

Daily Rundown

- Feed gas deliveries to U.S. LNG terminals hit a new low
- Natgas storage inventories high internationally
- Henry Hub prices tracking nearly \$1 below year-ago levels

SUPPLY/DEMAND

LNG Recap: Lack of Export Demand has U.S. Storage on Track to Fill by Fall

Feed gas deliveries to U.S. LNG terminals hit a new low last week as global prices are still weighed down by a supply glut and demand for American exports remains subdued given high storage inventories in Asia and Europe.

Genscape Inc. noted that feed gas volumes fell to 2.8 Bcf on Thursday, while NGI's export tracker showed them at 2.9 Bcf. That's about 1 Bcf/d less than June's average. Feed gas had bounced back slightly on Friday to more than 3 Bcf/d.

European storage inventories were at about 82% of capacity as the week came to a close and are expected to fill by the end of injection season. Inventories are also high in Asia, which has kept prices depressed and spot activity subdued.

Meanwhile, a new dynamic is shaping up in the United States as the lack of export demand could find storage full by the fall. The Energy Information Administration forecast this month that working gas in storage could reach more than 4 Tcf at the end of October, the highest monthly total on record and only 5% below EIA's estimate of demonstrated peak capacity, ClearView Energy Partners LLC recently noted. While the glut is weighing on near-term gas balances, it's also pushing down U.S. prices to levels not seen in years.

Bloomberg New Energy Finance (BNEF) estimated that low European prices in particular could cut 19 billion cubic meters (Bcm) of U.S. LNG exports between the second and third quarters, or roughly 45% of U.S. export capacity. EIA said in its latest [Short-Term Energy Outlook](#) that 110 U.S. cargoes were canceled for June-August lifting. Meanwhile, BNEF says up to 140 cargoes could be canceled in the third quarter.

U.S. LNG remains uneconomic as it would cost more to move it to key markets in Asia and Europe in the coming months. NGI calculations show the Gulf Coast to Asia arbitrage spread in negative territory until September, while the spread between the United States and Europe is negative until October. It would cost even more to move LNG overseas for those that don't have vessels chartered.

European gas prices declined across the curve in Friday trading as well. While maintenance on the Nord Stream pipeline could tighten the prompt month, higher Russian flows from other routes combined with increasing Norwegian flows to Europe are keeping pressure on prices there, said Schneider Electric analyst Balint Balazs in a note to

Prompt Month Statistics - Previous 5 Trading Days

	7-Jul	8-Jul	9-Jul	10-Jul	13-Jul
Max GOM Netback (\$US/MMBtu)	1.586	1.533	1.437	1.346	1.234
L48 LNG Feedstock Deliveries (dth/d)	3.10	3.06	2.92	3.11	3.29
Futures (\$US/MMBtu)					
Henry Hub	1.876	1.824	1.779	1.805	1.739
JPN/KOR	2.195	2.190	2.170	2.175	2.155
NBP	1.950	1.902	1.832	1.727	1.557
TTF	2.027	1.974	1.907	1.815	1.702
Shipping (\$US/MMBtu)*					
Sabine Pass to Tokyo	0.919	0.919	0.973	0.973	0.973
Sabine Pass to Milford Haven (U.K.)	0.426	0.425	0.453	0.451	0.449
Sabine Pass to Gate (NW Europe)	0.442	0.441	0.470	0.469	0.468
Landed Price Arbitrage (\$US/MMBtu)**					
Sabine to Tokyo	-0.882	-0.827	-0.848	-0.873	-0.818
Sabine to Gate	-0.572	-0.565	-0.609	-0.730	-0.766
Europe Fundamentals					
Gas in Storage (TWh)***	902.3	908.6	905.5	905.5	917.2
% Full	81.6%	82.1%	81.8%	81.8%	82.9%
Difference to Last Year (TWh)	90.1	91.5	83.6	83.6	82.8
Gas in LNG Storage (10 ³ m ³)***	5322.87	5164.7	4948.2	5604.1	5233.3
% Full	56.8%	55.1%	52.8%	66.1%	63.0%
Spark Spread (Eur/MWh)	23.61	23.34	23.27	22.63	24.11
Clean Spark Spread (Eur/MWh)	10.86	10.47	10.76	9.89	11.34
Dark Spread (Eur/MWh)	18.09	17.91	17.91	16.86	17.78
Clean Dark Spread (Eur/MWh)	-12.34	-12.81	-11.93	-13.53	-12.68
PVB/TTF Premium (%)	28.8%	27.7%	28.2%	28.5%	30.9%
NW Europe Mean Temp (°F)	61	62	65	63	TBD
% Diff From 30-Yr Normal	-5.0%	-3.5%	1.5%	-2.9%	N/A
Asia Fundamentals					
JKM/KOR Oil Parity Slope	5.1%	5.1%	5.1%	5.0%	5.0%
Brent Oil Price Parity (\$US/MMBtu)	7.41	7.45	7.28	7.44	7.35
JKM/KOR Futures (\$US/MMBtu)	2.20	2.19	2.17	2.18	2.16
Japan Coal Price (\$US/MMBtu)	2.99	2.97	2.97	2.97	2.88
Beijing Mean Temp (°F)	81	81	71	72	77
% Diff From Normal	2.9%	-0.5%	0.5%	-6.6%	-3.7%
Seoul Mean Temp (°F)	73	74	76	76	68
% Diff From Normal	1.2%	1.6%	5.0%	4.2%	-8.2%
Tokyo Mean Temp (°F)	80	79	76	78	71
% Diff From Normal	6.7%	4.6%	0.3%	2.9%	-7.1%
Latin America Fundamentals (\$US/MMBtu)					
Mexico					
East (Altamira) DES	1.75	1.70	1.60	1.51	1.40
West (Manzanillo) DES	2.16	2.11	2.02	1.93	1.81
Argentina DES	2.18	2.12	2.03	1.94	1.83
Brazil DES	1.96	1.91	1.82	1.73	1.61
Chile DES	2.25	2.20	2.11	2.02	1.91
Colombia DES	1.80	1.74	1.65	1.56	1.45
Panama DES	1.82	1.76	1.67	1.58	1.47

Current prompt month prices are for Aug, unless otherwise noted.

*Assumes full freight for both laden and ballast legs.

**Excludes regas fees.

***Most recent data available. Typically delayed by two calendar days.

NGI's LNG INSIGHT

clients on Friday. While the lack of LNG imports, particularly from the U.S., has helped to balance the European market in recent weeks, Balazs noted that European LNG imports have picked up this month, with 62 cargoes arriving during the first 10 days of July.

The loose market still has floating LNG storage levels elevated worldwide. According to ClipperData, there were 23 vessels floating with LNG aboard on Friday, down only slightly from 25 earlier in the week.

