.40	RPISC21	0.01
22	RPCSC22	0.00	RPSSC22	0.02	RPESC22	0.01	RPMSC22	0.00	RPPSC22	0.00	RPNSC22	1.46	RPISC22	0.00
23	RPCSC23	0.00	RPSSC23	0.00	RPESC23	0.01	RPMSC23	0.00	RPPSC23	0.00	RPNSC23	1.60	RPISC23	0.00
24	RPCSC24	0.00	RPSSC24	0.00	RPESC24	0.00	RPMSC24	0.00	RPPSC24	0.00	RPNSC24	1.68	RPISC24	0.00

## Renewable Penetration, Wind

### Penetration Indices, Wind (%)

	Symbol	31-Jul	30-Jul
Cal ISO			
On-peak	RPCWP00	5.56	6.79
Off-peak	RPCWO00	11.21	11.25
SPP			
On-peak	RPSWP00	19.45	15.55
Off-peak	RPSWO00	27.64	27.37
ERCOT			
On-peak	RPEWP00	9.77	8.49
Off-peak	RPEWO00	20.30	18.99
MISO			
On-peak	RPMWP00	3.78	2.13
Off-peak	RPMWO00	7.90	5.31
PJM			
On-peak	RPPWP00	0.56	1.12
Off-peak	RPPWO00	0.68	0.90
NYISO			
On-peak	RPNWP00	1.95	1.41
Off-peak	RPNWO00	2.90	1.84
ISO New England			
On-peak	RPIWP00	1.76	3.05
Off-peak	RPIWO00	1.86	3.89

### Hourly Penetration, Wind (%), Jul 31

Hour	Symbol	Cal ISO	Symbol	SPP	Symbol	ERCOT	Symbol	MISO	Symbol	PJM	Symbol	NYISO	Symbol	ISONE
1	RPCWC01	11.77	RPSWC01	25.87	RPEWC01	19.32	RPMWC01	7.42	RPPWC01	0.82	RPNWC01	4.22	RPIWC01	1.79
2	RPCWC02	11.56	RPSWC02	26.79	RPEWC02	19.84	RPMWC02	7.76	RPPWC02	0.76	RPNWC02	4.00	RPIWC02	1.96
3	RPCWC03	11.13	RPSWC03	29.37	RPEWC03	20.48	RPMWC03	7.98	RPPWC03	0.72	RPNWC03	4.05	RPIWC03	2.30
4	RPCWC04	11.38	RPSWC04	30.43	RPEWC04	20.42	RPMWC04	8.19	RPPWC04	0.76	RPNWC04	3.55	RPIWC04	2.11
5	RPCWC05	11.27	RPSWC05	30.00	RPEWC05	20.40	RPMWC05	7.80	RPPWC05	0.70	RPNWC05	3.07	RPIWC05	1.84
6	RPCWC06	11.50	RPSWC06	31.13	RPEWC06	19.49	RPMWC06	7.22	RPPWC06	0.57	RPNWC06	2.83	RPIWC06	1.78
7	RPCWC07	10.92	RPSWC07	32.05	RPEWC07	17.80	RPMWC07	6.51	RPPWC07	0.64	RPNWC07	2.99	RPIWC07	1.86
8	RPCWC08	8.48	RPSWC08	30.99	RPEWC08	15.09	RPMWC08	5.57	RPPWC08	0.70	RPNWC08	2.55	RPIWC08	1.47
9	RPCWC09	6.07	RPSWC09	28.71	RPEWC09	9.86	RPMWC09	4.39	RPPWC09	0.64	RPNWC09	1.56	RPIWC09	1.30
10	RPCWC10	4.35	RPSWC10	24.06	RPEWC10	8.78	RPMWC10	3.47	RPPWC10	0.59	RPNWC10	1.54	RPIWC10	1.17
11	RPCWC11	3.17	RPSWC11	18.67	RPEWC11	7.51	RPMWC11	3.09	RPPWC11	0.48	RPNWC11	2.63	RPIWC11	1.39
12	RPCWC12	2.92	RPSWC12	17.46	RPEWC12	5.11	RPMWC12	2.96	RPPWC12	0.59	RPNWC12	2.88	RPIWC12	1.97
13	RPCWC13	2.63	RPSWC13	17.26	RPEWC13	5.45	RPMWC13	2.81	RPPWC13	0.65	RPNWC13	3.03	RPIWC13	2.48
14	RPCWC14	2.65	RPSWC14	16.40	RPEWC14	6.05	RPMWC14	2.84	RPPWC14	0.59	RPNWC14	2.50	RPIWC14	2.42
15	RPCWC15	2.94	RPSWC15	16.04	RPEWC15	7.23	RPMWC15	2.76	RPPWC15	0.65	RPNWC15	2.51	RPIWC15	2.42
16	RPCWC16	3.05	RPSWC16	15.64	RPEWC16	7.93	RPMWC16	2.79	RPPWC16	0.67	RPNWC16	1.99	RPIWC16	2.65
17	RPCWC17	3.69	RPSWC17	15.21	RPEWC17	8.36	RPMWC17	2.74	RPPWC17	0.66	RPNWC17	1.81	RPIWC17	1.93
18	RPCWC18	4.56	RPSWC18	14.59	RPEWC18	8.87	RPMWC18	2.89	RPPWC18	0.56	RPNWC18	1.79	RPIWC18	1.76
19	RPCWC19	6.89	RPSWC19	14.19	RPEWC19	10.14	RPMWC19	3.17	RPPWC19	0.55	RPNWC19	1.13	RPIWC19	1.69
20	RPCWC20	8.39	RPSWC20	14.62	RPEWC20	11.31	RPMWC20	3.76	RPPWC20	0.39	RPNWC20	0.75	RPIWC20	1.09
21	RPCWC21	8.92	RPSWC21	16.32	RPEWC21	12.16	RPMWC21	4.64	RPPWC21	0.30	RPNWC21	0.66	RPIWC21	1.18
22	RPCWC22	9.32	RPSWC22	19.06	RPEWC22	14.70	RPMWC22	6.16	RPPWC22	0.35	RPNWC22	0.90	RPIWC22	1.35
23	RPCWC23	10.26	RPSWC23	22.13	RPEWC23	18.56	RPMWC23	7.93	RPPWC23	0.47	RPNWC23	0.91	RPIWC23	1.50
24	RPCWC24	10.81	RPSWC24	25.40	RPEWC24	23.91	RPMWC24	8.91	RPPWC24	0.67	RPNWC24	0.59	RPIWC24	1.61



**Emissions Markets, Jul 27** (Current Year Vintage)

	Symbol	Close	Change
RGGI Current Month Strip (\$/Allowance)	ARJAF00	13.850	0.150
RGGI Next Month Strip (\$/Allowance)	ARJAG00	13.880	0.120
RGGI Next December Strip (\$/Allowance)	ARECA04	14.170	0.110
CCA Current Month Strip (\$/Allowance)	ARJAH00	34.100	0.380
CCA Next Month Strip (\$/Allowance)	ARJAI00	34.290	0.390
CCA Next December Strip (\$/Allowance)	ARECB04	35.040	0.370
CCO Current Month Strip (\$/mt)	ARJAJ00	19.000	0.000
CCO Next Month Strip (\$/mt)	ARJAK00	19.550	-0.150
CCO Next December Strip (\$/mt)	ARECC04	19.750	-0.250

**Renewable Energy Certificate Markets, Jul 27** (\$/MWh)

	Symbol	Close	Change
<b>RECs Current Year Vintage*</b>			
Connecticut REC Class 1	RECCTC1	39.500	0.100
Massachusetts REC Class 1	RECMAC1	39.250	0.250
Maine REC Class 1	ARFAQ00	35.500	0.250
New Hampshire REC Class 1	ARFAV00	39.000	0.500
Rhode Island REC Existing	ARGAB00	10.850	0.000
Rhode Island REC New	ARGAC00	39.000	0.500
Vermont REC Tier 1	ARGAG00	NA	NA
NEPOOL REC Dual Qualified Class 1	ARHAA00	39.500	0.150
Maryland REC Tier 1	RECMTD1	31.750	0.100
New Jersey REC Class 1	RECNTJ1	34.300	-0.150
New Jersey REC Class 2	AREAW00	37.250	0.000
Pennsylvania AEC Tier 1	RECPAT1	34.150	-0.150
Ohio non-Solar REC	RECOHI0	7.650	0.250
DC REC Tier 1	ARGA000	26.000	0.500
Delaware REC Tier 1	ARGAS00	NA	NA
Virginia non-Solar REC	ARGAW00	35.000	-1.000
PJM Tri-Qualified REC Tier 1	ARHAD00	34.400	-0.100
Texas non-Solar Compliance REC	RECTX00	2.300	0.050
Texas Green-e Eligible Wind REC	ARFAI00	2.300	0.050
Michigan non-Solar REC	ARFAM00	2.750	0.000
New York REC Tier 1	ARGAK00	29.500	0.500
New York Wind REC	ARGAM00	21.750	0.000
M-RETS Compliance REC	ARHAF00	2.300	0.200
from CRS Listed Facilities FH			
M-RETS Compliance REC	ARHAG00	2.650	0.000
from CRS Listed Facilities BH			
NAR Any REC	ARHAI00	2.200	0.050
NAR Any Green-e Eligible REC	ARHAK00	2.200	0.050
NAR Green-e Eligible Wind REC	ARHAN00	2.200	0.050
California Bundled REC Bucket 1	RECCAB1	49.000	0.000
California Bundled REC Bucket 2	RECCAB2	31.000	0.000
California Bundled REC Bucket 3	RECCAB3	5.750	0.000
National Green-e Certified REC Any Technology	RECUSAV	2.450	0.050
National Green-e Certified Wind	RECUSWV	2.450	0.050
<b>Solar RECs Current Year Vintage*</b>			
Massachusetts SREC 1	RECMAS0	322.000	0.500
Massachusetts SREC 2	ARHAW00	265.000	-2.000
Maryland SREC	RECMTS0	59.500	0.000
New Jersey SREC	RECNTJS0	219.000	1.000
Pennsylvania SAEC	RECPAS0	36.500	-2.500
Ohio SREC	RECOHSI	7.500	0.500
DC SREC	ARIAL00	430.000	2.000
Delaware SREC Class 1	ARIA000	NA	NA
Virginia In-State SREC \<1MW	ARIAX00	45.000	0.000
Texas SREC	ARIAR00	2.700	0.000
Texas Compliance SREC	ARIAT00	2.700	0.000
from CRS Listed Facilities			
New York SREC	ARIAE00	NA	NA
NAR SREC	ARJAA00	2.550	0.050
NAR SREC CRS Listed	ARJAC00	2.550	0.050

\*Prices are for the value of the environmental attribute of the renewable energy certificate only and do not include energy. Additional pricing for California Bundled RECs, National Voluntary RECs, additional Classes/Tiers, and Prior and Next year Vintages can be found on <https://dimensionspro.spglobal.com/>.

## M2MS Forward Curve - Natural gas

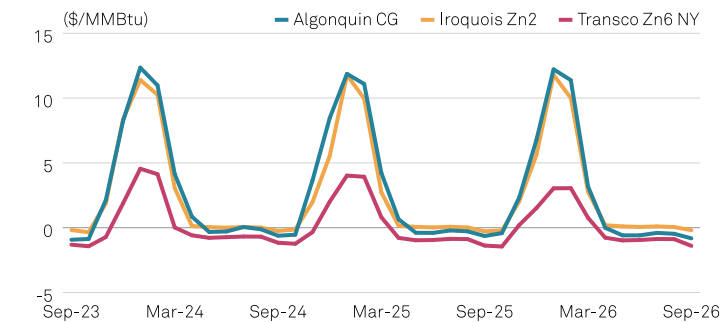
### Platts M2MS Forward Curve Gas, Aug 1 (\$/MMBtu)

Prompt Month: Sep. 2023

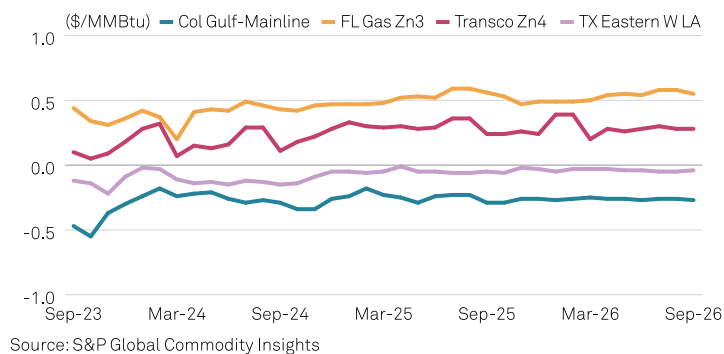
Hub	M2M forward basis	Change	Hub	M2M forward basis	Daily change
Algonquin, city-gates	-0.93	0.01	Northern, Ventura	-0.30	-0.01
Chicago city-gates	-0.28	-0.01	NW, Can. border (Sumas)	0.99	0.10
CIG, Rockies	-0.35	0.01	Panhandle, TX-Okla.	-0.42	-0.01
Columbia Gas, App.	-1.34	-0.03	PG&E, city-gate	2.65	0.10
Columbia Gulf, mainline	-0.47	-0.01	PG&E, Malin	1.39	0.10
Dawn, Ontario	-0.43	0.00	SoCal Gas	2.50	0.14
Eastern Gas, South	-1.55	-0.04	Southern Natural, LA	0.07	0.00
El Paso, Permian	-0.47	-0.03	TCPL Alberta, AECO-C*	-0.66	-0.02
El Paso, San Juan	0.88	0.00	Tennessee, zone 0	-0.35	-0.01
Florida Gas, zone 3	0.44	0.03	Transco, zone 4	0.10	0.01
Henry Hub*	2.56	-0.07	Transco, zone 6-NY	-1.31	0.00
Houston Ship Channel	-0.26	-0.01	Texas Eastern, M-3	-1.47	-0.05
Kern River, Opal	1.31	0.12	Waha	-0.49	-0.03
Mich Con city-gate	-0.34	-0.01			
NGPL, Midcontinent	-0.32	-0.01			
NGPL, Texok zone	-0.33	0.00			

\* Henry Hub is the reference point for all basis prices. The prompt-month futures price is shown for Henry Hub.

