

Control Number: 49737



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APPLICATION OF SOUTHWESTERN
ELECTRIC POWER COMPANY FOR
CERTIFICATE OF CONVENIENCE
AND NECESSITY AUTHORIZATION
AND RELATED RELIEF FOR THE
ACQUISITION OF WIND
GENERATION FACILITIES

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BEFORE THE STATE OFFICE

OF

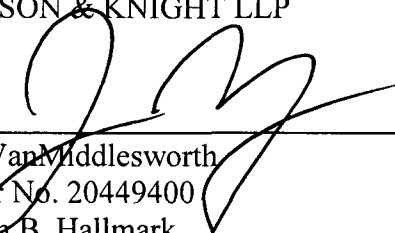
ADMINISTRATIVE HEARINGS

TEXAS INDUSTRIAL ENERGY CONSUMERS' RESPONSE TO
SOUTHWESTERN ELECTRIC POWER COMPANY'S
FIRST REQUEST FOR INFORMATION

Texas Industrial Energy Consumers ("TIEC") files the following responses to the First Requests for Information ("RFI") to TIEC filed by Southwestern Electric Power Company ("SWEPCO"). The request was filed at the Commission and received by TIEC on January 21, 2020. Accordingly, pursuant to the procedural schedule entered in this case, TIEC's response is timely filed. TIEC's responses to specific questions are set forth as follows, in the order of the questions asked. Pursuant to 16 T.A.C. § 22.144(c)(2)(F), these responses may be treated as if they were filed under oath.

Respectfully submitted,

THOMPSON & KNIGHT LLP

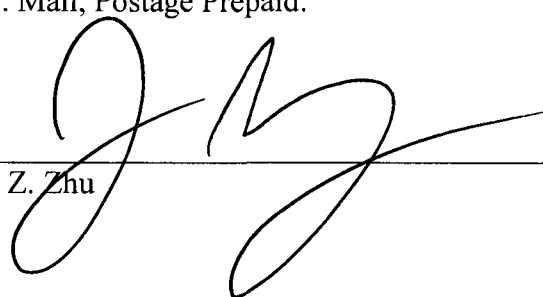


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ATTORNEYS FOR TEXAS INDUSTRIAL
ENERGY CONSUMERS

CERTIFICATE OF SERVICE

I, James Z. Zhu, Attorney for TIEC, hereby certify that a copy of the foregoing document was served on all parties of record in this proceeding on this 31st day of January, 2020 by facsimile, electronic mail and/or first Class, U.S. Mail, Postage Prepaid.



James Z. Zhu

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**TEXAS INDUSTRIAL ENERGY CONSUMERS' RESPONSE TO
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FIRST REQUEST FOR INFORMATION**

SWEPKO-TIEC 1-1: Please refer to page 18, lines 11 through 13, of the direct testimony of Jeffry Pollock. Please provide all bases for the allegation that the EIA High Oil and Gas Technology Case has been the "most accurate" of the EIA scenarios.

RESPONSE:

Please see page 19, lines 11-15 of Mr. Pollock's testimony. Additionally, Mr. Pollock has reviewed the EIA's forecasts under the High Oil and Gas Technology Case as published in its Annual Energy Outlooks for the years 2013 through 2019. His finding was that projected natural gas prices even under the High Oil and Gas Technology case, which is the EIA's lowest case, were usually higher (sometimes significantly) than actual spot gas prices.

Preparer: Jeffry Pollock

Sponsor: Jeffry Pollock

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**TEXAS INDUSTRIAL ENERGY CONSUMERS' RESPONSE TO
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SWEPCO-TIEC 1-2: Over what time period does Mr. Pollock believe that the High Oil and Gas Technology Case has been the “most accurate” of the EIA scenarios?

RESPONSE:

Please see the Response to SWEPCO-TIEC 1-1. Based on this review, Mr. Pollock believes that the High Oil and Gas Technology Case has been the EIA’s most accurate since at least 2013.

Preparer: Jeffry Pollock

Sponsor: Jeffry Pollock

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**TEXAS INDUSTRIAL ENERGY CONSUMERS' RESPONSE TO
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SWEPKO-TIEC 1-3: Does Mr. Pollock believe that the High Oil and Gas Technology will be the "most accurate" of the EIA scenarios for the full 30-year term depicted on his Exhibit JP-1? If so, please provide a complete explanation why. If not, please provide a complete explanation why not.