BNEF said floating storage is likely to increase in the coming months, especially in certain markets. Given a

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U.S. Gulf Coast LNG Netback Prices (12-Month Strip) 13-Jul-2020

Futures Settle (\$US/MMBtu)

Est Shipping Cost from Gulf Coast (\$US/MMBtu)

Gulf Coast Netback (\$US/MMBtu)

Netback Less Henry Hub Futures (\$US/MMBtu)

Spot Month (shipping based on spot market vessel rate)

Month	JPN/KOR	NBP	TTF	JPN/KOR	NBP	TTF	JPN/KOR	NBP	TTF	Max	Chg	HH	Diff (Margin)
Aug-20	\$2.155	\$1.557	\$1.702	\$0.973	\$0.449	\$0.468	\$1.182	\$1.108	\$1.234	\$1.234	(\$0.112)	\$1.739	(\$0.505)

Rest of Curve (shipping based on 1-Yr vessel rate, adjusted for seasonality)

Sep-20	\$2.500	\$1.943	\$2.006	\$1.197	\$0.569	\$0.595	\$1.303	\$1.375	\$1.411	\$1.411	(\$0.121)	\$1.797	(\$0.386)
Oct-20	\$3.140	\$2.573	\$2.719	\$1.469	\$0.713	\$0.751	\$1.671	\$1.860	\$1.968	\$1.968	(\$0.054)	\$1.899	\$0.069
Nov-20	\$3.940	\$3.960	\$3.857	\$1.586	\$0.784	\$0.823	\$2.354	\$3.176	\$3.034	\$3.176	(\$0.001)	\$2.340	\$0.836
Dec-20	\$4.615	\$4.697	\$4.284	\$1.514	\$0.746	\$0.777	\$3.101	\$3.951	\$3.507	\$3.951	\$0.043	\$2.739	\$1.212
Jan-21	\$5.000	\$4.937	\$4.384	\$1.337	\$0.649	\$0.671	\$3.663	\$4.288	\$3.712	\$4.288	\$0.017	\$2.866	\$1.422
Feb-21	\$5.190	\$4.981	\$4.396	\$1.211	\$0.579	\$0.596	\$3.979	\$4.402	\$3.799	\$4.402	\$0.004	\$2.866	\$1.536
Mar-21	\$4.790	\$4.703	\$4.332	\$1.077	\$0.510	\$0.525	\$3.713	\$4.193	\$3.807	\$4.193	\$0.030	\$2.734	\$1.459
Apr-21	\$4.350	\$4.264	\$4.180	\$1.013	\$0.476	\$0.494	\$3.337	\$3.788	\$3.686	\$3.788	\$0.024	\$2.462	\$1.326
May-21	\$4.265	\$4.009	\$4.091	\$1.029	\$0.483	\$0.503	\$3.236	\$3.526	\$3.588	\$3.588	\$0.037	\$2.429	\$1.159
Jun-21	\$4.240	\$3.819	\$3.979	\$1.093	\$0.514	\$0.538	\$3.147	\$3.305	\$3.441	\$3.441	\$0.036	\$2.464	\$0.977
Jul-21	\$4.205	\$3.851	\$3.998	\$1.110	\$0.524	\$0.549	\$3.095	\$3.327	\$3.449	\$3.449	\$0.035	\$2.510	\$0.939
NTM Avg	\$4.033	\$3.775	\$3.661				\$2.815	\$3.192	\$3.053	\$3.241	(\$0.005)	\$2.404	\$0.837

West of Suez Spot 174K XDF/MEGI Day Rate: \$42,000

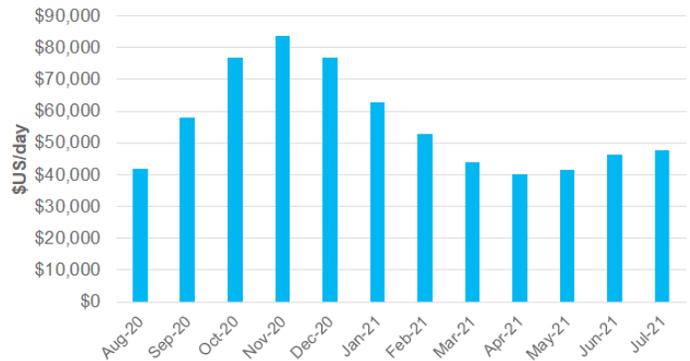
West of Suez 1-Yr TC 174K XDF/MEGI Vessel Rate: \$56,000

Spot Month Sabine Pass Export Landed Price Arbitrage Continuation Chart



Source: NGI calculations, CSI, Fearnleys

West of Suez LNG Vessel Rate Curve



Note: Based on 174,000 m³ XDF/MEGI vessels. This is not an actual traded curve. Figures represent NGI's estimate of a laden leg forward curve based on current spot market and 1-yr charter rates, adjusted for historical seasonality. The simple average of all months equals the 1-yr charter rate.

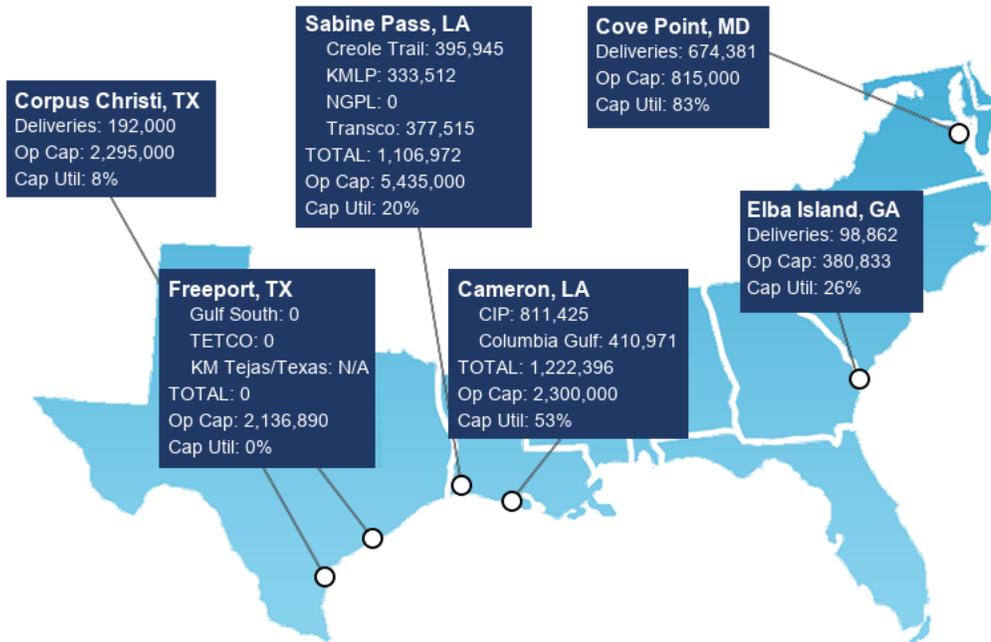
Other North America LNG Netback Prices 13-Jul-2020