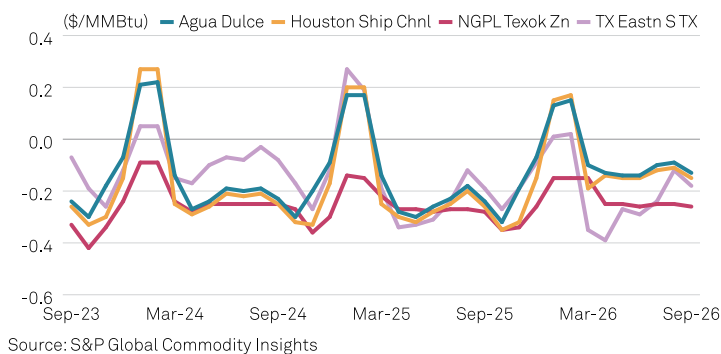
### Northeast forward basis



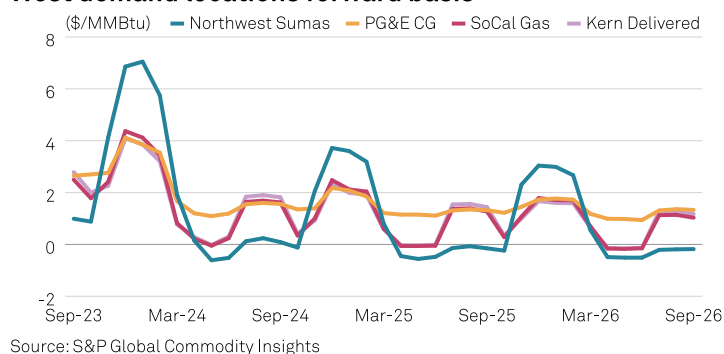
### Southeast forward basis



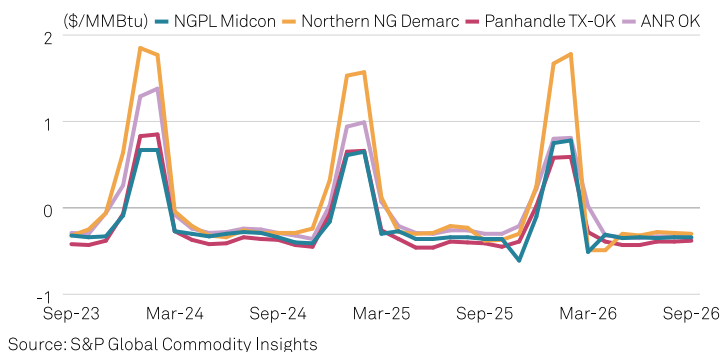
### East and South Texas forward basis



### West demand locations forward basis



### Midcontinent forward basis



## M2MS Forward Curve - Electricity

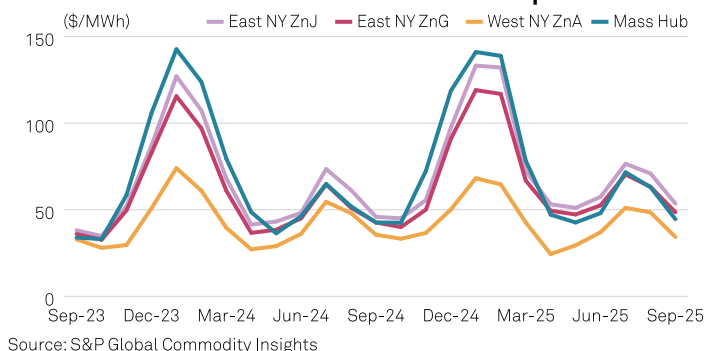
### Platts M2MS Forward Curve Electricity, Aug 1 (\$/MWh)

Prompt Month: Sep. 2023

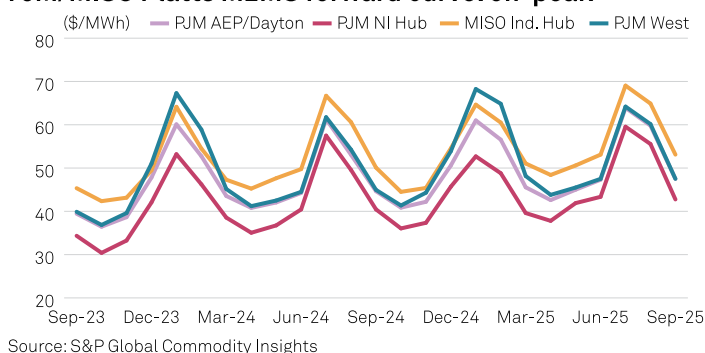
Hub	Prompt month	Change
AEP/Dayton	39.45	-1.05
East NY ZnG	36.00	-0.40
East NY ZnJ	38.15	-0.40
ERCOT - Houston	70.30	1.77
ERCOT - North	63.70	3.55
ERCOT - South	58.08	1.77
ERCOT - West	60.90	1.77
Indiana Hub	45.35	-0.85
Into Southern	41.26	-0.69
Mass Hub	33.95	-0.55
Mead	164.75	-9.37
MISO Louisiana Hub	41.85	-0.85
NI Hub	34.35	-1.05
North Path 15	92.60	-5.45
Ontario*	28.28	-0.14
Palo Verde	157.00	-8.95
PJM West	39.90	-1.15
South Path 15	100.05	-5.95
West NY ZnA	32.85	-0.40

All prices are on-peak. \*Ontario prices are in Canadian dollars

### Northeast Platts M2MS forward curve: on-peak



### PJM/MISO Platts M2MS forward curve: on-peak



### Platts M2MS Balance-of-the-month, AUG 1, (\$/MWh)

	Symbol	On-peak	Symbol	Off-peak
<b>Northeast</b>				
Mass Hub	EMHTB00	40.74	EMHUB00	29.86
N.Y. Zone G	ENGTB00	40.57	ENGUB00	28.81
N.Y. Zone J	ENJTB00	44.32	ENJUB00	30.21
N.Y. Zone A	ENATB00	37.37	ENaub00	25.58
Ontario*	EONTB00	37.97	EONUB00	29.31

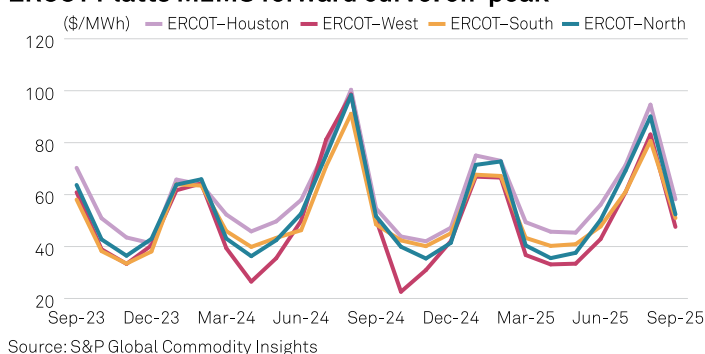
\*Ontario prices are in Canadian dollars

<b>PJM &amp; MISO</b>				
PJM West	EPJTB00	45.97	EPJUB00	25.43
AD Hub	EECTB00	45.29	EECUB00	25.68
NI Hub	ECETB00	41.59	ECEUB00	22.43
Indiana Hub	ECITB00	50.37	ECIUB00	28.13

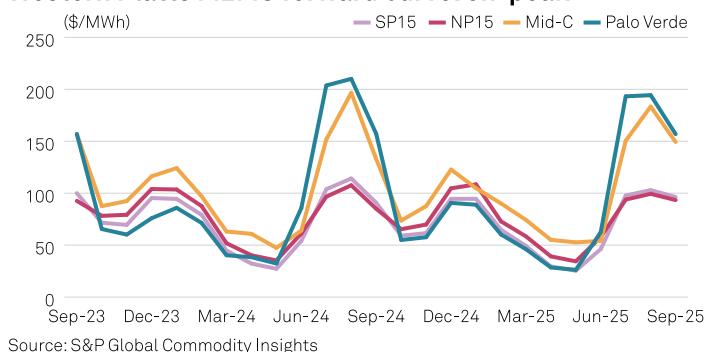
<b>Southeast &amp; Central</b>				
Southern Into	ESTTB00	45.36	ESTUB00	27.86
ERCOT North	ETNTB00	135.33	ETNUB00	52.52
ERCOT Houston	ETSTB00	133.58	ETSUB00	51.52
ERCOT West	ETWTB00	120.45	ETWUB00	55.16
ERCOT South	ETHTB00	115.78	ETHUB00	56.34

<b>Western</b>				
Mid-C	EMCTB00	159.92	EMCUB00	80.78
Palo Verde	EPVTB00	172.03	EPVUB00	101.22
Mead	EMDTB00	180.48	EMDUB00	106.58
NP15	ENPTB00	84.79	ENPUB00	71.99
SP15	ESPTB00	102.93	ESPUB00	72.27

### ERCOT Platts M2MS forward curve: on-peak



### Western Platts M2MS forward curve: on-peak



Platts Locations Natural Gas Daily Final Assessment Rationale

Platts Gas Daily indices are based on 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. Texas Eastern, ETX: Price of \$2.23/MMBtu was assessed flat to NGPL, Texok, based on recent daily gas trading and verified by ICE bid-offer activity.
  2. Texas Eastern, M-1 30: Price of \$2.31/MMBtu was assessed at a 5-cent discount to Texas Eastern, STX, based on ICE bid-offer

Platts oil prices, Aug 1

	(\$/b)	(\$/MMBtu)
Gulf Coast spot		
1% Resid (1)	88.83-88.85	14.21
HSFO (1)	82.50-82.52	13.20
Crude spot		
WTI (Sep) (2)	81.42-81.44	14.04
New York spot		
No.2 (1)	110.69-110.73	17.71
1% Resid (1)	84.99-85.01	13.60

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

activity and verified by recent daily gas trading. Platts is part of S&P Global Commodity Insights. This rationale applies to symbols found in the Market Data category GD listed at <http://plts.co/3z3y30qw7qh>.

NYMEX Henry Hub gas futures contract closings, Aug 1

Month		Platts Symbol	High	Low	Close	Change	Previous Day's Volume	Previous Day's Open Interest
Month 01	Sep 2023	MNNG001	2.675	2.531	2.560	-0.074	42419	325,732
Month 02	Oct 2023	MNNG002	2.778	2.644	2.672	-0.069	8014	106,895
Month 03	Nov 2023	MNNG003	3.168	3.046	3.075	-0.068	4824	108,073
Month 04	Dec 2023	MNNG004	3.584	3.471	3.507	-0.056	1414	54,510
Month 05	Jan 2024	MNNG005	3.807	3.703	3.725	-0.058	1911	86,083
Month 06	Feb 2024	MNNG006	3.731	3.637	3.659	-0.052	696	39,131
Month 07	Mar 2024	MNNG007	3.456	3.367	3.393	-0.048	709	73,556
Month 08	Apr 2024	MNNG008	3.166	3.079	3.112	-0.040	1248	68,169
Month 09	May 2024	MNNG009	3.153	3.065	3.099	-0.038	471	35,029
Month 10	Jun 2024	MNNG010	3.241	3.155	3.189	-0.040	519	16,383
Month 11	Jul 2024	MNNG011	3.344	3.258	3.291	-0.042	479	15,520
Month 12	Aug 2024	MNNG012	3.388	3.306	3.338	-0.041	139	14,982
Month 13	Sep 2024	MNNG013	3.363	3.280	3.313	-0.042	198	14,938
Month 14	Oct 2024	MNNG014	3.452	3.368	3.398	-0.043	197	38,021
Month 15	Nov 2024	MNNG015	3.805	3.727	3.754	-0.043	82	13,942
Month 16	Dec 2024	MNNG016	4.232	4.159	4.179	-0.041	55	18,654
Month 17	Jan 2025	MNNG017	4.508	4.452	4.459	-0.036	205	35,454
Month 18	Feb 2025	MNNG018	4.379	4.359	4.363	-0.034	5	8,033
Month 19	Mar 2025	MNNG019	4.006	3.972	3.975	-0.024	4	19,510
Month 20	Apr 2025	MNNG020	3.561	3.526	3.540	-0.021	27	23,588
Month 21	May 2025	MNNG021	3.535	3.514	3.517	-0.020	4	8,699
Month 22	Jun 2025	MNNG022	3.651	3.620	3.636	-0.019	6	6,497
Month 23	Jul 2025	MNNG023	3.777	3.745	3.761	-0.019	0	8,326
Month 24	Aug 2025	MNNG024	3.838	3.800	3.809	-0.017	0	3,498
Month 25	Sep 2025	MNNG025	3.774	3.774	3.774	-0.016	0	3,934
Month 26	Oct 2025	MNNG026	3.843	3.843	3.843	-0.016	0	9,189
Month 27	Nov 2025	MNNG027	4.183	4.183	4.183	-0.016	0	2,348
Month 28	Dec 2025	MNNG028	4.561	4.561	4.561	-0.015	0	2,549
Month 29	Jan 2026	MNNG029	4.794	4.794	4.794	-0.015	0	4,418
Month 30	Feb 2026	MNNG030	4.584	4.584	4.584	-0.013	0	1,216
Month 31	Mar 2026	MNNG031	4.107	4.107	4.107	-0.015	0	1,334
Month 32	Apr 2026	MNNG032	3.586	3.586	3.586	-0.016	0	1,695
Month 33	May 2026	MNNG033	3.536	3.536	3.536	-0.016	0	882
Month 34	Jun 2026	MNNG034	3.637	3.637	3.637	-0.019	0	698
Month 35	Jul 2026	MNNG035	4.584	4.584	3.745	-0.020	0	759
Month 36	Aug 2026	MNNG036	3.784	3.784	3.784	-0.021	0	875
Total		MNNG000					214,569	1,186,267