RESPONSE:

All forecasts have a level of uncertainty, which increases the further out in time the forecast goes. However, based on recent experience, the High Oil and Gas Technology forecast has been the least inaccurate of EIA's cases, including the Reference Case forecasts, which have consistently and significantly overstated actual natural gas prices.

Preparer: Jeffry Pollock

Sponsor: Jeffry Pollock

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**TEXAS INDUSTRIAL ENERGY CONSUMERS' RESPONSE TO
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SWEPCO-TIEC 1-4: Please provide a copy of all third-party natural gas price forecasts published or developed in the last five years that are in Mr. Pollock's or Mr. Griffey's possession, custody, or control, including an identification of the person or organization that developed the forecast and the vintage of the forecast.

RESPONSE:

While he did not use them or rely on them in this case, Mr. Pollock is in possession of third-party natural gas price forecasts from PUCT Docket Nos. 48973 and 49831 developed within the last five years by third-party vendors including CERA, PIRA, and Wood Mackenzie. These third-party gas forecasts are subject to the protective orders in the relevant cases, which prohibit the disclosure or use of the highly sensitive material outside of those cases. TIEC will provide those third-party forecasts if SWEPCO obtains the necessary orders or approvals under the relevant protective orders.

While he did not use them or rely on them in this case, Mr. Griffey is in possession of third-party natural gas prices from PUCT Docket Nos. 48973 and 49831 and LPSC Docket No. U-33950 developed within the last five years by third party vendors including CERA, PIRA, and Wood Mackenzie, as well as by Entergy. These third-party forecasts are subject to the protective orders in the relevant cases, which prohibit the disclosure or use of the highly sensitive material outside of those cases. TIEC will provide those third-party forecasts if SWEPCO obtains the necessary orders or approvals under the relevant protective orders.

While he did not use them or rely on them in this case, Mr. Griffey is also in possession of two natural gas price forecasts that are in the public domain and attached as Exhibit SWEPCO-TIEC 1-4. These forecasts are from Northern Indiana Public Service Company's (NIPSCO) 2018 IRP and from Public Service Company of New Mexico's (PNM) analysis of replacement resources for the San Juan Generating Station. Mr. Griffey is not aware of the precise vintage of either forecast.

Additionally, Mr. Pollock and Mr. Griffey are in possession of the forecasts referenced in their testimony, which were either provided by SWEPCO or publicly available (EIA).

Preparer: Jeffry Pollock; Charles Griffey

Sponsor: Jeffry Pollock; Charles Griffey

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**TEXAS INDUSTRIAL ENERGY CONSUMERS' RESPONSE TO
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SWEPKO-TIEC 1-5: Please refer to page 20, lines 3 through 7 of the direct testimony of Jeffry Pollock and the statement that NYMEX futures contracts are highly liquid in the near term. Please define the terms "highly liquid" and "near term" in this statement.

RESPONSE:

Mr. Pollock is referring to the active trading of NYMEX futures contracts for forward delivery of up to 36 months. For additional information, see Exhibit SWEPKO-TIEC 1-6.

Preparer: Jeffry Pollock

Sponsor: Jeffry Pollock

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SWEPCO-TIEC 1-6: Please refer to page 20, lines 19 through 20, of the direct testimony of Jeffry Pollock and the statement that futures contract prices “represent actual transactions between buyers and sellers who put real money at risk in their day-to-day operations.” How many actual transactions between buyers and sellers are reflected in each year of the “NYMEX Futures 30 day end Jan 7” depicted on Mr. Pollock's Exhibit JP-1?

RESPONSE:

Please see Exhibit SWEPCO-TIEC 1-6 for the number of reported transactions for each year on the NYMEX during the 30-day period ending January 7. Please also see the Response to SWEPCO-TIEC 1-7 for additional information on how NYMEX prices reflect data from transactions outside the exchange.