	Netback to NGI's AECO				Netback to NGI's SoCal				Netback to NGI's Transco				NGI's Waha
	Western Canada	Forwards	Diff	Diff %	Costa Azul	Border Forwards	Diff	Diff %	Cove Point	Zn 5 Forwards	Diff	Diff %	Forwards
	\$US/MMBtu	\$US/MMBtu	\$US/MMBtu	%	\$US/MMBtu	\$US/MMBtu	\$US/MMBtu	%	\$US/MMBtu	\$US/MMBtu	\$US/MMBtu	%	\$US/MMBtu
Aug-20	\$1.765	\$1.455	\$0.310	21%	\$1.694	\$2.008	-\$0.314	-16%	\$1.340	\$1.845	-\$0.505	-27%	\$1.505
Sep-20	\$2.025	\$1.462	\$0.563	39%	\$1.936	\$1.905	\$0.031	2%	\$1.566	\$1.827	-\$0.261	-14%	\$1.422
Oct-20	\$2.626	\$1.478	\$1.148	78%	\$2.528	\$1.840	\$0.688	37%	\$2.242	\$1.910	\$0.332	17%	\$1.343
Nov-20	\$3.297	\$1.822	\$1.475	81%	\$3.170	\$2.317	\$0.853	37%	\$3.397	\$2.403	\$0.994	41%	\$1.787
Dec-20	\$3.920	\$1.876	\$2.044	109%	\$3.781	\$3.304	\$0.477	14%	\$4.090	\$3.461	\$0.629	18%	\$2.216
Jan-21	\$4.343	\$1.946	\$2.397	123%	\$4.213	\$3.357	\$0.856	25%	\$4.363	\$4.832	-\$0.469	-10%	\$2.399
Feb-21	\$4.618	\$1.931	\$2.687	139%	\$4.507	\$3.194	\$1.313	41%	\$4.481	\$4.701	-\$0.220	-5%	\$2.383
Mar-21	\$4.285	\$1.887	\$2.398	127%	\$4.188	\$2.437	\$1.751	72%	\$4.257	\$3.025	\$1.232	41%	\$2.129
Apr-21	\$3.908	\$1.620	\$2.288	141%	\$3.825	\$1.955	\$1.870	96%	\$3.871	\$2.625	\$1.246	47%	\$1.837
May-21	\$3.848	\$1.574	\$2.274	144%	\$3.771	\$1.937	\$1.834	95%	\$3.700	\$2.462	\$1.238	50%	\$1.767
Jun-21	\$3.815	\$1.560	\$2.255	145%	\$3.735	\$2.130	\$1.605	75%	\$3.581	\$2.515	\$1.066	42%	\$1.890
Jul-21	\$3.750	\$1.612	\$2.138	133%	\$3.664	\$2.682	\$0.982	37%	\$3.572	\$2.324	\$1.248	54%	\$2.079
NTM Avg	\$3.517	\$1.685	\$1.831	109%	\$3.418	\$2.422	\$0.996	41%	\$3.372	\$2.828	\$0.544	19%	\$1.896

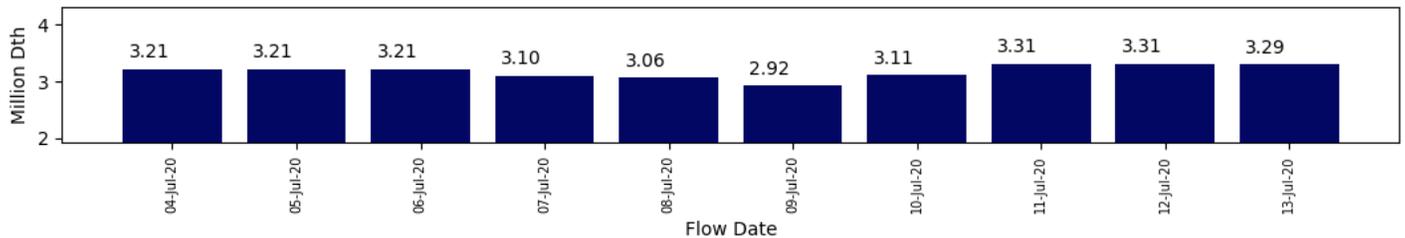
Note: Netbacks are based on deliveries to Asia & Europe. LNG Canada and Costa Azul liquefaction facilities are not expected to be in-service until 2025 and 2023, respectively. But the above calculations give an indication of how LNG may be priced on an FOB basis if those locations were operational. NGI's Forward Look has 10-year forward curves for more than 60 locations in North America. For more information, please visit our Forward Look product page at natgasintel.com/product/forward-look

Source: NGI's Forward Look, CSI, Fearnleys, NGI calculations

NGI's LNG INSIGHT U.S. LNG EXPORT TRACKER 13-Jul-2020

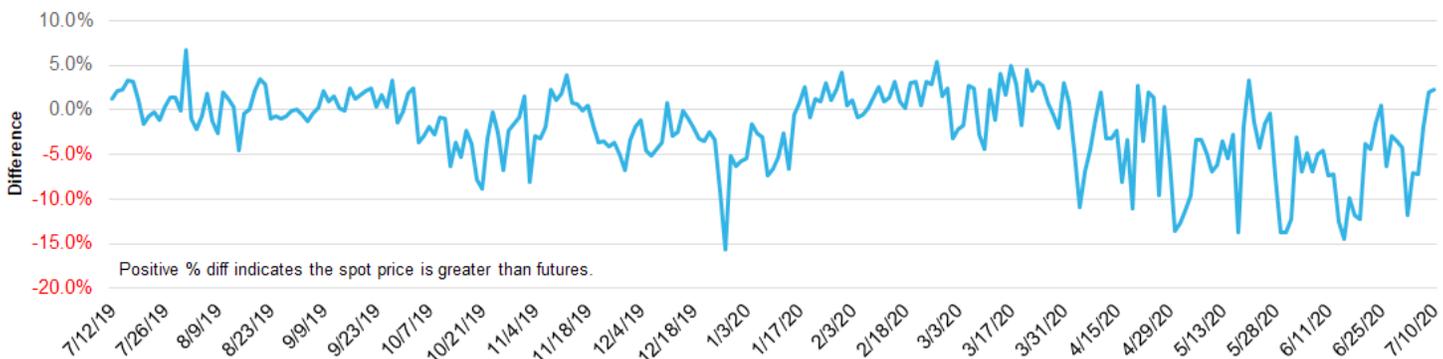


Daily Summary (Volumes Listed in Dekatherms)	
Total Deliveries to U.S. LNG Export Facilities:	3,294,611
Previous Day:	3,309,517
Change:	-14,906



Note: Figures are NGI's estimates of gas delivered to each respective LNG liquefaction facility, listed in dekatherms, and based on best available cycle as of the morning of each listed gas day.
 Source: Pipeline EBBs, NGI calculations

NGI's Daily Henry Hub Spot Index vs. Prompt (CME) Futures Contract 13-Jul-2020



Interested in the data behind this chart? NGI publishes daily and monthly spot market prices for Henry Hub and more than 140 other locations in North America. Please go to natgasintel.com/product/daily-gpi for more details.

Source: NGI's Daily Gas Price Index, CSI, NGI calculations





LNG Freight Costs for Selected Routes

13-Jul-2020

Trade Route (\$ / MMBtu)	174k MEGI			160k TFDE			145k ST		
Bonny / Montoir	0.408	0.000	↔	0.411	-0.001	▼	0.446	-0.001	▼
Bonny / Tokyo	0.849	-0.002	▼	0.903	-0.005	▼	1.014	-0.008	▼
Ras Laffan / Montoir	0.438	0.000	↔	0.447	0.000	↔	0.468	-0.001	▼
Ras Laffan / Tokyo	0.334	0.000	↔	0.354	-0.001	▼	0.395	-0.001	▼
Dampier / Tokyo	0.284	-0.001	▼	0.302	-0.001	▼	0.347	-0.002	▼
Zeebrugge / Bahia Blanca	0.502	-0.002	▼	0.556	-0.003	▼	0.630	-0.005	▼
Zeebrugge / Dahej	0.540	-0.002	▼	0.582	-0.003	▼	0.705	-0.005	▼
Zeebrugge / Tokyo	0.849	-0.003	▼	0.950	-0.005	▼	1.059	-0.009	▼
Sabine / Bahia Blanca	0.499	-0.002	▼	0.560	-0.003	▼	0.626	-0.005	▼
Sabine / Dahej	0.749	-0.002	▼	0.847	-0.005	▼	0.927	-0.008	▼
Sabine / Tokyo	0.735	-0.002	▼	0.828	-0.005	▼	0.917	-0.008	▼
Sabine / Zeebrugge	0.418	-0.002	▼	0.507	-0.004	▼	0.604	-0.007	▼
Port Moresby / Tokyo	0.282	-0.001	▼	0.300	-0.001	▼	0.340	-0.002	▼

Source: Fearnleys (www.fearnleys.com). Assumes cold vessel. Speed used is 17 knots on laden passage and 16 knots on ballast passage.