## In The News

### Distillates lead crude futures prices as supply remains tight

- ULSD crack spread soars \$4 midday
- Distillate prices high despite weak trucking
- European diesel market remains tight

Crude oil futures settled mixed Aug. 1 as distillates led the complex over a persistent tight supply situation in the US and Europe, leading crack spreads to soar nearly \$4 during the day before settling slightly up on the day.

NYMEX front-month ULSD settled at \$3.0234/gal, up 3.79 cents, while NYMEX front-month RBOB fell 2.25 cents to settle at \$2.8730/gal.

NYMEX front-month crude fell 43 cents to settle at \$81.37/b, while ICE front-month Brent settled at \$84.91/b, down 52 cents.

"The diesel crack spread is [also] hitting the highest level since October of 2022 as global supply tightness is causing a major run-up in price," Phil Flynn, analyst at PRICE Futures Group, said.

US gasoline cracks settled higher on the year amid peak seasonal demand, as margins were strong and refinery runs were heightened due to minimal outages.

The NYMEX August ULSD crack spread against WTI was at \$45.61/b Aug. 1, up \$2.02 on the day and up from roughly \$41.34/b in August 2022.

The NYMEX August RBOB crack against WTI settled at \$39.30/b, down 51 cents on the day and but still up from roughly \$22.72/b a year ago.

Supply in the US was forecast to remain tight, as analysts polled by S&P Global Commodity Insights on average expected US gasoline stocks to decline by 1 million barrels in the week ended July 28 and expected distillate stocks to fall by 400,000 barrels.

US gasoline imports have also slipped, with S&P Global Commodities at Sea data showing 600,000 b/d imported the week ended July 28, down from more than 1 million b/d in early June. With the bulk of gasoline imports arriving on the US Atlantic Coast, the slowdown could be bullish for the New York-delivered NYMEX RBOB futures contract.

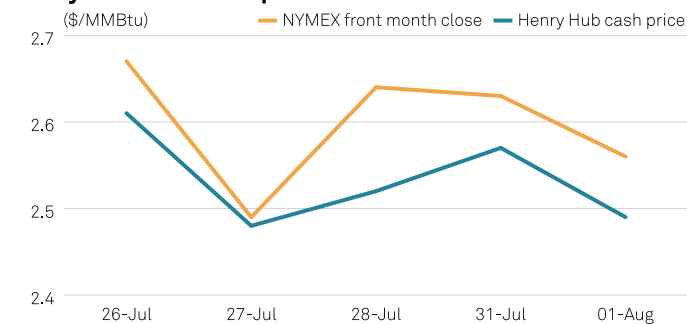
Refiners are forecast to have increased net crude inputs as well in the week ended July 28. Net crude inputs at 16.5 million b/d in the week ended July 21 had fallen 180,000 b/d from two weeks prior on several refinery glitches, US Energy Information Administration data showed.

Tightening supplies were also expected to strengthen prices amid mounting expectations that Saudi Arabia and Russia would extend their voluntary output cuts into September, analysts said.

Although diesel demand in 2023 has mostly recovered from 2020 lows, trends have been uneven across the country, according to a report by S&P Global.

"While the strong oil sector and agricultural activity have

### Henry Hub/NYMEX spread



Source: S&P Global Commodity Insights and CME Group

### 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 Commodity Insights

supported diesel demand in the Midwest and Gulf Coast in 2022 and 2023, demand in PADDs 1 and 5 is now suffering from shifting consumer demand from goods to services and layoffs in the tech sector," S&P Global analysts said.

Additionally, weakness in the truck tonnage index resulted in a fourth consecutive decline, according to the American Trucking Associations. Even so, demand was still climbing as the supply situation remained uncertain.

However, following a month of rises for crude prices, elevated costs could lead to demand destruction, CMC Markets' Chief Market Analyst Michael Hewson said Aug. 1, highlighting the example of gasoline demand — a key driver of oil product consumption in the US.

"This rise in prices over the last four weeks is already feeding into higher prices at the fuel pumps, which if sustained could impact consumer demand in the coming weeks," Hewson said.

In Europe, the market was "currently grappling with ongoing distillate shortages, causing sales prices, cracks, and spreads to surge in the last week," James Noel-Beswick, analyst at Sparta, said in a Aug. 1 note.

Noel-Beswick pointed to multiple factors contributing to the situation, including "Shell Pernis CDU issues, Shell Wesseling slowdowns, Donges hydrotreater problems, a fire at Repsol's Bilbao refinery, and ARA stocks hitting a six-month low last week."

## CFTC Commitment of Traders Report for week ended July 25

	long positions	short positions	net position	net position last week	change in overall positions	% market share	% market share last week
Producers/merchants/processors/users	171,735	275,693	61.62% short	62.46% short	-3.5%	34.87%	35.16%
Swap dealers	210,890	35,960	85.43% long	85.49% long	-2.98%	19.24%	19.3%
Money managers	204,535	200,990	50.44% long	51.82% short	-4.1%	31.61%	32.07%
Other reportables	41,244	141,910	77.48% short	72.62% short	3.11%	14.28%	13.47%

Source: CFTC. For detailed information regarding the categories of traders listed in this table, please see the CFTC's explanatory note at:

[www.cftc.gov/ucm/groups/public/@commitmentsoftraders/documents/file/disaggregatedcotexplanatorynot.pdf](http://www.cftc.gov/ucm/groups/public/@commitmentsoftraders/documents/file/disaggregatedcotexplanatorynot.pdf)

He also said there were rumors in the market that Europe-wide distillate stocks were around 7% below their seasonal average.

Meanwhile, a Europe-based market source said that front-month gasoil futures were jumping due to the lack of resupply in Europe. Now that Russian supply was excluded from European flows, volatility had been more pronounced in 2023, as supply was further away from the pricing center, according to the source.

The ICE low sulfur gasoil front-month contract broke above \$900/mt for the first time in six months in mid-morning European trading Aug. 1, despite crude futures moving slightly lower during the session, with traders citing concerns over diesel supply into Europe for the move higher. Platts, part of S&P Global Commodity Insights, last assessed the ICE LSGO front-month contract higher than \$900/mt on Jan. 31.

— Binish Azhar

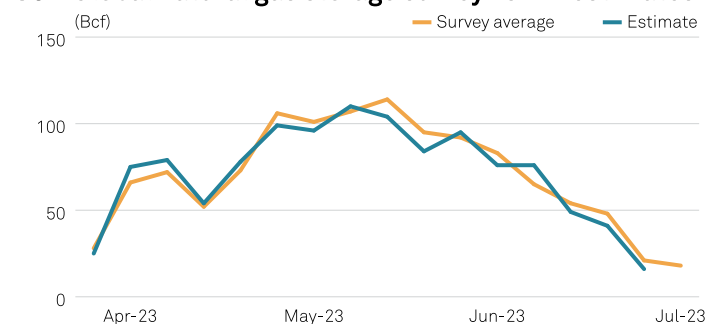
## Analysts see US gas storage surplus narrowing as hot weather persists

- 18 Bcf injection expected in week to July 28
- South Central heat risk continues into August

Scorching US temperatures and record-setting gas-fired power demand in late July likely kept injections to domestic gas storage well below average in the week to July 28, according to market analysts.

In its upcoming Aug. 3 inventory report, the US Energy Information Administration is expected to announce an injection of just 18 Bcf to US natural gas storage in the week prior, according to the latest gas storage industry survey from S&P Global Commodity Insights. Survey responses came in an unusually wide range this week including estimates spanning from a 12 Bcf withdrawal to as much as a 35 Bcf injection to inventory.

## S&P Global natural gas storage survey vs EIA estimates



Source: S&P Global Commodity Insights, US Energy Information Administration

## Canadian gas storage data for week ended Jul 28

(in Bcf)	East	West	Total
Working gas	231.45	420.41	651.85
Weekly Change	2.24	12.31	14.55
% of capacity	88.00%	74.67%	78.92%
Working Gas Jul 29, 2022	182.07	314.30	496.38

## Estimated working gas in storage

(week ended July 21) in Bcf

	This Week	Last Week	Change
East	670	661	9
Midwest	757	741	16
Mountain	189	186	3
Pacific	232	232	0
South Central	1,139	1,150	-11
Total Lower 48 US	2,987	2,971	16
	This Week Last Yr.	Prior Five Year Avg.	
East	530	584	
Midwest	623	663	
Mountain	144	164	
Pacific	253	267	
South Central	864	964	
Total Lower 48 US	2,414	2,642	

Source: Energy Information Administration

## US cooling days by Census region for week ended Jul 29

	2023	2022	normal	% change 2022	%change normal
New England	67	71	45	5.6 C	48.9 W
Middle Atlantic	75	81	59	7.4 C	27.1 W
East North Central	72	56	58	28.6 W	24.1 W
West North Central	96	62	72	54.8 W	33.3 W
South Atlantic	108	112	98	3.6 C	10.2 W
East South Central	104	111	95	6.3 C	9.5 W
West South Central	142	147	126	3.4 C	12.7 W
Mountain	108	78	80	38.5 W	35.0 W
Pacific	72	66	47	9.1 W	53.2 W
Total U.S.	93	88	75	5.7 W	24.0 W
Cumulative	631	742	614	15.0 C	2.8 W

W= Warmer; C= Colder; nc= no change

Regional degree-day statistics are weighted by electric home air-conditioning customers instead of population.

(Source: U.S. Dept. of Commerce, National Oceanic and Atmospheric Administration, compiled by the American Gas Assn.)

In the week to July 28, US gas market fundamentals were little changed from the seven days prior.

Blistering temperatures in the central and eastern US lifted gas-fired power burn demand to new record highs in late July at over 53 Bcf/d. During the week, stronger demand from power generators was partly offset by lower residential-commercial and industrial demand, limiting the weekly demand-side gain to



an estimated 370 MMcf/d. While US gas production was almost unchanged in the week to July 28, a 435 MMcf/d gain in pipeline imports left the US gas market with slightly more supply on hand, data from S&P Global showed.

An 18 Bcf injection to US gas storage in the final week of July would look bullish compared with the five-year average stock build of 37 Bcf. It would also signal relatively strong mid-summer demand compared with 2022, when the US gas market also posted a 37 Bcf injection in the corresponding week.

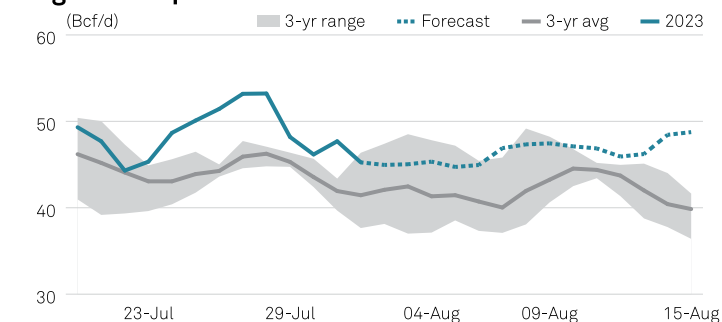
Assuming analysts' consensus injection estimate of 18 Bcf is accurate, US inventory levels would rise to 3.005 Tcf. The surplus to the five-year average stock level would narrow significantly to 326 Bcf, or about 12%, above the historical average. The surplus to 2022 would also narrow, falling to 554 Bcf, or almost 23%, above the year-ago inventory level – the lowest since early June, EIA data showed.