Preparer: Jeffry Pollock; Charles Griffey

Sponsor: Jeffry Pollock; Charles Griffey

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**TEXAS INDUSTRIAL ENERGY CONSUMERS' RESPONSE TO
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SWEPCO-TIEC 1-7: Please explain how NYMEX developed the futures contract prices for time periods in which there were no actual contracts between buyers and sellers for the NYMEX futures prices depicted on Mr. Pollock's Exhibit JP-1.

RESPONSE:

Please see Exhibit SWEPCO-TIEC 1-7, which contains CME Group's (which owns NYMEX) explanation of how it develops NYMEX futures contract prices for periods with low volume.

Additionally, Mr. Griffey understands that there is a Settlements Price Committee of the NYMEX (and subcommittees for each traded commodity) that meets daily to develop settlement prices for each contract using a proprietary approach. His understanding is that the committee uses actual trades, bids and offers, including data from outside the exchange, to develop the settlement prices for all months including for the low volume and no volume months on the exchange. The resulting settlement point prices are widely relied upon and are used to mark-to-market outstanding contracts.

Preparer: Jeffry Pollock; Charles Griffey

Sponsor: Jeffry Pollock; Charles Griffey

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SWEPCO-TIEC 1-8: Please provide Mr. Pollock's methodology for developing and full justification of the continuation of NYMEX futures values from 2031 through 2048 on his Exhibit JP-1.

RESPONSE:

Mr. Pollock used extrapolation to project natural gas prices from 2031 through 2048 based on the average escalation rate of NYMEX prices for the period 2026 through 2030, which are the last five years that NYMEX futures prices are available.

Preparer: Jeffry Pollock

Sponsor: Jeffry Pollock

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SWEPCO-TIEC 1-9: Please identify all electric utilities known to Mr. Pollock or Mr. Griffey that use 30-year trended NYMEX futures prices, such as developed by Mr. Pollock for his Exhibit JP-1, for system planning purposes. In each instance known to Mr. Pollock or Mr. Griffey, please provide evidence of such use.

RESPONSE

Mr. Pollock and Mr. Griffey are aware that SPS uses long-term trended NYMEX futures prices as an input in their gas price forecasts for system planning purposes. Mr. Pollock described how SPS uses NYMEX futures in his direct testimony filed in Docket No. 47461 (pages 12-13).

In addition to SPS, Mr. Griffey is aware that Reliant Energy/HL&P used long-term NYMEX trended futures prices for system planning purposes during the time in which he was employed there. Additionally, Mr. Griffey was part of a resource planning committee for the Electric Power Research Institute (EPRI) that developed system planning tools that utilized long-term trended NYMEX futures prices. Other utilities that participated in that resource planning committee included Texas Utilities, the Tennessee Valley Authority (TVA), and SCANA.

Preparer: Jeffry Pollock; Charles Griffey

Sponsor: Jeffry Pollock; Charles Griffey

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SWEPCO-TIEC 1-10: Please identify all utilities known to Mr. Pollock or Mr. Griffey that use NYMEX futures in their system planning forecasts in any fashion and an explanation of how each identified utility uses them in its forecasts.

RESPONSE

See the response to SWEPCO-TIEC 1-9 above. Additionally, Mr. Pollock is aware that Entergy uses NYMEX futures in their system planning forecasts for at least the near term. In its CCN application for the Montgomery County Power Station, Entergy's gas price forecast was described as follows:

Entergy's gas price forecast methodology is based on the use of the NYMEX futures for the first year of the forecast period and use of the average of fundamental-based independent third-party consultant forecasts for years 3-20, followed by escalation based on constant real dollars. For years 2-3, Entergy interpolates between the NYMEX and fundamental forecast. This methodology is consistent with the methodology used by other utilities for planning and evaluation purposes and also relies heavily on third-party independent forecasts, which eliminates any forecast bias. (Application of Entergy Texas, Inc. For Approval of a Certificate of Convenience and Necessity Regarding Construction of Montgomery County Power Station, Docket No. 46416, Testimony of Wayne J. Oliver As Independent Monitor at 46.)

Preparer: Jeffry Pollock; Charles Griffey

Sponsor: Jeffry Pollock; Charles Griffey

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**TEXAS INDUSTRIAL ENERGY CONSUMERS' RESPONSE TO
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SWEPCO-TIEC 1-11: Pursuant to Commission Procedural Rule 16 TAC § 22.103(b), please provide a list of TIEC members participating in this docket.