Spot LNG Vessel Rates (\$USD/day)

13-Jul-2020

Vessel Rates		
Vessel Type / Region	WEST	EAST
174k XDF / MEGI	42,000	40,000
155k - 165k TFDE	34,000	31,000
138k - 145k ST	23,000	21,000

Pacific Voyage Parameters

Fuel and 50% Hire on Ballast Bonus to Singapore

Middle East Voyage Parameters

Fuel and 50% Hire on Ballast Bonus to Fujairah

Atlantic Voyage Parameters

Fuel and 50% Hire on Ballast Bonus to Load Port, or to Gibraltar for intra Atlantic basin voyages

Source: Fearnleys (www.fearnleys.com)

West of Suez LNG Vessel Rate Curve 13-Jul-2020

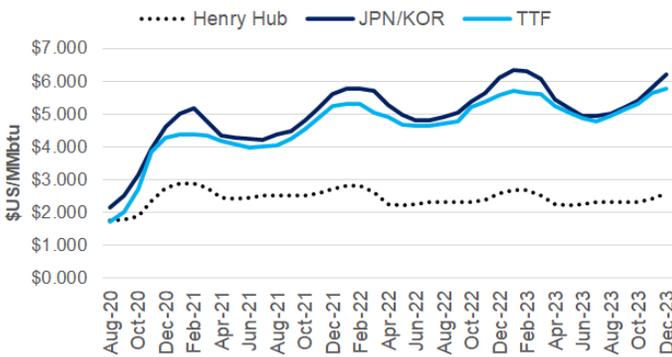
Month	13-Jul	10-Jul	Chg
Aug-20	42,000	42,000	0
Sep-20	57,898	57,898	0
Oct-20	76,784	76,784	0
Nov-20	83,688	83,688	0
Dec-20	76,821	76,821	0
Jan-21	62,774	62,774	0
Feb-21	52,921	52,921	0
Mar-21	43,817	43,817	0
Apr-21	40,016	40,016	0
May-21	41,436	41,436	0
Jun-21	46,260	46,260	0
Jul-21	47,586	47,586	0
Average	56,000	56,000	0

Note: Based on 174,000 m³XDF/MEGI vessels. This is not an actual traded curve. Figures represent NGI's estimate of a laden leg forward curve based on current spot market and 1-yr charter rates, adjusted for historical seasonality. The simple average of all months equals the 1-yr charter rate.



Source: NGI estimates based on Fearnleys data

Global Futures Settles Through 2023 13-Jul-2020



Henry Hub	Date	12-Month Strip*	CY2021	CY2022	CY2023
	13-Jul-20	\$2.404	\$2.598	\$2.431	\$2.405
	10-Jul-20	\$2.423	\$2.607	\$2.445	\$2.409
	Chg	(\$0.019)	(\$0.009)	(\$0.014)	(\$0.004)
JPN/KOR	Date	12-Month Strip*	CY2021	CY2022	CY2023
	13-Jul-20	\$4.033	\$4.709	\$5.350	\$5.575
	10-Jul-20	\$4.029	\$4.698	\$5.350	\$5.575
	Chg	\$0.004	\$0.010	(\$0.000)	\$0.000
TTF	Date	12-Month Strip*	CY2021	CY2022	CY2023
	13-Jul-20	\$3.661	\$4.360	\$5.017	\$5.304
	10-Jul-20	\$3.656	\$4.317	\$4.987	\$5.270
	Chg	\$0.005	\$0.043	\$0.030	\$0.034

*Aug 2020 through Jul 2021

Source: Bloomberg, CSI, NGI calculations



Global LNG & NatGas Futures Prices (Aug 2020) 13-Jul-2020

Contract	Cur/Unit	Settle	Chg	% Chg	Settle (\$US/MMBtu)
JPN/KOR	\$US/MMBtu	\$2.155	-\$0.020	-0.9%	\$2.155
NBP	pence/therm	12.38p	-1.29p	-9.4%	\$1.557
TTF	Eur/MWh	€ 5.110	-€ 0.365	-6.7%	\$1.702
Henry Hub	\$US/MMBtu	\$1.739	-\$0.066	-3.7%	\$1.739

NBP & TTF converted to \$US/MMBtu using same month forex futures contracts.

Source: NGI calculations, CSI



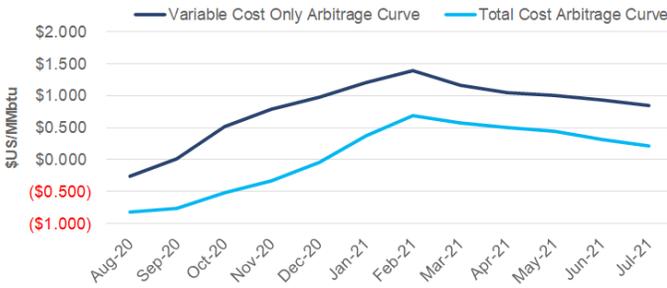
... from SUPPLY/DEMAND - U.S. Storage on Track to Fill by Fall, pg. 1
 steep contango in North Asian prices, traders are likely to delay unloading in September and October, when they can make about 3 cents/MMBtu if they wait longer, said BNEF analysts Verena Viskovic and Anna Borisova.

“Price-driven floating storage in September may help defer 2.7 Bcm of LNG supply from” the third to fourth quarter, the analysts said. “This is the same volume of floating storage identified during the shoulder season last year when

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Estimated Sabine Pass / Asia 12-Month Forward LNG Arbitrage Curves 13-Jul-2020



Note: Assumes title changes hands at sea, so no regas fees. Negative GOM/Asia spreads may not increase the risk of GOM LNG shut-ins as much as those between GOM and Europe, since Europe has much more storage capacity than Asia. As such, Europe often serves as the market of "last resort." Variable costs assume vessels have been chartered, and include fuel, boiloff, Panama Canal and port fees only. Total costs includes variable expenses and fixed vessel chartering fees.