## NYMEX

In Aug. 1 trading, gas prices on the NYMEX futures market were down about 5-10 cents on the day with the September contract holding up in the mid-\$2.50s/MMBtu, data from CME Group showed. Over the past five-to-six weeks, prompt-month prices have traded rangebound from \$2.50-\$2.80/MMBtu as hot weather and strong gas demand keep the market off lows near \$2 seen earlier this year.

"Production levels continue to be the bugaboo," said Phil Flynn, senior account executive at Price Futures Group, via telephone July 21. "It's almost amazing seeing these record demand numbers, but because production is so high we're not seeing a real big market reaction. It's raising some concerns that the market could selloff once it cools off – but I'm not so sure," he said.

## US gas-fired power demand



## Outlook

With the US National Weather Service predicting exceptionally hot weather across the South Central US in August, strong gas-fired power demand is likely to continue through late summer. According to most market analysts, the additional demand should help to keep season-ending gas inventories below 4 Tcf.

In the week to Aug. 4, a steep drop in gas-fired power burn is

largely behind an overall 2.7 Bcf/d drop in domestic gas demand. On the supply side, stronger domestic gas production has thus far overwhelmed a modest decline in pipeline imports, adding another 150 MMcf/d to the US supply balance.

All considered, most analysts are already projecting a significantly larger inventory build in the week to Aug. 4. According to S&P Global's natural gas supply-demand model, the US gas market will likely post an injection of 43 Bcf for the week. If accurate, the predicted build would still fall short of the five-year average injection of 46 Bcf and more narrowly undershoot the year-ago stock build of only 44 Bcf, data from EIA showed.

— J Robinson

## US natural gas August bidweek prices weaken amid rising supply

- US storage sits 345 Bcf above the five-year average
- Supply expected to see a 10% increase year on year

US August bidweek natural gas saw mostly declines in prices August 1 with elevated storage levels and strong supply forecast.

Henry Hub saw a 12-cent decrease compared to July for August bidweek, reaching about \$2.50/MMBtu, while Katy fell around 20 cents to \$2.30/MMBtu, according to Platts assessments from S&P Global Commodity Insights. In the Midcontinent, Natural Gas Pipeline-Midcon Pool and Chicago

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# Illinois Power Agency BEC RFP

## Block Energy and Capacity RFP

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- Energy blocks and capacity for Ameren Illinois Company
- Energy blocks for Commonwealth Edison Company

The supply period for energy starts October 2023.

Capacity is procured for two supply periods starting June 2024 and June 2025.

**Part 1 Proposals are due by  
Tuesday, August 15, 2023.**

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city-gates both lowered around 15 cents to \$2.17/MMBtu and \$2.22/MMBtu, respectively.

Storage levels across the US have remained well above historical norms, about 2.99 Tcf after a 16 Bcf injection for the week ended July 21, according to the Energy Information Administration. This level of inventory sits close to 24% higher than last year at the same time and 13% above the five-year average. Every region has maintained elevated storage levels with recent injections, except for Pacific storage which has reached 232 Bcf, 35 Bcf below the five-year average.

Supply throughout the US is also expected increase year over year. Platts Analytics, part of S&P Global Commodity Insights, forecasts total US supply for the August to average around 102 Bcf/d, up 3 Bcf compared to August 2022 and 10 Bcf higher than the five-year average. Onshore production gains make up almost all this increase as the average for August is anticipated to reach 10 Bcf/d, 11% above its five-year average.

Along with increased supply, demand across the US should also see slight gains. Total US demand, excluding LNG exports, should see a 322 MMcf rise to an average of 82 Bcf/d for August compared to July as industrial demand is expected to lift 342 MMcf to average 25.7 Bcf/d this month. Residential demand is forecast to fall 122 MMcf over the same time to average 39.6 Bcf/d for August. The Northeast should see the largest decline in demand with an expected drop of 515 MMcf month on month in power demand to an average of 11 Bcf/d, with temperatures in the region showing a 30%-50% likelihood to be below normal

over the next 30 days, the National Weather Service recorded. Algonquin city-gates, in the Northeast, saw the largest decline in price across the US with about a \$2.20 decline from July to reach close to \$1.90/MMBtu August 1 with lower demand ahead.

Platts is part of S&P Global Commodity Insights.

— Amy Debayle

## Upstream oil and gas operators contract deepwater rigs for 2025-2026, as market tightens

- Rig deals now being signed for 2025-2026 work
- Contract durations are up 60% year on year
- Q2 deal inked at \$500,000/d, a sum not seen in years

Deepwater driller Transocean is seeing upstream oil and natural gas operators signing up to lease its most capable rigs “well in advance” of planned drilling program start dates, indicating customer recognition of the high demand for top-tier equipment amid tightening market supply, its top executive said Aug. 1.

Start dates for some work now being contracted extends into late 2025 and 2026 – notably an ultradeepwater rig in the Mexican Gulf of Mexico for 1,080 days at a rate of \$480,000, the driller’s CEO Jeremy Thigpen said during a company second-quarter earnings conference call.

“We’re undoubtedly in what appears to be a multiyear up-cycle,” Thigpen said. “Our customers are both demonstrating their

## Platts

**S&P Global**  
Commodity Insights

## Energy Trader

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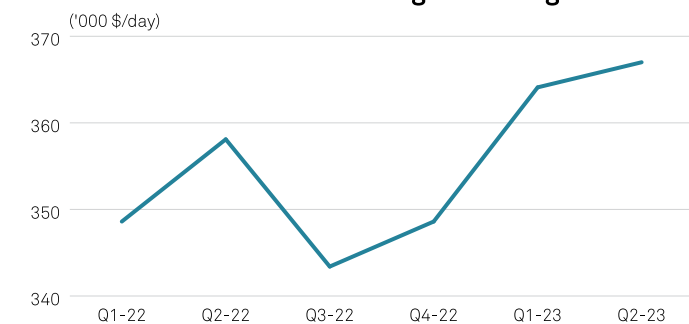
confidence and commitment to their projects and acknowledging the tightness of supply of high-specification floaters by securing rigs well in advance of their programs and locking them up for multiple years.”

“We believe this signals our customers’ recognition of the scarcity of capable high-specification assets and clearly demonstrates the strength of commitment to offshore projects, further validating that we’re in an upcycle that will be of significant longevity,” he said.

A limited supply of top-tier rigs in the face of increasing demand has pushed up day rates higher than they have been in recent years. Thigpen said during Q2 2023, Transocean’s fleet average day rate was \$363,000 compared to \$312,000 in Q2 2022.

And, based on the driller’s existing \$9.2 billion backlog, which expanded by \$1.2 billion in Q2 2023, “by second-quarter 2024, we expect the average to be to be about \$433,000 a day,” he said.

### Transocean’s revenues soar as rig market tightens



Source: Transocean

### Contract durations ‘materially’ longer

In addition, contract durations are lengthening “materially,” Thigpen said.

Year to date, the average length of contract drillship awards has increased to 495 days, compared to 310 days in 2022 for the same period, up 60% year on year. And, the average duration of semi-submersible fixtures increased 18% over the same time period in 2022, and nearly 150% from 2020.

Also, nearly 15,000 drillship days have been awarded to date in 2023, a 134% increase when compared to the same period in 2022. Similarly, nearly 8,500 harsh-environment semisubmersible contract days have been awarded this year, a 72% increase versus the same period in 2022.

Globally, Thigpen predicted about 81 rig-years of work likely to be awarded near-term across 80 deepwater drilling programs, suggesting an average duration per program of about a year – up from seven to eight months in early 2022.

And, more than a quarter of these programs involve exploration and appraisal wells – suggesting more work is occurring for projects that may replenish future oil and gas production.

Moreover, not only has Transocean increased average dayrates for its ultradeepwater fleet, but it has seen a “rapid tightening” of the high-specification harsh-environment semisubmersible

market, Thigpen said.

“As recently confirmed by Westwood Energy group, this asset class is effectively sold out with committed utilization at 100% for first time since 2014,” he said.

As further evidence of market strength, a number of operators are evaluating and increasingly pursuing longer-term rig contracts that are not yet tied to specific projects or may not have approval from one or more partners, he added.

“We have not seen this type of market behavior in some time, and it’s one of the more exciting and encouraging developments to date,” he said.

### Rig market seen remaining tight

The rig market is expected to remain tight, especially for the highest-specification ultradeepwater drillships and harsh-environment semisubmersibles, Thigpen said.

He cited an analysis by Wood Mckenzie, which oilfield service provider SLB quoted during its recent Q2 conference call in July, that estimated \$500 billion of investment in oil and gas is expected between 2022 and 2025, of which \$200 billion should be in deepwater projects.

Around 85% of those sums should generate favorable returns at oil prices below \$50/b, while oil prices have remained “comfortably” above that threshold for more than two years “and remain stable in the mid-\$70s to mid-\$80s range,” he noted.

“As the majority of offshore project breakevens are significantly below this threshold, and many are below \$50 [/b], we expect customers’ programs will receive approval to move ahead,” Thigpen said.

In addition, Transocean recently became the first deepwater driller to ink at least one contract at the landmark day rate of \$500,000 – for a semisubmersible to work on a project in Australia although the operator was not disclosed.

Day rates topped that amount during the boom cycle of 2011-2014, but rates have not been that high since that time.

— Starr Spencer

### US’ Enterprise Products maintains bullish crude oil outlook for balance of 2023

- Demand to tighten supply in H2 2023
- July crude exports to exceed 30 million barrels
- SPOT to see final investment decision in Q3

Enterprise anticipates a bullish remainder of the year as their demand outlook called for a tight H2 2023 and expanded their export capacity as a result, meanwhile drilling and completions activity in the Permian and gassy Haynesville Shale remained efficient, executives said Aug. 1.

“Even though industrial demand continues to lag, consumer demand is strong, especially in developed nations,” co-CEO Jim Teague said in the earnings call. “Crude oil demand fundamentals continue to indicate that we’re in store for much tighter balances in 2024.”

Enterprise's net income of \$1.3 billion in Q2 2023 was just shy of the year-ago period during the second quarter of 2022 at \$1.4 billion, driven by the impact of a low price and lower margin environment for crude and natural gas.

"Oil and gas has faced commodity price headwinds, especially compared to the premiums of last year when crude averaged over \$100 a barrel," Teague said.

Despite the decline, the company saw a record 11.9 million barrels of oil equivalent of total pipeline volumes during the quarter led by growth on the expanded Midland-to-ECHO (Enterprise crude Houston) pipeline system.

Of that, total crude oil pipeline transportation volumes increased 8% to 2.4 million b/d for Q2 2023 compared to Q2 2022, while total marine volumes were 814,000 b/d for Q2 2023 compared to 777,000 b/d for the same quarter last year.

As for exports, Enterprise expects July crude exports to exceed 30 million barrels with demand expected to increase over a tight supply environment.

Expanding export capacity remains a priority ahead of the third quarter, with the company's planned deepwater crude-exporting terminal offshore of the Houston Ship Channel, the Seaport Oil Terminal, expected to see a final investment decision as soon as September or October, Teague said.

### Production efficiency

Looking to the Permian basin and Haynesville shale, the company maintained a bullish outlook regarding growth.

Several producers, including Chevron, ExxonMobil, and Ovintiv, have said they also see Permian Basin production rising down the road.

Meanwhile, the Haynesville Shale will also see expansion projects going forward as the extension is full and gas is continuing to be produced, Natalie Gayden, senior vice president of natural gas said.

Enterprise executives also noted that producers were continuing to see significant drilling and completions efficiencies.

The resulting cost mitigations led producers to foresee some amount of deflation on costs, adding that longer laterals were key.

However, top executives of US land drillers Patterson-UTI and Helmerich & Payne said in separate earnings calls July 27 they see the domestic rig count reversing toward year-end as activity picks up from expectations of a clearer macro-outlook.

The company also shared greater interest in transporting energy products to Houston as the Corpus Christi, Texas pipelines were full.

— Binish Azhar

### US could supply up to 25% of its power demand from offshore wind power: study

- 'Technical potential' of nearly 4,000 GW
- US power demand could triple by 2050

The US coastline, including the Great Lakes region, has the technical potential of nearly 4,000 GW of offshore wind power

capacity which could supply up to 25% of US power demand, with over 1,000 GW of this potential supply operating with capacity factors above 50%, according to a University of California, Berkeley study released Aug. 1.

"Offshore wind technology has astounding potential to form a major cornerstone of America's electricity needs," Nikit Abhyankar, senior scientist at the UC Berkeley Center for Environmental Public Policy, said in a statement.

The report called "2035 and Beyond: Abundant, Affordable Offshore Wind Can Accelerate Our Clean Electricity Future," was supported by GridLab, a non-profit that provides technical grid expertise to help policy decision-making and Energy Innovation which is a nonpartisan energy and climate policy think tank.

"Technical potential" refers to the total achievable power generation of offshore wind, given various land-use, environmental, technology, and performance constraints, or in other words, technical potential represents an upper-bound estimate of how much power the US can produce from offshore wind, the researchers said.