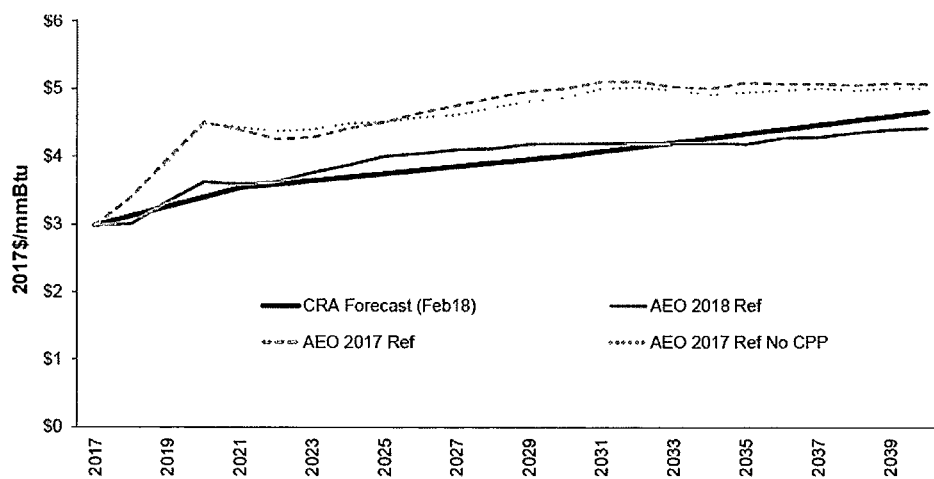
RESPONSE

Please see TIEC's List of Participating Members filed on the PUC Interchange on January 31, 2020.

Preparer: Counsel

NIPSO 2018 IRP p 115.

Figure 8-8: Base Case Henry Hub Natural Gas Price Forecast



Scenario	Company	Year	Fuel	Average Cost (\$/FUnit)
SJ Continues-SJ Continues	PNM	2021	Natural Gas	2.36
SJ Continues-SJ Continues	PNM	2022	Natural Gas	2.39
SJ Continues-SJ Continues	PNM	2023	Natural Gas	2.55
SJ Continues-SJ Continues	PNM	2024	Natural Gas	2.70
SJ Continues-SJ Continues	PNM	2025	Natural Gas	2.82
SJ Continues-SJ Continues	PNM	2026	Natural Gas	2.97
SJ Continues-SJ Continues	PNM	2027	Natural Gas	3.11
SJ Continues-SJ Continues	PNM	2028	Natural Gas	3.29
SJ Continues-SJ Continues	PNM	2029	Natural Gas	3.30
SJ Continues-SJ Continues	PNM	2030	Natural Gas	3.28
SJ Continues-SJ Continues	PNM	2031	Natural Gas	3.18
SJ Continues-SJ Continues	PNM	2032	Natural Gas	3.25
SJ Continues-SJ Continues	PNM	2033	Natural Gas	3.23
SJ Continues-SJ Continues	PNM	2034	Natural Gas	3.45
SJ Continues-SJ Continues	PNM	2035	Natural Gas	3.79
SJ Continues-SJ Continues	PNM	2036	Natural Gas	3.77
SJ Continues-SJ Continues	PNM	2037	Natural Gas	3.97
SJ Continues-SJ Continues	PNM	2038	Natural Gas	4.33