Month	115% HH Futures	Shipping Costs Variable	Shipping Costs Fixed	Variable Only Landed Cost	Total Landed Cost	JPN/KOR Futures	Variable Arbitrage Spread	Total Arbitrage Spread
Aug-20	\$2.000	\$0.410	\$0.563	\$2.410	\$2.973	\$2.155	(\$0.255)	(\$0.818)
Sep-20	\$2.067	\$0.421	\$0.776	\$2.487	\$3.263	\$2.500	\$0.013	(\$0.763)
Oct-20	\$2.184	\$0.440	\$1.029	\$2.624	\$3.653	\$3.140	\$0.516	(\$0.513)
Nov-20	\$2.691	\$0.464	\$1.122	\$3.155	\$4.277	\$3.940	\$0.785	(\$0.337)
Dec-20	\$3.150	\$0.484	\$1.030	\$3.634	\$4.664	\$4.615	\$0.981	(\$0.049)
Jan-21	\$3.296	\$0.496	\$0.841	\$3.792	\$4.633	\$5.000	\$1.208	\$0.367
Feb-21	\$3.296	\$0.502	\$0.709	\$3.797	\$4.507	\$5.190	\$1.393	\$0.683
Mar-21	\$3.144	\$0.490	\$0.587	\$3.634	\$4.221	\$4.790	\$1.156	\$0.569
Apr-21	\$2.831	\$0.476	\$0.536	\$3.308	\$3.844	\$4.350	\$1.042	\$0.506
May-21	\$2.793	\$0.474	\$0.555	\$3.267	\$3.822	\$4.265	\$0.998	\$0.443
Jun-21	\$2.834	\$0.473	\$0.620	\$3.307	\$3.927	\$4.240	\$0.933	\$0.313
Jul-21	\$2.887	\$0.472	\$0.638	\$3.358	\$3.996	\$4.205	\$0.847	\$0.209

Source: NGI calculations, CSI, Fearnleys

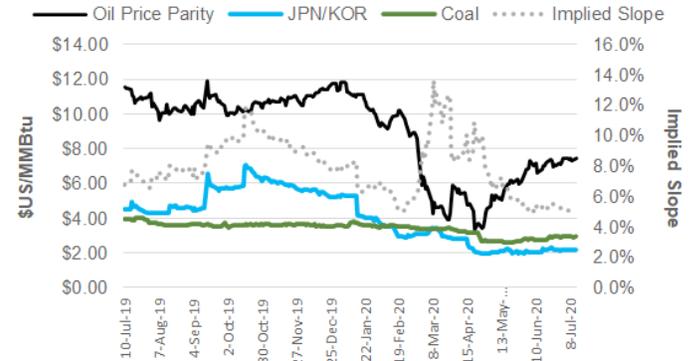


Daily Prompt Oil Linked Asia Parity Prices 13-Jul-2020

Current Spot Month Japan/Korea Futures Contract Price (Aug): **\$2.155**
 Current Spot Month Brent Crude Oil Futures Price (Sep): **\$42.72**
 Current Spot Month Japan Coal Price (Jul): **\$2.88**
 Implied Current Japan/Korea Slope to Brent: **5.0%**

Crude Mo.	3 Mo Avg JCC	Brent	3 Mo Avg JCC	Brent
Sep-20	\$58.23	\$42.72	\$10.02	\$7.35

Trailing 12M Daily Prompt Japan/Korea Futures



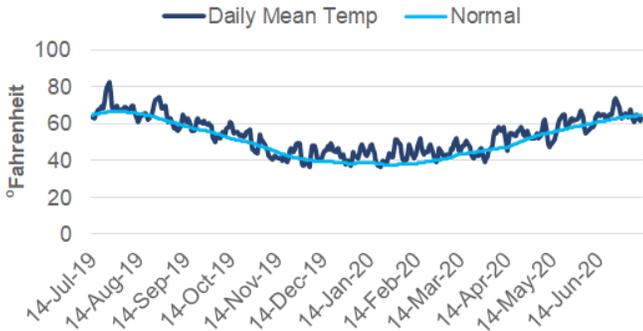
Note: Oil linked parity figures tend to serve as a cap on Asian LNG market prices, while coal prices can help act as a floor.

Source: NGI calculations, ICE, CSI, METI

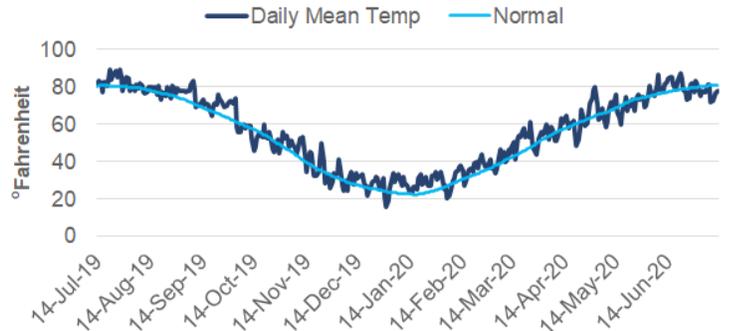


Europe & Asia Weather Data 13-Jul-2020

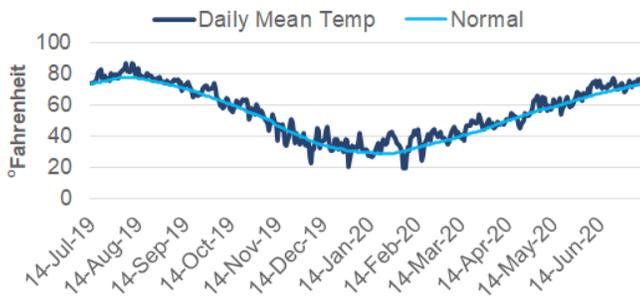
Trailing 365 Day Mean Temperatures - Northwest Europe



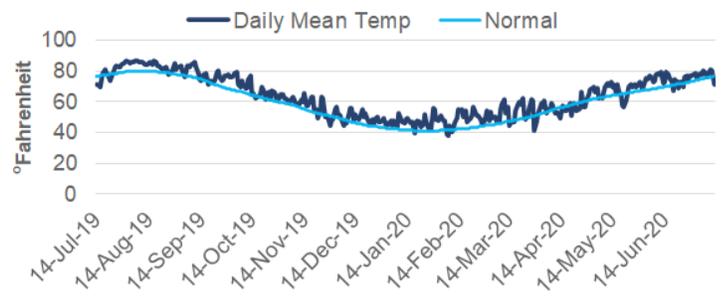
Trailing 365 Day Mean Temperatures - Beijing



Trailing 365 Day Mean Temperatures - Seoul



Trailing 365 Day Mean Temperatures - Tokyo



Source: NGI calculations, Bloomberg



**U.S. Landed vs. European Prices Aug 2020
13-Jul-2020**

Estimated U.S. LNG Landed Price (\$US/MMBtu)

Source	Pricing Point	HH Price	Gate Landed Price (GLP)
GOM	Henry Hub	\$1.739	\$2.146

European NatGas Futures Prices (Eur/MWh & Pound/therm)

Country	Pricing Point	Local Price MWh or therm	Local Price \$US/MMBtu	Diff to GLP* \$US/MMBtu
Belgium	ZTP	€ 4.99	\$1.662	-\$0.484
Czech Rep	CZ VTP	€ 5.65	\$1.882	-\$0.264
France	PEG	€ 5.00	\$1.665	-\$0.481
Germany	NCG	€ 5.16	\$1.718	-\$0.427
Italy	PSV	€ 6.08	\$2.023	-\$0.123
Netherlands	TTF	€ 5.11	\$1.702	-\$0.444
Slovakia	CEGH VTP	€ 6.10	\$2.031	-\$0.114
Spain	PVB	€ 6.85	\$2.279	\$0.134
UK	NBP	12.38p	\$1.557	-\$0.589

Euro Exchange Rate: **1.1363**
 Pound Exchange Rate: **1.25750**



Note: U.S. landed price is to the Gate Terminal in the Netherlands, and exclude any regas or European pipeline grid access fees. We estimate the variable portion of such charges range between \$0.10-\$0.50 per MMBtu. All local European prices are Eur/MWh, except UK, which is pence/therm.