"The technical ability to build out America's offshore wind sector and enjoy all the benefits of clean, reliable, affordable electricity is there; we just need political leadership to pass the right policies, starting with much larger offshore wind commitments," Mike O'Boyle, senior director of electricity policy at Energy Innovation, said.

"Increasing our investment in US ports, ship building, specialized steel manufacturing and transmission infrastructure are key to supporting offshore wind energy installation," O'Boyle said.

The report found that offshore wind resources could greatly complement onshore resources like solar and wind power to help achieve a 95% clean electricity grid by 2050 without substantially impacting wholesale electricity costs.

Additional key findings include:

- The US will need to install at least 85 GW of land-based wind and solar power annually, as well as 27 GW of offshore wind power between 2035-2050 to meet increased electricity demand and reach net-zero emissions in 2050. By comparison, the US installed 28 GW of wind and solar in 2021
- US economic growth and increased electrification of buildings, transportation and industry will lead to a near tripling of US power demand, to over 10,000 TWh in 2050 from 4,000 TWh currently
- Offshore wind power complements solar and land-based wind electricity generation by producing power during peak evening hours and peak winter and summer months
- Significant national, regional and state policy support from grants, financing, planning and permitting approvals, coordinated across geographies, is needed to expand domestic manufacturing of components and associated supply chains

— Jared Anderson

## Eversource takes \$331 million hit to offshore wind business value

- Impairment of 95 cents/share
- Still close to deal on divestment

Eversource Energy recorded a \$331 million after-tax impairment related to its offshore wind business for the second quarter, the company said Aug. 1, up from the \$220 million to \$280 million charge the developer estimated in May.

"Eversource evaluated its aggregate investment in the contracted projects, the uncommitted lease area and other related capitalized costs and determined that the offshore wind investment exceeded its carrying value," CEO Joseph Nolan said during second-quarter results call.

The impairment amounted to an impact of 95 cents/share. Eversource reported Q2 earnings of \$15.4 million, or 4 cents/share, compared with second-quarter 2022 earnings of \$291.9 million, or 84 cents/share. The S&P Capital IQ GAAP consensus earnings estimate for Eversource in the second quarter was 91 cents/share.

The writedown assumes that Eversource will qualify for investment tax credit adders like the 10% domestic content bonus and that the New York Public Service Commission will reprice Offshore Wind Renewable Energy Certificates for the planned, 924-MW Sunrise Wind project to account for inflation, Executive Vice President and CFO John Moreira said.

That decision is expected in October or November, according to Eversource.

### Offshore wind sale update

Regarding plans to divest its 50% interest in a joint venture with Ørsted developing Sunrise Wind, Revolution Wind Offshore and the South Fork Wind Project, Nolan said Eversource is close to a deal even though it expected to make an announcement during the second quarter.

"It didn't take place, obviously, at the pace that all of us would have liked it to take place, but I just want to promise you that we are here at the one-yard line, and we are getting it over the goal line," Nolan added.

The impairment's increase over a previous estimate was due in part to "the completion of due diligence and kind of the current deal pricing," according to Moreira.

While analysts at Scotiabank told clients Aug. 1 that they still forecast Eversource's contracted portfolio to fetch more than \$2 billion, they also believe that "many investors will expect another write-down or two before the dust settles."

In January, Ørsted wrote down its investment in Sunrise Wind by \$363 million in the face of cost inflation and rapidly rising interest rates.

Eversource in May agreed to sell its 50% stake in an uncommitted Massachusetts offshore wind lease area to Ørsted for \$625 million in cash.

Revolution Wind 2 Offshore, which Eversource is also

developing with Ørsted, faced a setback in July when PPL subsidiary Rhode Island Energy, known legally as The Narragansett Electric Co., decided not to sign a power purchase agreement due to cost concerns.

### Connecticut ratemaking

Connecticut regulators issued a proposed decision July 21 rejecting a request from Eversource utility United Illuminating for a \$130.6 million rate increase over three years, instead authorizing a one-year rate increase of less than \$2 million to be effective Sept. 1.

"We will have a day in court, and if this remains as is, I assume that [United Illuminating] will be in court as well to talk about that," Nolan said during the call. "I'm confident that we can get to a much better place."

Analysts at Guggenheim wrote July 24 that the draft decision indicates that Connecticut "continues to point to becoming a value-destructive state."

Eversource also has an approximately \$900 million deferred extreme weather balance in Connecticut, with recovery beginning no earlier than the end of 2025, Moreira said.

*S&P Global Commodity Insights reporter Allison Good produces content for distribution on Capital IQ Pro.*

— Allison Good

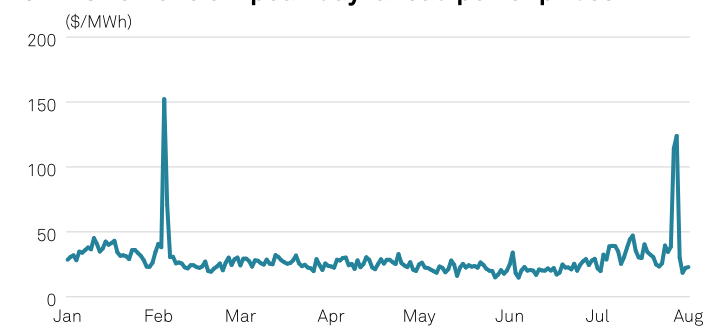
## PSEG's 2023 nuclear power output hedged at \$31/MWh; investing for EVs, electrification

- 2023 nuclear output of 30 TWh to 32 TWh expected
- Sold offshore wind power stake back to Ørsted

For full-year 2023, Public Service Enterprise Group is forecasting nuclear power generation output of 30 TWh to 32 TWh and has hedged approximately 95% of this production at an average price of \$31/MWh, executives said during the investor-owned utility's second quarter earnings call.

"On the operating side, the nuclear fleet produced approximately 7.7 TWh during the second quarter and 16 TWh for the year-to-date period in 2023, running at a capacity factor of 91.2% for the quarter and 95.8% for the year-to-date period,"

### PJM PSEG Zone on-peak day-ahead power prices



Source: PJM



Daniel Cregg, PSEG's chief financial officer, said during the conference call.

On-peak day-ahead power prices in PJM Interconnection's PSEG Zone averaged \$28.54/MWh so far in 2023, according to PJM data.

For 2024, the nuclear fleet is forecasted to produce 30 TWh to 32 TWh of baseload output and has hedged 75% to 80% of this generation at an average price of \$38/MWh, Cregg said.

Subsidiary PSEG Nuclear operates the 2,295-MW Salem and 1,173-MW Hope Creek Nuclear Generating Stations in Lower Alloways Creek, New Jersey and is a part owner of the 2,549-MW Peach Bottom nuclear power plant in Delta, Pennsylvania.

PSEG owns 57% of Salem and Constellation Energy owns the remaining 43%, PSEG owns 100% of Hope Creek, and owns 50% of Peach Bottom with Constellation owning the other 50%.

"During the quarter, we completed PSEG's exit from offshore wind generation through the sale of a 25% equity stake in Ocean Wind I, selling it back to Orsted, recovering our investment," Ralph LaRossa, PSEG's president and CEO said.

### Capital spending plan

The utility portion of PSEG's \$15.5 billion to \$18 billion spending plan remains focused on system modernization of aging distribution infrastructure, last-mile support in preparation for electric vehicle and building electrification, and aligning plans with New Jersey's energy policies and the company's clean energy investments, LaRossa said.

PSEG's investment program drives expected compound annual growth rate in rate base of 6% to 7.5% from year-end 2022 to year-end 2027 with the low end of this rate base estimate assuming an extension of the utility's natural gas system modernization program and clean energy investments at their current average annual level, while the upper end includes the remaining portion of proposals for medium and heavy duty EVs and energy storage programs as well as potentially higher amounts for energy efficiency above current levels, he said.

"Speaking of energy efficiency, the New Jersey Board of Public Utilities recently approved the second energy efficiency framework for the next 3-year cycle that will begin in July of 2024 and run through June of 2027," LaRossa said.

This past May, the regulators approved a \$280 million 9-month extension of PSEG's first energy efficiency program which synchs it up with the completion of the state's first cycle in June 2024, he added.

Second quarter weather typically contains both heating and cooling sales, Cregg said, adding that 2023 winter weather during Q2 was 23% warmer in terms of heating degree days than Q2 2022, and summer weather was 34% cooler than Q2 2022 as measured by the temperature-humidity mix.

PSEG reported Q2 2023 net income of \$591 million, or \$1.18/share, compared to net income of \$131 million, or \$0.26/share, for Q2 2022.

— Jared Anderson

## WEC expects new demand, grid operator rules to boost capacity needs

- Current plan calls for 3.3 GW of renewables

- Details of next five-year plan expected in fall

While WEC Energy Group's current five-year plan envisions quadrupling the company's renewable capacity, new developments like a planned Microsoft facility and new capacity requirements could further increase capacity needs in the next plan, company officials said Aug. 1.

During the second quarter, the company made progress on the investments in its existing \$20.1 billion five-year plan, Gale Klappa, the executive chairman for the board, said during WEC's Q2 earnings call. "As we've discussed, the plan is based on projects that are low-risk and highly executable," he said.

Citing the availability of new US tax credits for renewable energy projects, WEC in late 2022 unveiled a revised five-year capital plan that will allocate \$7.3 billion to building up to 3,300 MW in new wind, solar, and storage projects as it retires its coal capacity by 2035.

In fall 2023, WEC is planning to release the details of its next five-year plan, which will cover 2024 to 2028. The next plan will cover expected new demand growth, Klappa said.

### New demand

For instance, Microsoft in Q1 2023 announced plans to make an initial investment of \$1 billion to create a new data center campus to be built south of Milwaukee, he said.

"So along with American Transmission Company, we're working closely, in fact on a weekly basis, with Microsoft to determine the full extent of the energy infrastructure that will be needed to serve this development," he said.

In addition to Microsoft, there is a new HARIBO plant up and running that will produce 132 million pounds of gummy bears in the next 12 months, Klappa said. And MISO's first tranche of long-range transmission plan grid projects will impact the next plan too, he said.

"I think we're going to see an uptick in transmission investments," he said. "I think we're going to see clearly some additional capacity needed," he said.

### Capacity rules

In addition, MISO recently moved to a seasonal resource adequacy construct, which is expected to impact WEC's winter capacity reserve requirement, Klappa said. "That's all being factored into our new five-year capital plan," he said.

It is unclear at this point whether future capacity needs will necessitate further generator retirement delays, said Scott Lauber, the president and CEO of WEC. "We're evaluating what our capacity needs are," he said. "So right now, [there's] nothing to announce," he said.

WEC's Wisconsin subsidiary last year delayed the retirement of four units of its 1.1 GW coal-fired Oak Creek plant until 2024 and



2025, citing tight capacity in the Midwest and supply chain issues that were delaying renewable projects.

MISO officials said utility decisions to delay retirements helped reverse a capacity shortfall and ensure sufficient supply was available in the grid operator's most recent capacity auction.

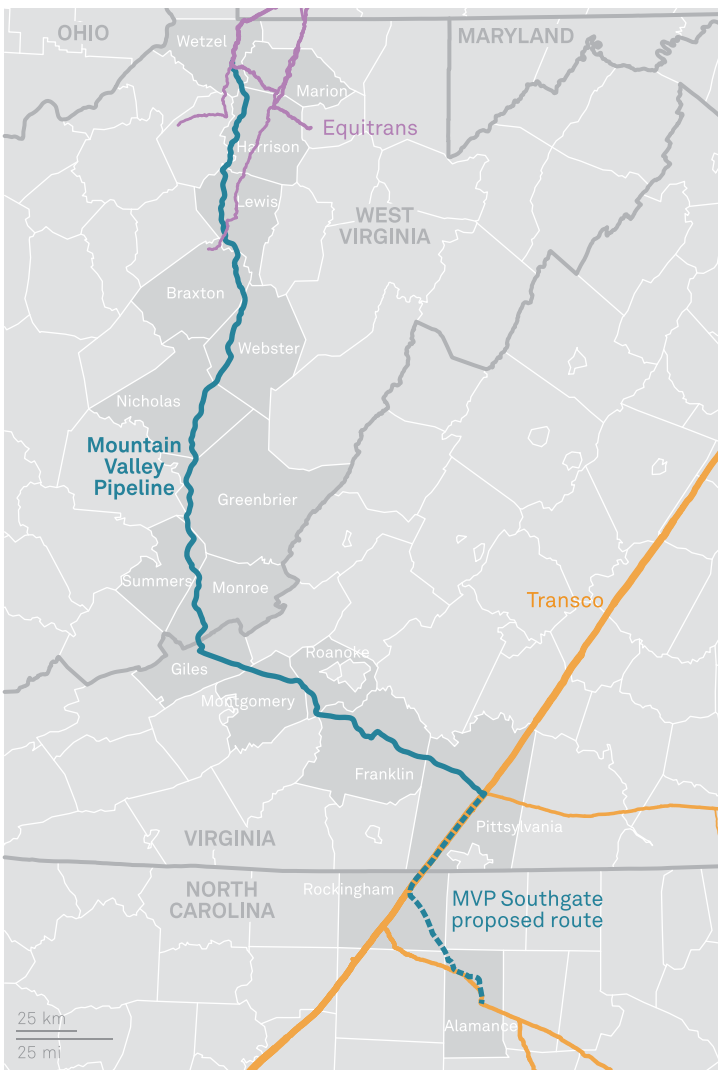
For Q2 2023, WEC recorded a net income of \$289.7 million, or 92 cents/share, up from \$287.5 million, or 91 cents/share, in Q2 2022. For the first half of 2023, the company recorded a net income of \$797.2 million, or \$2.52/share, down from \$853.4 million, or \$2.70/share, in Q1 2022.