San Juan Gas	ATC	1/1/2019	3.14
San Juan Gas	ATC	2/1/2019	2.55
San Juan Gas	ATC	3/1/2019	2.28
San Juan Gas	ATC	4/1/2019	1.26
San Juan Gas	ATC	5/1/2019	1.47
San Juan Gas	ATC	6/1/2019	1.72
San Juan Gas	ATC	7/1/2019	2.16
San Juan Gas	ATC	8/1/2019	2.19
San Juan Gas	ATC	9/1/2019	2.09
San Juan Gas	ATC	10/1/2019	1.97
San Juan Gas	ATC	11/1/2019	2.26
San Juan Gas	ATC	12/1/2019	2.63
San Juan Gas	ATC	1/1/2020	2.69
San Juan Gas	ATC	2/1/2020	2.59
San Juan Gas	ATC	3/1/2020	2.33
San Juan Gas	ATC	4/1/2020	1.84
San Juan Gas	ATC	5/1/2020	1.8
San Juan Gas	ATC	6/1/2020	1.85
San Juan Gas	ATC	7/1/2020	2.33
San Juan Gas	ATC	8/1/2020	2.26
San Juan Gas	ATC	9/1/2020	2.21
San Juan Gas	ATC	10/1/2020	2.04
San Juan Gas	ATC	11/1/2020	2.23
San Juan Gas	ATC	12/1/2020	2.52
San Juan Gas	ATC	1/1/2021	2.61
San Juan Gas	ATC	2/1/2021	2.52
San Juan Gas	ATC	3/1/2021	2.38
San Juan Gas	ATC	4/1/2021	2.03
San Juan Gas	ATC	5/1/2021	1.99
San Juan Gas	ATC	6/1/2021	2.03
San Juan Gas	ATC	7/1/2021	2.15
San Juan Gas	ATC	8/1/2021	2.17
San Juan Gas	ATC	9/1/2021	2.15
San Juan Gas	ATC	10/1/2021	2.11
San Juan Gas	ATC	11/1/2021	2.28
San Juan Gas	ATC	12/1/2021	2.54
San Juan Gas	ATC	1/1/2022	2.63
San Juan Gas	ATC	2/1/2022	2.54
San Juan Gas	ATC	3/1/2022	2.38
San Juan Gas	ATC	4/1/2022	2.04
San Juan Gas	ATC	5/1/2022	2
San Juan Gas	ATC	6/1/2022	2.04
San Juan Gas	ATC	7/1/2022	2.16
San Juan Gas	ATC	8/1/2022	2.19
San Juan Gas	ATC	9/1/2022	2.16
San Juan Gas	ATC	10/1/2022	2.12

San Juan Gas	ATC	11/1/2022	2.28
San Juan Gas	ATC	12/1/2022	2.54
San Juan Gas	ATC	1/1/2023	2.63
San Juan Gas	ATC	2/1/2023	2.55
San Juan Gas	ATC	3/1/2023	2.4
San Juan Gas	ATC	4/1/2023	2.1
San Juan Gas	ATC	5/1/2023	2.08
San Juan Gas	ATC	6/1/2023	2.13
San Juan Gas	ATC	7/1/2023	2.25
San Juan Gas	ATC	8/1/2023	2.29
San Juan Gas	ATC	9/1/2023	2.27
San Juan Gas	ATC	10/1/2023	2.23
San Juan Gas	ATC	11/1/2023	2.38
San Juan Gas	ATC	12/1/2023	2.63
San Juan Gas	ATC	1/1/2024	2.73
San Juan Gas	ATC	2/1/2024	2.65
San Juan Gas	ATC	3/1/2024	2.53
San Juan Gas	ATC	4/1/2024	2.21
San Juan Gas	ATC	5/1/2024	2.18
San Juan Gas	ATC	6/1/2024	2.23
San Juan Gas	ATC	7/1/2024	2.34
San Juan Gas	ATC	8/1/2024	2.37
San Juan Gas	ATC	9/1/2024	2.35
San Juan Gas	ATC	10/1/2024	2.31
San Juan Gas	ATC	11/1/2024	2.47
San Juan Gas	ATC	12/1/2024	2.71
San Juan Gas	ATC	1/1/2025	2.8
San Juan Gas	ATC	2/1/2025	2.73
San Juan Gas	ATC	3/1/2025	2.63
San Juan Gas	ATC	4/1/2025	2.32
San Juan Gas	ATC	5/1/2025	2.29
San Juan Gas	ATC	6/1/2025	2.33
San Juan Gas	ATC	7/1/2025	2.45
San Juan Gas	ATC	8/1/2025	2.48
San Juan Gas	ATC	9/1/2025	2.46
San Juan Gas	ATC	10/1/2025	2.42
San Juan Gas	ATC	11/1/2025	2.6
San Juan Gas	ATC	12/1/2025	2.84
San Juan Gas	ATC	1/1/2026	2.94
San Juan Gas	ATC	2/1/2026	2.87
San Juan Gas	ATC	3/1/2026	2.77
San Juan Gas	ATC	4/1/2026	2.45
San Juan Gas	ATC	5/1/2026	2.43
San Juan Gas	ATC	6/1/2026	2.47
San Juan Gas	ATC	7/1/2026	2.58
San Juan Gas	ATC	8/1/2026	2.62
San Juan Gas	ATC	9/1/2026	2.6