**Negative numbers indicate imported U.S. LNG is more expensive than the local price.

Source: NGI calculations, CME, ICE, EEX, Powernext, CSI, Fearnleys

the profitability of such operations was similar.”

In other news last week, the Federal Energy Regulatory Commission cleared Kinder Morgan Inc. to introduce mixed refrigerant to unit 9 at the Elba Island LNG export facility in Georgia. Four of the facility’s six movable modular liquefaction units have yet to enter service, but the company has said it plans to bring them all online by the end of the summer. Elba’s first export cargo left late last year. ■

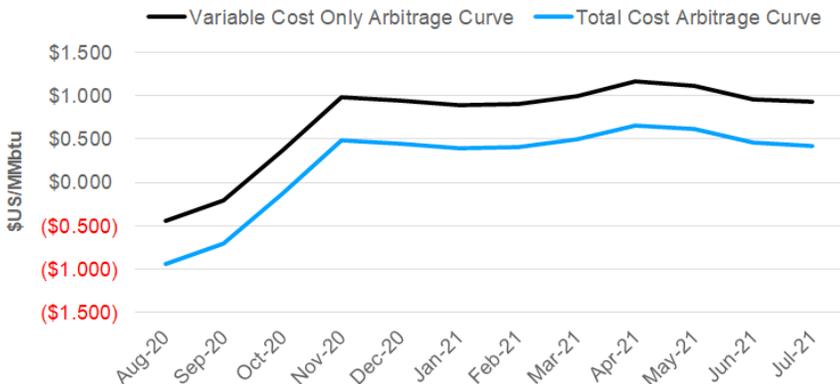
Spanish PVB vs. Dutch TTF Futures 13-Jul-2020

Period	PVB \$US/MMBtu	Chg	TTF \$US/MMBtu	Chg	PVB/TTF Premium (\$)	PVB/TTF Premium %
Aug-20	\$2.279	-\$0.095	\$1.702	-\$0.113	\$0.578	34.0%
Sep-20	\$2.507	-\$0.046	\$2.006	-\$0.120	\$0.502	25.0%
Oct-20	\$3.021	-\$0.057	\$2.719	-\$0.054	\$0.302	11.1%
4Q20	\$3.816	\$0.008	\$3.620	-\$0.003	\$0.196	5.4%
1Q21	\$4.608	\$0.053	\$4.371	\$0.050	\$0.237	5.4%
2Q21	\$4.291	\$0.050	\$4.083	\$0.039	\$0.208	5.1%

Source: NGI calculations, CSI



Estimated Sabine Pass / Europe (Gate) 12-Month Forward LNG Arbitrage Curves 13-Jul-2020



Note: Negative spreads increase the odds of U.S. Gulf of Mexico sourced LNG cargoes being shut-in. Variable costs assume vessels have been chartered, and include fuel, boil-off, and port fees only. Total costs include both variable expenses and fixed vessel chartering fees. Both exclude regas fees, which we estimate would add another \$0.10-\$0.50 in additional costs to each arbitrage curve calculation.



Month	115% Henry Hub Futures	Shipping Costs Variable	Shipping Costs Fixed	Variable Only Landed Cost	Total Landed Cost	TTF Futures	Variable Arbitrage Spread	Total Arbitrage Spread
Aug-20	\$2.000	\$0.146	\$0.322	\$2.146	\$2.646	\$1.702	(\$0.444)	(\$0.944)
Sep-20	\$2.067	\$0.151	\$0.444	\$2.218	\$2.718	\$2.006	(\$0.212)	(\$0.712)
Oct-20	\$2.184	\$0.163	\$0.588	\$2.347	\$2.847	\$2.719	\$0.373	(\$0.127)
Nov-20	\$2.691	\$0.182	\$0.641	\$2.873	\$3.373	\$3.857	\$0.984	\$0.484
Dec-20	\$3.150	\$0.189	\$0.589	\$3.339	\$3.839	\$4.284	\$0.946	\$0.446
Jan-21	\$3.296	\$0.190	\$0.481	\$3.486	\$3.986	\$4.384	\$0.898	\$0.398
Feb-21	\$3.296	\$0.191	\$0.406	\$3.486	\$3.986	\$4.396	\$0.909	\$0.409
Mar-21	\$3.144	\$0.190	\$0.336	\$3.334	\$3.834	\$4.332	\$0.998	\$0.498
Apr-21	\$2.831	\$0.187	\$0.307	\$3.018	\$3.518	\$4.180	\$1.161	\$0.661
May-21	\$2.793	\$0.186	\$0.318	\$2.979	\$3.479	\$4.091	\$1.112	\$0.612
Jun-21	\$2.834	\$0.184	\$0.355	\$3.017	\$3.517	\$3.979	\$0.962	\$0.462
Jul-21	\$2.887	\$0.184	\$0.365	\$3.071	\$3.571	\$3.998	\$0.927	\$0.427

Source: NGI calculations, CSI, Fearnleys

**European Spark/Dark Spreads (Aug 2020)
13-Jul-2020**

EUA Carbon Price (Eur/mt): **29.15**

Nation	Eur/MWh	Spark Spread		Clean Spark Spread	
		EFFCY 49%	45%	49%	45%
Power Futures					
BE	34.77	4.990	24.61	23.68	12.75
CZ	36.39	5.650	24.89	23.83	13.03
FR	35.32	5.000	25.14	24.21	13.28
DE	34.13	5.160	23.63	22.66	11.76
IT	36.86	6.075	24.49	23.36	12.63
NL	32.85	5.110	22.45	21.49	10.58
SK	37.39	6.100	24.97	23.83	13.11
ES	36.15	6.845	22.22	20.94	10.35
UK*	34.05	4.675	24.54	23.66	4.57
Average			24.11	23.08	11.34

Nation	Eur/MWh	Dark Spread		Clean Dark Spread	
		EFFCY 35%	35%	35%	35%
Power Futures					
BE	34.77	48.85	17.22		-11.08
CZ	36.39	48.85	18.84		-9.46
FR	35.32	48.85	17.77		-10.53
DE	34.13	48.85	16.58		-11.72
IT	36.86	48.85	19.31		-8.99
NL	32.85	48.85	15.30		-13.00
SK	37.39	48.85	19.84		-8.46
ES	36.15	48.85	18.60		-9.70
UK*	34.05	48.85	16.50		-31.14
Average			17.78		-12.68

Belgium (BE) / Czech Rep (CZ) / France (FR) / Germany (DE) / Italy (IT) / Holland (NL) / Slovakia (SK) / Spain (ES) / United Kingdom (UK)

*UK clean spark and dark spreads incorporate the cost of the UK Carbon Price Support levy. See methodology for all assumptions.