"After a down first quarter marked by one of the warmest winters on record, we delivered solid results in the second quarter," Klappa said in a statement. "And we're firmly on track for a strong 2023," he said.

— Kate Winston

## Mountain Valley developer sticks to 2023 in-service target as construction resumes [...from page 1](#)

### Mountain Valley Pipeline project



Source: S&P Global Commodity Insights

around year-end."

Executives at foundation shipper EQT, the largest US natural gas producer, had said July 26 they expected the pipeline to start service "by the first half of 2024." EQT provided its outlook a day before the Supreme Court action, which lifted stays by the US Court of Appeals for the 4th Circuit earlier in July covering the project's Endangered Species Act documents and an authorization to cross the Jefferson National Forest.

Mountain Valley is fully subscribed, with EQT holding 1.29 Bcf/d of the pipeline's firm transportation capacity.

Completing Mountain Valley and receiving in-service authorization from FERC by the end of 2023 would put the project on track to commence contract obligations on Jan. 1, 2024.

"Despite all the twists and turns, we are grateful for the timely ruling by the Supreme Court and to be, once again, focused on construction," Karam said.

Equitrans on Aug. 1 reported \$68.9 million of net income for the second quarter of 2023, compared to \$64.7 million in the same period of 2022.

Equitrans is considering a 73-mile, 375 MMcf/d extension off the Mountain Valley mainline, the MVP Southgate project, stretching from southern Virginia into North Carolina. Equitrans, which has a 47.2% ownership in MVP Southgate and is expected to operate the pipeline, said in its earnings report that the company and its joint venture partners are "focused on active negotiations with the shipper and a prospective customer regarding refining the project's design, scope and/or timing in lieu of pursuing the project as originally contemplated."

— Corey Paul

## As Texas grid sets demand record, experts mull how utilities handle extreme heat [...from page 1](#)

Morgan Scott, Electric Power Research Institute director of sustainability and ecosystem stewardship, during a United States Energy Association media briefing entitled, "Too Darn Hot: The Summer of 2023 Electric Utility Story."

"In the US, while we have seen some intensity records, we're seeing more of a question around duration, particularly in Texas and Arizona," Scott said. "It's that duration piece of the heat experience that I would say is particularly interesting and observing the system reaction."

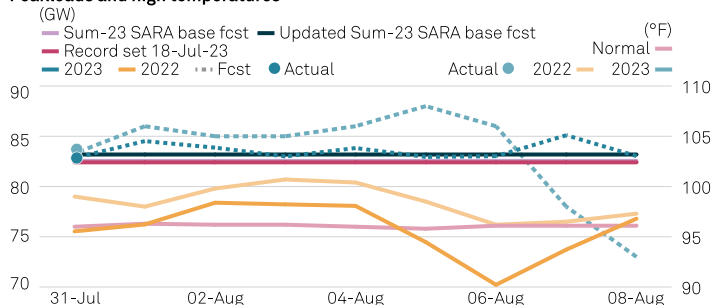
Certain instances have resulted in energy emergency alerts, but "we have not seen significant load-shedding events," Scott said.

### SPP's 32-GW wind fleet

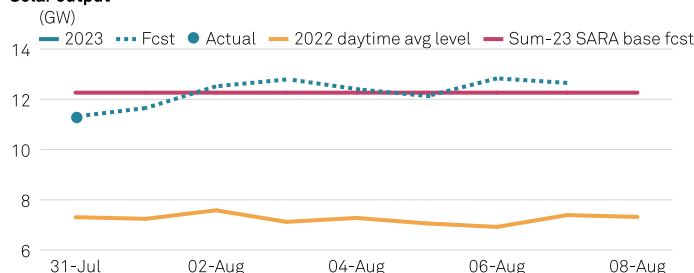
Lanny Nickell, Southwest Power Pool executive vice president and chief operating officer, said the summer has shown the danger of shifting away from conventional generation assets too quickly. Since the late 2010s, SPP's thermal generation outages during summer have had "a slight increase" to about 10% of

## ERCOT heat wave power fundamentals

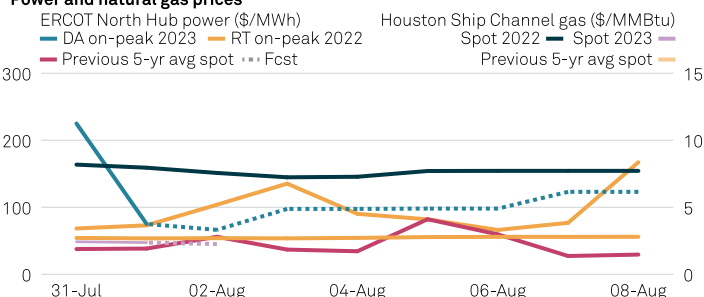
### Peakloads and high temperatures



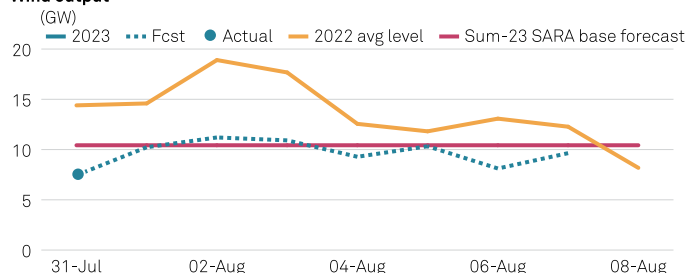
### Solar output



### Power and natural gas prices



### Wind output



Notes: Peakload forecast was issued 11:30 am CT Aug. 1. SARA is Seasonal Assessment of Resource Adequacy. Updated SARA is based on latest weather forecast. High temperature forecast for 2023 is for the Dallas-Fort Worth area. Actual high temperatures for 2022-23 and normal highs are population-weighted for the ERCOT market region. Renewable output actual and forecast levels are for hour ending at 5 pm CT, as of the noon CT Aug. 1 forecast. Renewable output levels for 2022 are daytime averages for solar and 24-hour averages for wind. Summer SARA renewable forecasts are for production during seasonal peak hour.

Sources: ERCOT, CustomWeather, S&P Global Commodity Insights

summer peak.

"On the other hand, I'll tell you what really causes us a lot of challenges is when our vast amount of wind generation doesn't produce energy," Nickell said. "On average, you can expect about 15% to 20% of our wind generation to produce energy during the summer peak day, but we had an event on June 6 when out of 32,000 MW of nameplate wind generation, only 111 megawatts was produced. That's across 14 states, and it was highly unusual, highly unexpected, and it created a significant amount of challenge for us."

Federal, state and corporate utility goals of achieving net-zero emissions are "achievable," Nickell said, "as long as all options are on the table."

### Regulatory challenges

"I'm more worried about the goals being set by 2030," Nickell said. "It takes transmission. We've talked about all the stuff that we need to make this work. We need more resources. We need the right kind of resources. We need more transmission that can leverage access to resources that are performing when others aren't. It takes at least 10 years to build significant transmission and probably more in certain parts of the country. So, I'm not as worried about 2050 as long as we start planning now. I am worried about 2030."

Barry Ingold, Tri-State Generation and Transmission Association, an electric cooperative based in Westminster, Colorado, said his organization has plans to retire a 1.2-GW coal-fired plant in a quest to reduce carbon dioxide emissions, but

seeks to replace it, at least temporarily, with a 300-MW, gas-fired plant, which "will be the challenge" from a regulatory perspective.

"Not only do you have to get through the Colorado Public Utility Commission, you have to get it through a separate commissions permitting process, and that's where I see the risk," Ingold said. "The Public Utility Commission may say, 'Yes, we support this, go forth and build it,' but you have to get it permitted through the Air Quality Control Commission who in the state of Colorado may be even far more challenging."

— Markham Watson, Larry Flores, Amilcar Flores

### Subscriber Notes

#### Platts proposes to use reported US NYISO electric behind-the-meter solar generation RPI data

Platts, part of S&P Global Commodity Insights, proposes to start using actual behind-the-meter solar data for the calculation of its Renewable Penetration Index for the US New York Independent System Operator (NYISO).

The change would be implemented starting on Sept. 15, 2023.

Platts is proposing this change to provide increased transparency of the solar penetration in the NYISO generation mix.

The change would allow Platts to publish solar RPI calculations for peak and off-peak, as well as data as reported by the ISO for daily hours 1-24.

The change would affect the daily calculations published in Megawatt Daily, Energy Trader, on Platts real-time fixed pages

PEA 904, AGP 2904, on Platts Dimensions Pro, and in the Platts price database under the following codes:

Solar % - Peak	RPNSP00
Solar % - Off-peak	RPNSO00
NYISO RPI Solar Hour 1	RPNSC01
NYISO RPI Solar Hour 2	RPNSC02
NYISO RPI Solar Hour 3	RPNSC03
NYISO RPI Solar Hour 4	RPNSC04
NYISO RPI Solar Hour 5	RPNSC05
NYISO RPI Solar Hour 6	RPNSC06
NYISO RPI Solar Hour 7	RPNSC07
NYISO RPI Solar Hour 8	RPNSC08
NYISO RPI Solar Hour 9	RPNSC09
NYISO RPI Solar Hour 10	RPNSC10
NYISO RPI Solar Hour 11	RPNSC11
NYISO RPI Solar Hour 12	RPNSC12
NYISO RPI Solar Hour 13	RPNSC13
NYISO RPI Solar Hour 14	RPNSC14
NYISO RPI Solar Hour 15	RPNSC15

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NYISO RPI Solar Hour 24	RPNSC24

Please send comments, questions, and other feedback to [powerpricing@spglobal.com](mailto:powerpricing@spglobal.com) and [pricegroup@spglobal.com](mailto:pricegroup@spglobal.com) by Aug. 11, 2023.

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.