San Juan Gas	ATC	10/1/2026	2.56
San Juan Gas	ATC	11/1/2026	2.73
San Juan Gas	ATC	12/1/2026	2.97
San Juan Gas	ATC	1/1/2027	3.06
San Juan Gas	ATC	2/1/2027	2.99
San Juan Gas	ATC	3/1/2027	2.89
San Juan Gas	ATC	4/1/2027	2.57
San Juan Gas	ATC	5/1/2027	2.54
San Juan Gas	ATC	6/1/2027	2.58
San Juan Gas	ATC	7/1/2027	2.69
San Juan Gas	ATC	8/1/2027	2.73
San Juan Gas	ATC	9/1/2027	2.71
San Juan Gas	ATC	10/1/2027	2.67
San Juan Gas	ATC	11/1/2027	2.84
San Juan Gas	ATC	12/1/2027	3.07
San Juan Gas	ATC	1/1/2028	3.17
San Juan Gas	ATC	2/1/2028	3.1
San Juan Gas	ATC	3/1/2028	2.99
San Juan Gas	ATC	4/1/2028	2.67
San Juan Gas	ATC	5/1/2028	2.64
San Juan Gas	ATC	6/1/2028	2.69
San Juan Gas	ATC	7/1/2028	2.81
San Juan Gas	ATC	8/1/2028	2.87
San Juan Gas	ATC	9/1/2028	2.86
San Juan Gas	ATC	10/1/2028	2.84
San Juan Gas	ATC	11/1/2028	3
San Juan Gas	ATC	12/1/2028	3.23
San Juan Gas	ATC	1/1/2029	3.54
San Juan Gas	ATC	2/1/2029	3.52
San Juan Gas	ATC	3/1/2029	2.72
San Juan Gas	ATC	4/1/2029	2.52
San Juan Gas	ATC	5/1/2029	2.54
San Juan Gas	ATC	6/1/2029	2.66
San Juan Gas	ATC	7/1/2029	2.73
San Juan Gas	ATC	8/1/2029	2.75
San Juan Gas	ATC	9/1/2029	3.05
San Juan Gas	ATC	10/1/2029	3.12
San Juan Gas	ATC	11/1/2029	3.23
San Juan Gas	ATC	12/1/2029	3.36
San Juan Gas	ATC	1/1/2030	3.54
San Juan Gas	ATC	2/1/2030	3.55
San Juan Gas	ATC	3/1/2030	2.76
San Juan Gas	ATC	4/1/2030	2.58
San Juan Gas	ATC	5/1/2030	2.58
San Juan Gas	ATC	6/1/2030	2.72
San Juan Gas	ATC	7/1/2030	2.8
San Juan Gas	ATC	8/1/2030	2.82