Source: NGI calculations, CSI

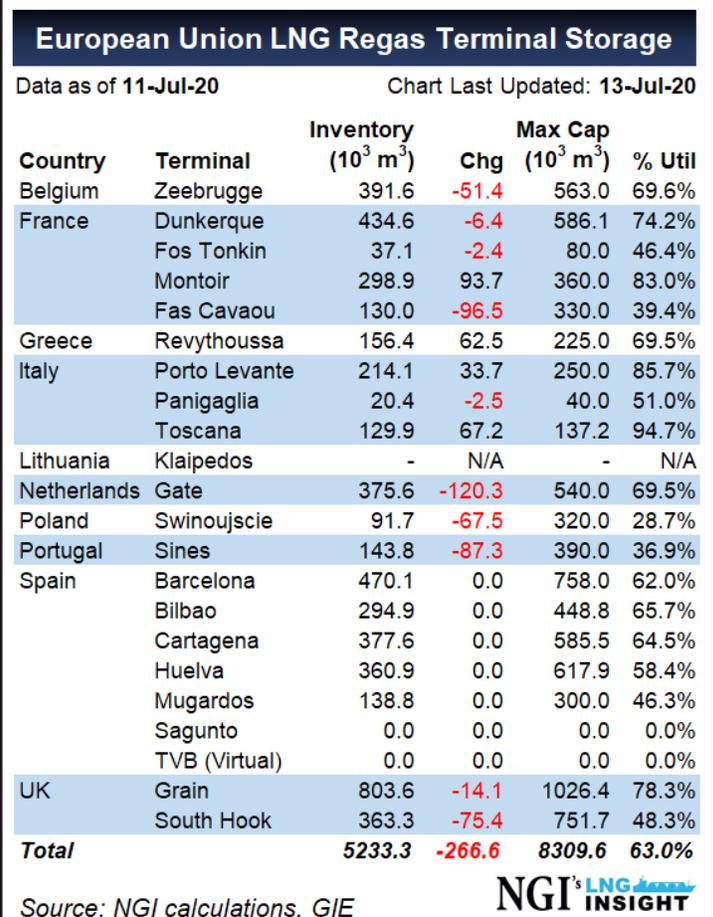
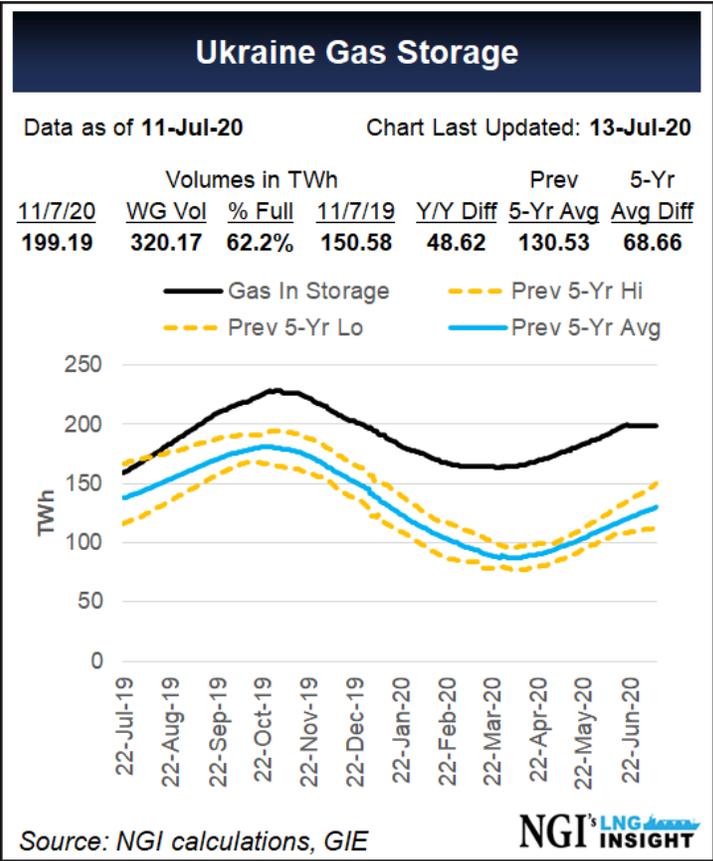
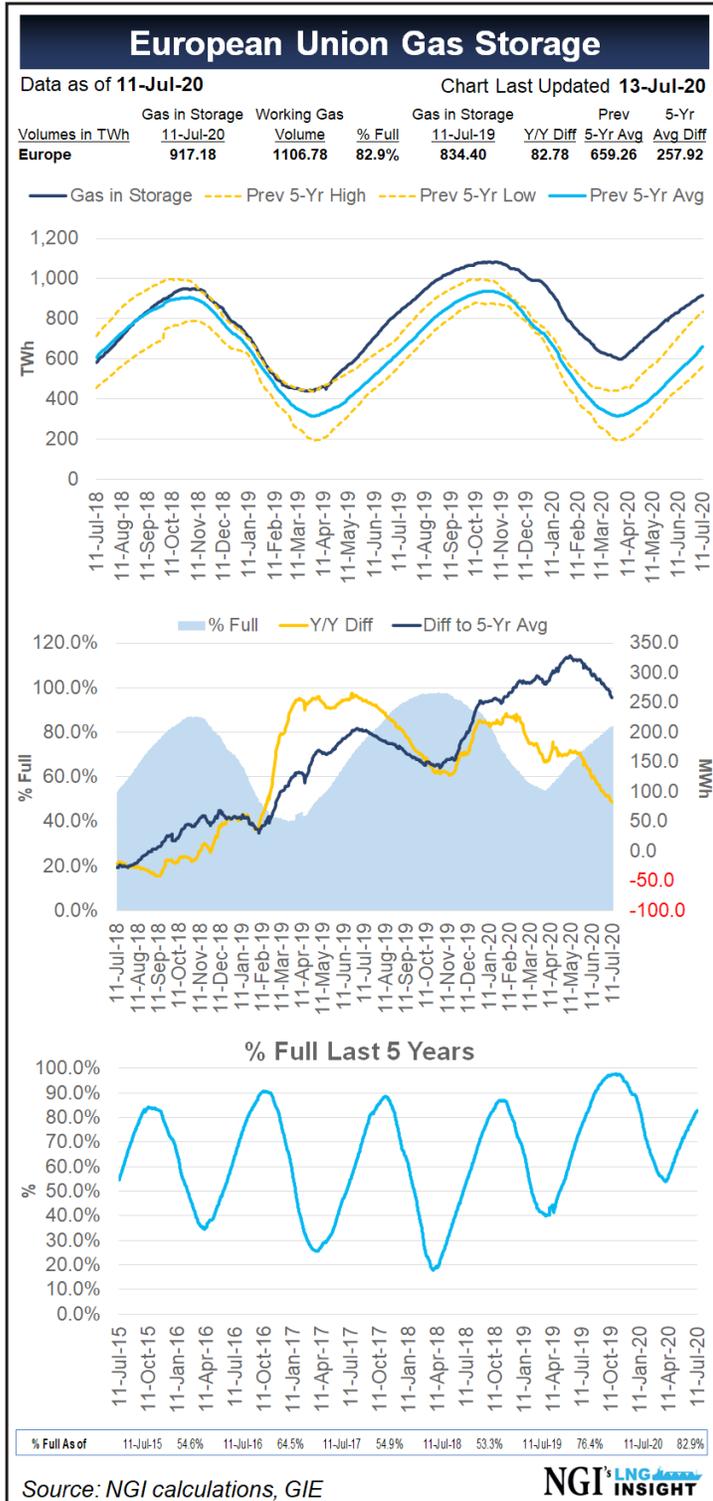