## Final Daily Gas Indices – ICE Locations (\$/MMBtu)


 Powered by ICE

Trade date: 01-Aug

Flow date(s): 02-Aug

Location	Symbol	Index	Daily Change	Absolute Low	Absolute High	Common Low	Common High	Volume	Deals
<b>Northeast</b>									
ICE Algonquin CG (Excl. J and G Lateral deliveries)	JAAAA21	1.575	+0.155	1.525	1.600	1.555	1.595	155	26
ICE Algonquin Citygates (Excl. J Lateral deliveries)	JAAAB21	—	—	—	—	—	—	—	—
ICE Algonquin, Millennium-Ramapo receipts	JAAHF00	—	—	—	—	—	—	—	—
ICE Algonquin, TGP-Mahwah receipts	JAAHG00	1.130	-0.290	1.130	1.130	1.130	1.130	10	2
ICE Cove Point, on system delivery	JAAHM21	3.155	0.355	2.600	3.200	3.005	3.200	261	12
ICE Iroquois, zone 2 (non-Hunts Point/Eastchester Lateral)	JABT21	2.245	+0.055	2.200	2.250	2.235	2.250	159	38
ICE Iroquois, zone 2 Hunts Point/Eastchester Lateral	JABU21	—	—	—	—	—	—	—	—
ICE Maritimes, Hubline and Beverly Salem	JACB21	—	—	—	—	—	—	—	—
ICE Maritimes and Northeast Pipeline US (buyer's choice delivered)	JACC21	—	—	—	—	—	—	—	—
ICE PNGTS (buyer's choice delivered)	JAADH21	2.450	-0.060	2.430	2.450	2.445	2.450	90	20
ICE Stagecoach Marcellus Hub	JAEN21	—	—	—	—	—	—	—	—
ICE Tennessee, zone 6 300 leg	JADPZ21	—	—	—	—	—	—	—	—
ICE Texas Eastern, Manhattan Lateral (delivered)	JAEW21	—	—	—	—	—	—	—	—
ICE Transco-River Road	JABFZ21	—	—	—	—	—	—	—	—
ICE Transco, zone 6 (non-NY north mainline)	JAEZ21	—	—	—	—	—	—	—	—
ICE Transco, zone 6 non-NY South	JADSZ21	—	—	—	—	—	—	—	—
ICE Transco, zone 6 station 210 Pool	JAAFA21	1.130	-0.040	1.010	1.200	1.085	1.180	150	30
<b>Appalachia</b>									
ICE Clarington Tennessee	JAAFI21	—	—	—	—	—	—	—	—
ICE Columbia Gas, A04 Pool	JAAAU21	—	—	—	—	—	—	—	—
ICE Columbia Gas, A06 Pool	JAAAV21	—	—	—	—	—	—	—	—
ICE Columbia Gas, A08 Pool	JABBY21	—	—	—	—	—	—	—	—
ICE Columbia Gas, Segmentation Pool	JAAAW21	—	—	—	—	—	—	—	—
ICE Millennium Pipeline (buyers' choice delivered)	JAAHA21	—	—	—	—	—	—	—	—
ICE Tennessee, zone 4, station 219 Pool	JAAET21	1.265	+0.045	1.200	1.330	1.235	1.300	122	40
ICE Texas Eastern, M2 Zone (delivered)	JAAEV21	—	—	—	—	—	—	—	—
<b>Midcontinent</b>									
ICE Bennington, Oklahoma (buyers' choice)	JAAHK21	—	—	—	—	—	—	—	—
ICE Enable Gas, Flex Pool only	JAABE21	2.220	-0.055	2.220	2.220	2.220	2.220	32	4
ICE Enable Gas, North Pool only	JABF21	—	—	—	—	—	—	—	—
ICE Enable Gas, West (W1 or W2 as mutually agreed)	JAABI21	—	—	—	—	—	—	—	—
ICE Enable Gas, West Pool	JABJ21	—	—	—	—	—	—	—	—
ICE MEP-Lamar	JABFW21	—	—	—	—	—	—	—	—
ICE Midship, receipts	JADGZ21	—	—	—	—	—	—	—	—
ICE NGPL, Gulf Coast Mainline Pool	JAACI21	—	—	—	—	—	—	—	—
ICE NGPL, Mid-Continent Storage PIN	JAAC021	—	—	—	—	—	—	—	—
ICE Northern Natural, Mid 13 - 16A Pool	JACW21	—	—	—	—	—	—	—	—
ICE Northern Natural, Mid 1-7 Pool	JAACX21	—	—	—	—	—	—	—	—
ICE Northern Natural, Mid 8 - 12 Pool	JAACY21	—	—	—	—	—	—	—	—
ICE Salt Plains Storage (buyers' choice)	JAADV21	—	—	—	—	—	—	—	—
ICE Salt Plains Storage (in-ground transfer only)	JADW21	—	—	—	—	—	—	—	—
<b>Upper Midwest</b>									
ICE Alliance, Chicago Exchange Hub	JAAAC21	2.230	-0.060	2.185	2.250	2.215	2.245	505	74
ICE Alliance, ANR Interconnect	JAAD21	—	—	—	—	—	—	—	—
ICE Alliance, Midwestern Interconnect	JAAF21	—	—	—	—	—	—	—	—
ICE Alliance, NGPL Interconnect	JAAF21	—	—	—	—	—	—	—	—
ICE Alliance, Nicor Interconnect	JAAAG21	—	—	—	—	—	—	—	—
ICE Alliance, Vector Interconnect	JAAAH21	—	—	—	—	—	—	—	—
ICE ANR, Joliet Hub CDP	JAAAK21	—	—	—	—	—	—	—	—
ICE Bluewater Gas Storage	JAAAN21	—	—	—	—	—	—	—	—
ICE Great Lakes Gas, St. Clair	JAABM21	—	—	—	—	—	—	—	—
ICE Guardian, Guardian Hub	JAABN21	—	—	—	—	—	—	—	—
ICE NGPL, Amarillo Pooling PIN	JACG21	2.260	+0.010	2.235	2.300	2.245	2.275	32	4
ICE NGPL, Amarillo Storage PIN	JAACH21	—	—	—	—	—	—	—	—
ICE NGPL, Iowa-Illinois GC Pool	JAAHN21	—	—	—	—	—	—	—	—
ICE NGPL, Iowa-Illinois AM Pool	JAAH021	—	—	—	—	—	—	—	—
ICE NGPL, Iowa-Illinois GC Storage	JAAHP21	—	—	—	—	—	—	—	—
ICE NGPL, Iowa-Illinois AM Storage	JAAHQ21	—	—	—	—	—	—	—	—
ICE NGPL, Mid-American Citygate	JACN21	—	—	—	—	—	—	—	—
ICE Northern Border, Harper Transfer Point	JACS21	—	—	—	—	—	—	—	—
ICE Northern Border, Nicor Interconnect	JAAC21	—	—	—	—	—	—	—	—
ICE Northern Border, Vector Interconnect	JACU21	—	—	—	—	—	—	—	—
ICE Northern Border, Will County	JACV21	—	—	—	—	—	—	—	—
ICE REX (East), delivered into ANR	JADK21	2.155	-0.115	2.120	2.175	2.140	2.170	84	14
ICE REX (East), delivered into Lebanon Hub	JAAC21	—	—	—	—	—	—	—	—
ICE REX (East), delivered into Midwestern Gas	JADL21	2.230	-0.055	2.190	2.240	2.220	2.240	64	14
ICE REX (East), delivered into NGPL	JADN21	2.195	-0.095	2.180	2.245	2.180	2.210	822	114
ICE REX (East), delivered into Panhandle	JADN21	—	—	—	—	—	—	—	—
ICE REX (East), delivered into Trunkline	JAD021	—	—	—	—	—	—	—	—

## Final Daily Gas Indices – ICE Locations (\$/MMBtu)

Trade date: 01-Aug

Flow date(s): 02-Aug

Location	Symbol	Index	Daily Change	Absolute Low	Absolute High	Common Low	Common High	Volume	Deals
<b>Upper Midwest</b>									
ICE REX (West), delivered into ANR	JAADP21	—	—	—	—	—	—	—	—
ICE REX (West), delivered into Northern Natural	JAADQ21	—	—	—	—	—	—	—	—
ICE REX (West), delivered into Natural Gas Pipeline of America	JADUZ21	—	—	—	—	—	—	—	—
ICE REX (West), delivered into Panhandle	JAADR21	—	—	—	—	—	—	—	—
ICE REX, zone 3 delivered Pool	JAAQR21	—	—	—	—	—	—	—	—
ICE REX, zone 3 receipts	JAAHS21	—	—	—	—	—	—	—	—
ICE Rover, delivered into ANR	JAAHI21	2.155	-0.020	2.130	2.185	2.140	2.170	171	24
ICE Rover, delivered into Panhandle	JAAHJ21	2.160	-0.015	2.150	2.200	2.150	2.175	94	26
ICE Rover, receipts	JAAHR21	—	—	—	—	—	—	—	—
<b>East Texas</b>									
ICE Agua Dulce Hub	JAAGI21	2.175	-0.055	2.150	2.200	2.165	2.190	20	4
ICE Atmos, zone 3, receipts	JAAAL21	2.200	-0.185	2.160	2.270	2.175	2.230	54	14
ICE Banquete Hub	JAAHX21	—	—	—	—	—	—	—	—
ICE Carthage Hub Tailgate	JAAAQ21	2.200	-0.070	2.200	2.200	2.200	2.200	46	6
ICE ENT, STX Map	JAAHT21	2.250	-0.130	2.180	2.300	2.220	2.280	60	10
ICE ETC, Cleburne	JAAHH00	—	—	—	—	—	—	—	—
ICE ETC, Maypearl	JABK21	—	—	—	—	—	—	—	—
ICE Golden Triangle Storage & Hub	JABL21	2.400	-0.090	2.400	2.400	2.400	2.400	20	2
ICE Gulf South, Pool Area #16	JABP21	2.150	-0.075	2.150	2.160	2.150	2.155	21	4
ICE HPL, East Texas Pool	JABR21	—	—	—	—	—	—	—	—
ICE HSC-Kinder Morgan	JAAWM21	—	—	—	—	—	—	—	—
ICE Katy, ENSTOR Pool (excl. Kinder Morgan Texas)	JABW21	2.250	-0.100	2.215	2.280	2.235	2.265	131	20
ICE Katy, Lonestar (warranted as Intrastate)	JABX21	—	—	—	—	—	—	—	—
ICE Katy, Lonestar Interstate	JABY21	2.265	-0.105	2.240	2.280	2.255	2.275	132	16
ICE Katy, Oasis Pipeline	JABZ21	2.235	-0.150	2.190	2.275	2.215	2.255	578	82
ICE Moss Bluff Interconnect (buyers' choice delivered)	JACD21	2.375	-0.095	2.375	2.375	2.375	2.375	70	8
ICE Moss Bluff Storage (in-ground transfers only)	JAACE21	—	—	—	—	—	—	—	—
ICE NGPL, TXOK East Pool	JACP21	2.230	-0.085	2.200	2.260	2.215	2.245	1304	168
ICE NGPL, TXOK East Storage (Gulf Coast) PIN 25658	JAAGA21	—	—	—	—	—	—	—	—
ICE NGPL, TXOK West Pool	JACQ21	—	—	—	—	—	—	—	—
ICE NorTex, Tolar Hub	JACR21	2.235	-0.150	2.150	2.300	2.200	2.275	176	24
ICE Tennessee, zone 0 North	JAEF21	2.150	-0.105	2.145	2.150	2.150	2.150	2	4
ICE Tennessee, zone 0 South	JAEQ21	2.160	-0.050	2.140	2.190	2.150	2.175	256	52
ICE Tennessee, zone 0 STX Border	JABFY21	—	—	—	—	—	—	—	—
ICE Tres Palacios Hub - Injection	JAAFE21	2.245	-0.100	2.210	2.250	2.235	2.250	92	18
ICE Tres Palacios Hub - Withdrawal	JAAFF21	2.340	-0.100	2.325	2.370	2.330	2.350	320	52
<b>Louisiana/Southeast</b>									
ICE ANR, SE Transmission Pool	JAAAT21	2.395	-0.105	2.350	2.420	2.380	2.415	152	34
ICE ANR, SE Gathering Pool	JAAAJ21	—	—	—	—	—	—	—	—
ICE Bay Gas Storage	JADTZ00	—	—	—	—	—	—	—	—
ICE Bobcat Interconnect (buyers' choice delivered)	JAAO21	—	—	—	—	—	—	—	—
ICE Bobcat Storage (in-ground transfer only)	JAAP21	—	—	—	—	—	—	—	—
ICE Egan Interconnect (buyers' choice delivered)	JAAAZ21	2.430	-0.070	2.420	2.440	2.425	2.435	40	4
ICE Egan Storage (in-ground transfer only)	JABA21	—	—	—	—	—	—	—	—
ICE Enable Gas, Perryville Hub	JABG21	—	—	—	—	—	—	—	—
ICE Enable Gas, South Pool only	JABH21	—	—	—	—	—	—	—	—
ICE Gillis Hub	JAWL21	—	—	—	—	—	—	—	—
ICE Gulf South, Perryville Exchange Point	JABO21	2.220	+0.030	2.220	2.220	2.220	2.220	20	4
ICE Jefferson Island Storage and Hub	JABV21	—	—	—	—	—	—	—	—
ICE MS Hub Storage	JACF21	—	—	—	—	—	—	—	—
ICE NGPL, Louisiana Pooling PIN	JAACL21	—	—	—	—	—	—	—	—
ICE NGPL, Louisiana Storage PIN	JAACM21	—	—	—	—	—	—	—	—
ICE Sonat, Zone 0	JAAHE21	—	—	—	—	—	—	—	—
ICE Sonat, Zone 0 South Louisiana Pool	JAAEJ21	2.585	-0.065	2.555	2.600	2.575	2.595	337	40
ICE Sonat, Zone 1 North Pool	JAAEK21	—	—	—	—	—	—	—	—
ICE Southern Pines Hub	JAAEM21	—	—	—	—	—	—	—	—
ICE Stingray, pool delivery	JAAEO21	—	—	—	—	—	—	—	—
ICE Tennessee, zone 1 100 Leg Pool	JAAER21	2.235	-0.015	2.235	2.240	2.235	2.235	30	4
ICE Tennessee, zone 1 800 Leg Pool	JAAXM21	—	—	—	—	—	—	—	—
ICE Tennessee, zone 1, Station 87 Pool	JAAES21	2.195	-0.045	2.180	2.250	2.180	2.215	116	20
ICE Texas Gas, Mainline Pool	JAAEX21	2.200	-0.105	2.150	2.250	2.175	2.225	331	52
ICE Texas Gas, North Louisiana Pool	JAAEY21	—	—	—	—	—	—	—	—
<b>Rockies/Northwest</b>									
ICE CIG, Mainline (sellers' choice, non-lateral)	JAAFY21	2.215	-0.055	2.190	2.250	2.200	2.230	50	8
ICE CIG, Mainline Pool	JAAFZ21	—	—	—	—	—	—	—	—
ICE CIG, Mainline South (sellers' choice)	JAAAT21	2.185	-0.040	2.130	2.205	2.165	2.205	13	4
ICE Kern River, on system receipt	JACA21	3.825	-0.145	3.770	4.000	3.770	3.885	754	154
ICE Opal Plant Tailgate	JADB21	3.950	-0.075	3.800	4.050	3.890	4.015	88	24
ICE PG&E, Onyx Hill	JAAHB21	—	—	—	—	—	—	—	—