San Juan Gas	ATC	9/1/2030	3.12
San Juan Gas	ATC	10/1/2030	3.18
San Juan Gas	ATC	11/1/2030	3.29
San Juan Gas	ATC	12/1/2030	3.43
San Juan Gas	ATC	1/1/2031	3.46
San Juan Gas	ATC	2/1/2031	3.46
San Juan Gas	ATC	3/1/2031	2.68
San Juan Gas	ATC	4/1/2031	2.5
San Juan Gas	ATC	5/1/2031	2.51
San Juan Gas	ATC	6/1/2031	2.63
San Juan Gas	ATC	7/1/2031	2.72
San Juan Gas	ATC	8/1/2031	2.74
San Juan Gas	ATC	9/1/2031	3.01
San Juan Gas	ATC	10/1/2031	3.07
San Juan Gas	ATC	11/1/2031	3.16
San Juan Gas	ATC	12/1/2031	3.3
San Juan Gas	ATC	1/1/2032	3.34
San Juan Gas	ATC	2/1/2032	3.24
San Juan Gas	ATC	3/1/2032	2.68
San Juan Gas	ATC	4/1/2032	2.5
San Juan Gas	ATC	5/1/2032	2.51
San Juan Gas	ATC	6/1/2032	2.64
San Juan Gas	ATC	7/1/2032	2.72
San Juan Gas	ATC	8/1/2032	2.76
San Juan Gas	ATC	9/1/2032	2.99
San Juan Gas	ATC	10/1/2032	3.04
San Juan Gas	ATC	11/1/2032	3.13
San Juan Gas	ATC	12/1/2032	3.27
San Juan Gas	ATC	1/1/2033	3.5
San Juan Gas	ATC	2/1/2033	3.5
San Juan Gas	ATC	3/1/2033	2.76
San Juan Gas	ATC	4/1/2033	2.57
San Juan Gas	ATC	5/1/2033	2.58
San Juan Gas	ATC	6/1/2033	2.71
San Juan Gas	ATC	7/1/2033	2.8
San Juan Gas	ATC	8/1/2033	2.82
San Juan Gas	ATC	9/1/2033	3.08
San Juan Gas	ATC	10/1/2033	3.12
San Juan Gas	ATC	11/1/2033	3.22
San Juan Gas	ATC	12/1/2033	3.36
San Juan Gas	ATC	1/1/2034	3.7
San Juan Gas	ATC	2/1/2034	3.68
San Juan Gas	ATC	3/1/2034	2.93
San Juan Gas	ATC	4/1/2034	2.75
San Juan Gas	ATC	5/1/2034	2.75
San Juan Gas	ATC	6/1/2034	2.9
San Juan Gas	ATC	7/1/2034	3.02

San Juan Gas	ATC	8/1/2034	3.04
San Juan Gas	ATC	9/1/2034	3.32
San Juan Gas	ATC	10/1/2034	3.36
San Juan Gas	ATC	11/1/2034	3.45
San Juan Gas	ATC	12/1/2034	3.6
San Juan Gas	ATC	1/1/2035	3.93
San Juan Gas	ATC	2/1/2035	3.92
San Juan Gas	ATC	3/1/2035	3.1
San Juan Gas	ATC	4/1/2035	2.9
San Juan Gas	ATC	5/1/2035	2.91
San Juan Gas	ATC	6/1/2035	3.08
San Juan Gas	ATC	7/1/2035	3.22
San Juan Gas	ATC	8/1/2035	3.25
San Juan Gas	ATC	9/1/2035	3.47
San Juan Gas	ATC	10/1/2035	3.51
San Juan Gas	ATC	11/1/2035	3.62
San Juan Gas	ATC	12/1/2035	3.77
San Juan Gas	ATC	1/1/2036	3.91
San Juan Gas	ATC	2/1/2036	3.76
San Juan Gas	ATC	3/1/2036	3.18
San Juan Gas	ATC	4/1/2036	2.98
San Juan Gas	ATC	5/1/2036	2.99
San Juan Gas	ATC	6/1/2036	3.16
San Juan Gas	ATC	7/1/2036	3.29
San Juan Gas	ATC	8/1/2036	3.33
San Juan Gas	ATC	9/1/2036	3.59
San Juan Gas	ATC	10/1/2036	3.63
San Juan Gas	ATC	11/1/2036	3.74
San Juan Gas	ATC	12/1/2036	3.9
San Juan Gas	ATC	1/1/2037	4.34
San Juan Gas	ATC	2/1/2037	4.31
San Juan Gas	ATC	3/1/2037	3.47
San Juan Gas	ATC	4/1/2037	3.24
San Juan Gas	ATC	5/1/2037	3.26
San Juan Gas	ATC	6/1/2037	3.44
San Juan Gas	ATC	7/1/2037	3.58
San Juan Gas	ATC	8/1/2037	3.61
San Juan Gas	ATC	9/1/2037	3.84
San Juan Gas	ATC	10/1/2037	3.89
San Juan Gas	ATC	11/1/2037	4
San Juan Gas	ATC	12/1/2037	4.18
San Juan Gas	ATC	1/1/2038	4.5
San Juan Gas	ATC	2/1/2038	4.48
San Juan Gas	ATC	3/1/2038	3.6
San Juan Gas	ATC	4/1/2038	3.36
San Juan Gas	ATC	5/1/2038	3.36
San Juan Gas	ATC	6/1/2038	3.56