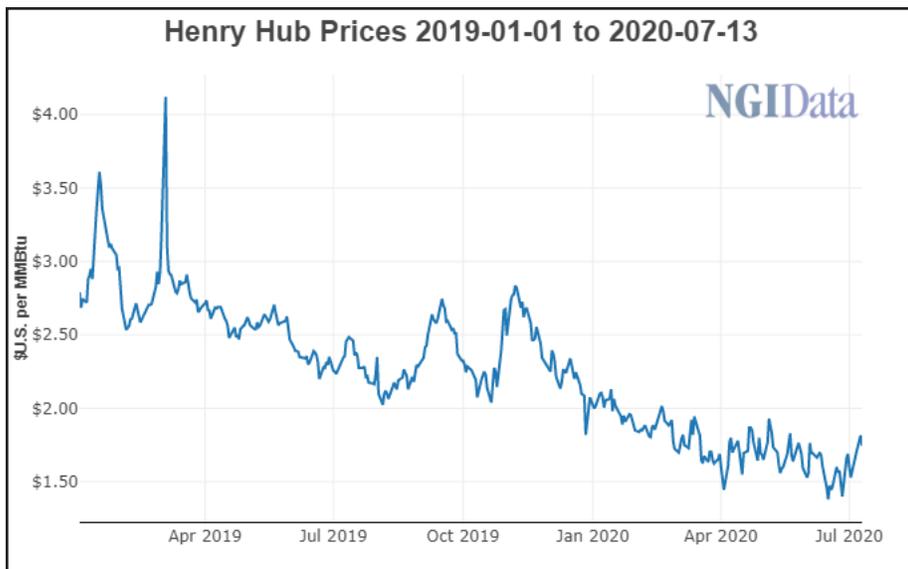
PRICES

EIA Says Henry Hub Natural Gas Averaged \$1.81/MMBtu January-June

U.S. natural gas benchmark Henry Hub prices tracked nearly \$1 below year-ago levels in the first half of the year, averaging only \$1.81/MMBtu, according to the Energy Information Administration (EIA).

This included a record low of \$1.61 in June and sub-\$2 gas in each month from February through June. Before 2020, ...cont' pg. 8





the Henry Hub price averaged less than \$2 in only one month -- March 2016. The daily Henry Hub price reached its lowest level in more than 20 years on June 16, settling at \$1.38, *NGI* data show.

“Prices started the year low because of mild winter weather, which resulted in less natural gas demand for space heating,” said the EIA.

Working U.S. natural gas stocks entered the heating season at 3,575 Bcf, nearly the same as the average over the previous five

years, according to the agency. From there, tepid demand left inventories at a robust 2,008 Bcf at the end of March, which was 19% more than the previous five-year average and the most working natural gas in storage since the 2016-17 winter. In fact, net withdrawals totaled only 1,718 Bcf during the heating season, according to the EIA, the least in four winters.

“Beginning in March, spring weather and the economic slowdown induced by mitigation efforts for the coronavirus disease 2019 (Covid-19) contributed to lower demand, further lowering prices,” EIA said.

High U.S. storage levels and lower prices also have been the result of a decline in liquefied natural gas (LNG) exports, according to the agency. U.S. LNG export demand has fallen by half from January-June, from 9.8 Bcf/d in late March to less than 4.0 Bcf/d in June. Nevertheless, U.S. LNG exports, which averaged an estimated 5.0 Bcf/d in 2019, are **expected by the EIA to increase** to 5.4 Bcf/d this year and 7.3 Bcf/d next year.

U.S. industrial demand, meanwhile, is down by 0.6 Bcf/d, or 2.7%, compared with the year-ago period, EIA said.

Natural gas prices are expected by the agency to stay low in the coming months before eventually increasing by the end of 2020.

By the fall, EIA expects low prices to lead to further declines in natural gas production as a result of lags between natural gas price changes and adjustments to production levels.

...cont' pg. 9

2020

EDITION

FULL-SIZE MAP 52" x 36"

NGI'S MAP OF NORTH AMERICAN NATURAL GAS PIPELINES, LNG FACILITIES & SHALE PLAYS



177
Operational
Pipelines



48
Proposed
Pipelines



163
North American
Market Hubs



47
Imp/Exp
Border Points



53
LNG Imp/Exp
Terminals



LA & TX
LNG
Details



Permian
Zoomed
Pipeline Inset



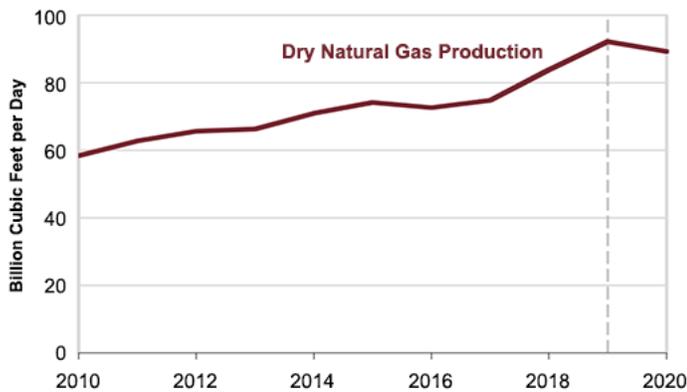
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Annual U.S. Natural Gas Production



Source: U.S. Energy Information Administration

The agency projects U.S. dry natural gas production to decrease by 3% to average 89.2 Bcf/d in 2020, down from 92.2 Bcf/d in 2019.

EIA expects natural gas spot prices to rise by 4Q2020 as production falls and the winter heating season begins. In its July 2020 Short-Term Energy Outlook (STEO), EIA forecasts the Henry Hub natural gas spot price for 2H2020 will average \$2.05.

Enverus also said lower production would spur prices later this year, with the firm forecasting that Henry Hub would average \$3.90 for the winter 2020-21. A Morgan Stanley research team led by Equity Analysts & Commodities Strategist Devin McDermott sees Henry Hub prices averaging \$1.94 for 2020 and \$2.65 in 2021. The team maintains their long-term assumption of \$2.75 Henry Hub.

The low price of natural gas is expected by the EIA to encourage more natural gas consumption in the electric power sector in 2020, which already is tracking 7% higher in the first half of 2020 compared with last year. Consumption in all other sectors is projected to decline, with overall 2020 natural gas consumption set to fall by 3 Bcf/d year/year, according to EIA. ■

Latin America DES Prices 13-Jul-2020

Country	Terminal	\$/US/MBtu					
		Aug	Chg	Sep	Chg	Oct	Chg
Argentina	Bahia Blanca	1.83	-0.11	2.01	-0.12	2.56	-0.05
Brazil	Pecem	1.61	-0.11	1.79	-0.12	2.35	-0.05
Chile	Quintero	1.91	-0.11	2.08	-0.12	2.64	-0.05
Colombia	Colombia	1.45	-0.11	1.62	-0.12	2.18	-0.05
Mexico East	Altamira	1.40	-0.11	1.58	-0.12	2.13	-0.05
Mexico West	Manzanillo	1.81	-0.11	1.99	-0.12	2.55	-0.05
Panama	Costa Norte	1.47	-0.11	1.65	-0.12	2.20	-0.05



For more regional coverage of Latin America, please see NGI's Mexico Gas Price Index at natgasintel.com/news/mexico-gas-price-index

Source: NGI calculations, CME Group, CSI, Fearnleys



NGI's LNG INSIGHT

MONDAY,
JULY 13, 2020
VOLUME 1, NO. 188

NGI's LNG Insight is published daily, each business day by Intelligence Press, Inc. (703) 318-8848.

In addition to LNG news and data, NGI also publishes an array of business intelligence services covering the North American continental natural gas market.

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