## Final Daily Gas Indices – ICE Locations (\$/MMBtu)

Trade date: 01-Aug

Flow date(s): 02-Aug

Location	Symbol	Index	Daily Change	Absolute Low	Absolute High	Common Low	Common High	Volume	Deals
<b>Louisiana/Southeast</b>									
ICE Pioneer Plant Tailgate	JAADG21	3.830	-0.730	3.830	3.830	3.830	3.830	20	4
ICE Questar, North Pool	JAADI21	3.800	-0.075	3.800	3.800	3.800	3.800	19	4
ICE Questar, South Pool	JAADJ21	—	—	—	—	—	—	—	—
ICE REX, Cheyenne Comp Pool	JACFZ21	2.205	-0.075	2.200	2.210	2.205	2.210	32	6
ICE Ruby, Onyx Hill	JAADG21	—	—	—	—	—	—	—	—
ICE Ruby, Receipt Pool	JAADT21	3.820	-0.390	3.800	3.840	3.810	3.830	20	4
ICE Ryckman Creek Gas Storage	JAADU21	—	—	—	—	—	—	—	—
ICE WIC, Pool	JAAFH21	—	—	—	—	—	—	—	—
<b>Southwest</b>									
ICE Agua Blanca Pool	JAAHU21	2.165	+1.105	2.050	2.255	2.115	2.215	166	26
ICE El Paso, Anadarko Pool	JAAHZ21	2.235	-0.015	2.200	2.250	2.225	2.250	30	4
ICE El Paso, Keystone Pool	JAAHB21	2.215	+1.450	2.100	2.255	2.175	2.255	477	82
ICE El Paso, Plains Pool	JAABC21	2.250	-0.065	2.200	2.300	2.225	2.275	55	10
ICE El Paso, Waha Pool	JAABD21	2.210	+1.225	2.100	2.250	2.175	2.250	388	58
ICE GCX Waha Hub	JAAHX21	—	—	—	—	—	—	—	—
ICE Oasis, Waha Pool	JAAZ21	—	—	—	—	—	—	—	—
ICE ONEOK, Westex Pool	JAAAD21	2.205	+0.045	2.160	2.250	2.185	2.230	120	20
ICE PG&E, Daggett	JAAD21	—	—	—	—	—	—	—	—
ICE PG&E, Kern River Station	JAAD21	—	—	—	—	—	—	—	—
ICE PG&E, Topock	JAADE21	4.055	+0.115	3.750	4.200	3.945	4.170	73	16
ICE Socal, Blythe	JAADX21	—	—	—	—	—	—	—	—
ICE Socal, Ehrenberg (delivered)	JAADY21	4.160	-0.185	4.150	4.300	4.150	4.200	242	62
ICE Socal, Firm Storage only (Citygate)	JAAD21	—	—	—	—	—	—	—	—
ICE Socal, In-ground transfer only (Citygate)	JAAEA21	—	—	—	—	—	—	—	—
ICE Socal, Interruptible Storage only (Citygate)	JAAEB21	—	—	—	—	—	—	—	—
ICE Socal, Kern River Station	JAAEC21	4.100	-0.030	4.100	4.100	4.100	4.100	4	2
ICE Socal, Kramer Junction	JAAED21	—	—	—	—	—	—	—	—
ICE Socal, Needles	JAAEE21	6.205	+0.040	6.100	6.250	6.170	6.245	86	22
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	—	—	—	—	—	—	—	—
ICE Transwestern, Central Pool	JAAFB21	—	—	—	—	—	—	—	—
ICE Transwestern, Panhandle Pool	JAAFC21	—	—	—	—	—	—	—	—
ICE Transwestern, West Texas Pool	JAAFD21	2.100	+2.300	2.100	2.100	2.100	2.100	16	4
ICE Waha Hub, West Texas (buyer's choice delivered)	JAAFG21	2.205	+1.425	2.080	2.300	2.150	2.260	425	60

## ICE Gas daily Assessment Rationale

The final daily indices for ICE locations are a volume weighted average of Intercontinental 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. Platts is a part of S&P Global Commodity Insights. This rationale applies to symbols found in the Market Data category GI listed at <http://plts.co/3z3y30qw7qH>. Questions may be directed to [americasgaspricing@spglobal.com](mailto:americasgaspricing@spglobal.com).



Monthly Bidweek Spot Gas Prices, August 1 - Platts locations (\$/MMBtu)

		Index	Low	High	Volume	Deals		Index	Low	High	Volume	Deals	
Northeast							Louisiana/Southeast						
Algonquin, city-gates	IGBEE03	1.89	1.89	1.89	10	2	ANR, La.	IGBBF03	2.47	2.46	2.48	232	30
Iroquois, receipts	IGBCR03	2.21**	2.21	2.21	0	0	Columbia Gulf, La.	IGBBG03	2.38	2.36	2.41	113	19
Iroquois, zone 2	IGBEJ03	2.60	2.29	2.79	67	31	Columbia Gulf, mainline	IGBBH03	2.04	2.02	2.06	110	26
Niagara	IGBCS03	1.49	1.49	1.49	0.10	1	Florida Gas, zone 2	IGBBJ03	2.69	2.69	2.69	3	1
Tennessee, zone 6 del.	IGBEI03	NA	NA	NA	NA	NA	Florida Gas, zone 3	IGBBK03	3.09	3.07	3.11	117	27
Tennessee, zone 6, del. North	IGBJW03	NA	NA	NA	NA	NA	Henry Hub	IGBBL03	2.48	2.47	2.49	111	17
Tennessee, zone 6, del. South	IGBJX03	NA	NA	NA	NA	NA	Pine Prairie Hub	IGBRU03	2.44	2.43	2.44	83	11
Texas Eastern, M-3	IGBEK03	1.24	1.19	1.27	109	33	Southern Natural, La.	IGBB003	2.66	2.65	2.68	182	31
Transco, zone 5 del.	IGBEN03	2.97	2.88	3.07	547	117	Tennessee, Louisiana, 500 Leg	IGBBP03	2.56	2.55	2.59	80	13
Transco, zone 5 del. South	IGCHL03	2.97	2.88	3.07	547	117	Tennessee, Louisiana, 800 Leg	IGBBQ03	2.24	2.24	2.24	4	2
Transco, zone 6 N.Y.	IGBEM03	1.29	1.24	1.33	20	4	Texas Eastern, ELA	IGBBS03	2.23	2.22	2.23	40	8
Transco, zone 6 non-N.Y.	IGBEL03	1.20	1.16	1.39	289	64	Texas Eastern, M-1 30-in.	IGBDI03	NA	NA	NA	NA	NA
Transco, zone 6 non-N.Y. North	IGBJS03	1.20	1.16	1.39	289	64	Texas Eastern, WLA	IGBBR03	2.40	2.39	2.41	146	14
Northeast regional average	IGCAA03	1.86					Texas Gas, zone 1	IGBA003	2.09	2.07	2.12	432	76
Appalachia							Texas Gas, zone SL	IGBBT03	2.49	2.49	2.49	0.75	1
Columbia Gas, App.	IGBDE03	1.35	1.28	1.44	337	70	Transco, station 65	IGBIE03	2.71	2.68	2.74	116	29
Columbia Gas, App. Non-IPP	IGBJU03	NA	NA	NA	NA	NA	Transco, zone 3	IGBBV03	2.52	2.41	2.74	345	39
Eastern Gas, Appalachia	IGBDC03	1.08	1.04	1.14	147	59	Transco, zone 4	IGBDJ03	2.74	2.71	2.85	423	65
Lebanon Hub	IGBFJ03	2.06	2.05	2.09	73	10	Trunkline, La.	IGBER03	NA	NA	NA	NA	NA
Leidy Hub	IGBDD03	1.19	1.19	1.19	0.01	1	Trunkline, zone 1A	IGBGF03	2.07	2.07	2.07	30	8
Millennium, East receipts	IGBIW03	1.01	0.95	1.10	23	10	Louisiana/Southeast regional average	IGHAA03	2.45				
Tennessee, zone 4-200 leg	IGBJN03	1.38	1.29	1.44	134	33	Rockies/Northwest						
Tennessee, zone 4-300 leg	IGBFL03	0.89	0.89	0.91	205	47	Cheyenne Hub	IGBCO03	2.27	2.23	2.33	25	4
Tennessee, zone 4-313 Pool	IGCFL03	1.12	1.09	1.34	39	15	CIG, Rockies	IGBCK03	2.27	2.23	2.34	160	32
Texas Eastern, M-2 receipts	IGBJE03	1.03	1.00	1.08	191	50	Kern River, Wyoming	IGBCL03	3.98	3.88	4.40	228	42
Transco, Leidy Line receipts	IGBIS03	1.05	1.02	1.08	143	36	Northwest, Canadian border (Sumas)	IGBCT03	3.93	3.90	3.95	35	8
Appalachia regional average	IGDAA03	1.22					Northwest, Rocky Mountains	IGBCP03	3.98	3.88	4.40	158	27
Midcontinent							Northwest, S. of Green River	IGBYT03	NA	NA	NA	NA	NA
ANR, Okla.	IGBBY03	2.20	2.20	2.20	10	2	Northwest, Wyoming Pool	IGBDA03	3.98	3.88	4.40	158	27
Enable Gas, East	IGBCA03	2.14	2.13	2.14	10	6	PG&E, Malin	IGBD003	4.13	4.05	4.41	81	19
NGPL, Midcontinent	IGBBZ03	2.17	2.15	2.19	135	28	TCPL Alberta, AECO-C#	IGBCU03	2.35	2.28	2.46	319	91
Oneok, Okla.	IGBCD03	2.09	2.08	2.16	57	17	Westcoast, station 2#	IGBCZ03	1.63	1.59	1.83	63	12
Panhandle, Tx.-Okla.	IGBCE03	2.04	2.02	2.14	198	41	Rockies/Northwest regional average	IGIAA03	3.43				
Southern Star	IGBCF03	2.12	2.11	2.14	20	4	Southwest						
Midcontinent regional average	IGEAA03	2.13					El Paso, Permian Basin	IGBAB03	2.29	2.16	2.50	396	86
Upper Midwest							El Paso, San Juan	IGBCH03	3.69	3.60	4.00	176	38
Chicago city-gates	IGBDX03	2.22	2.21	2.23	104	24	El Paso, West Texas	IGBRT03	2.27	2.16	2.34	332	74
Chicago-Nicor	IGBEX03	2.21	2.21	2.23	22	5	Kern River, delivered	IGBRX03	5.63	5.35	6.30	138	25
Chicago-NIPSCO	IGBFX03	2.22	2.21	2.23	62	15	PG&E city-gate	IGBEB03	5.39	5.15	5.58	416	109
Chicago-Peoples	IGBGX03	2.21	2.21	2.22	20	4	PG&E, South	IGBDM03	4.52	4.25	4.75	74	18
Consumers city-gate	IGBDY03	2.21	2.20	2.40	205	45	SoCal Gas	IGBDL03	5.44	5.00	6.50	298	62
Dawn, Ontario	IGBCX03	2.19	2.14	2.34	290	56	SoCal Gas city-gate	IGBG03	9.59	6.30	11.50	82	25
Emerson, Viking GL	IGBCW03	2.10	2.09	2.11	20	6	Transwestern, Permian Basin	IGBAE03	2.10	2.10	2.10	20	2
Mich Con city-gate	IGBDZ03	2.15	2.12	2.21	103	23	Transwestern, San Juan Basin	IGBGK03	3.81	3.70	3.84	16	4
Northern Bdr., Ventura TP	IGBGH03	2.16	2.16	2.16	5	1	Waha	IGBAD03	2.29	2.17	2.35	319	50
Northern, demarc	IGBDV03	2.19	2.18	2.20	120	22	Southwest regional average	IGJAA03	4.48				
Northern, Ventura	IGBDU03	2.16	2.15	2.17	50	10	National Average						
REX, zone 3 delivered	IGBR003	2.11	2.07	2.17	407	62	IGBAA03	\$2.49					
Rover, delivered	IGBRV03	2.05**	2.05	2.05	0	0	# All prices \$/MMBtu except TCPL Alberta, AECO-C and Westcoast Energy, station 2, which is Canadian\$/GJ (gigajoule). **Assessed price; All volumes in (000) MMBtu/day.						
Upper Midwest regional average	IGFAA03	2.15											
East Texas													
Florida Gas, zone 1	IGBAW03	2.34	2.28	2.45	17	3							
Houston Ship Channel	IGBAP03	2.27	2.26	2.27	30	4							
Katy	IGBAQ03	2.30	2.27	2.49	59	5							
NGPL, STX	IGBAZ03	2.21	2.20	2.21	45	2							
NGPL, Texok zone	IGBAL03	2.15	2.15	2.16	74	16							
Tennessee, zone 0	IGBBA03	2.10	2.08	2.10	208	37							
Texas Eastern, ETX	IGBAN03	NA	NA	NA	NA	NA							
Texas Eastern, STX	IGBBB03	2.34	2.34	2.34	10	2							
Transco, zone 1	IGBBC03	2.26	2.25	2.27	23	8							
Transco, zone 2	IGBBU03	2.49	2.49	2.49	6	2							
East Texas regional average	IGGAA03	2.27											

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