San Juan Gas	ATC	7/1/2038	3.69
San Juan Gas	ATC	8/1/2038	3.73
San Juan Gas	ATC	9/1/2038	3.97
San Juan Gas	ATC	10/1/2038	4.01
San Juan Gas	ATC	11/1/2038	4.14
San Juan Gas	ATC	12/1/2038	4.33

**Total Volume of NYMEX Natural Gas Futures
Traded at the Henry Hub
For 30 Days Ending January 7, 2020**

<u>Line</u>	<u>Year</u>	<u>Volume</u>
		(1)
1	2021	298,402
2	2022	8,595
3	2023	975
4	2024	401
5	2025	0
6	2026	4

Source: S&P Global Market Intelligence

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Source	NYMEX
Hub	Henry Hub
Product/Indicator	Natural Gas Futures
Trade Date Start	11/1/2019
Trade Date End	1/7/2020

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12/1/2021 12/31/2021	1/1/2022 1/1/2022	2/1/2022 2/28/2022	3/1/2022 3/31/2022	4/1/2022 4/30/2022	5/1/2022 5/31/2022	6/1/2022 6/30/2022	7/1/2022 7/31/2022	8/1/2022 8/31/2022	9/1/2022 9/30/2022	10/1/2022 10/31/2022	11/1/2022 11/30/2022	12/1/2022 12/31/2022	1/1/2023 1/31/2023	2/1/2023 2/28/2023	3/1/2023 3/31/2023	4/1/2023 4/30/2023	5/1/2023 5/31/2023	6/1/2023 6/30/2023	7/1/2023 7/31/2023	8/1/2023 8/31/2023	9/1/2023 9/30/2023	10/1/2023 10/31/2023	11/1/2023 11/30/2023	12/1/2023 12/31/2023	1/1/2024 1/31/2024	2/1/2024 2/28/2024	3/1/2024 3/31/2024	4/1/2024 4/30/2024	5/1/2024 5/31/2024	6/1/2024 6/30/2024	7/1/2024 7/31/2024	8/1/2024 8/31/2024	9/1/2024 9/30/2024
Dec-21 SNL	Jan-22 SNL	Feb-22 SNL	Mar-22 SNL	Apr-22 SNL	May-22 SNL	Jun-22 SNL	Jul-22 SNL	Aug-22 SNL	Sep-22 SNL	Oct-22 SNL	Nov-22 SNL	Dec-22 SNL	Jan-23 SNL	Feb-23 SNL	Mar-23 SNL	Apr-23 SNL	May-23 SNL	Jun-23 SNL	Jul-23 SNL	Aug-23 SNL	Sep-23 SNL	Oct-23 SNL	Nov-23 SNL	Dec-23 SNL	Jan-24 SNL	Feb-24 SNL	Mar-24 SNL	Apr-24 SNL	May-24 SNL	Jun-24 SNL	Jul-24 SNL	Aug-24 SNL	Sep-24 SNL
14	13	6	-	6	-	-	-	-	-	-	-	-	10	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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32	37	22	7	-	-	-	-	-	-	8	8	14	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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56	123	22	311	210	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
28	30	-	-	22	-	23	-	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
52	113	45	40	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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81	10	-	23	21	7	-	-	-	-	1	-	-	21	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
55	16	-	11	16	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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11	1	34	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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126	17	90	94	24	11	11	4	9	9	10	4	22	17	15	11	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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284	91	221	135	19	40	40	-	-	-	1	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
87	51	31	19	19	9	9	9	4	8	7	8	7	7	5	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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34	99	39	109	118	-	-	-	-	-	16	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
16	977	106	28	12	3	2	2	1	-	1	1	1	38	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
57	22	10	-	1	-	22	22	-	-	1	-	2	-	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
84	-	-	-	6	6	-	-	-	3	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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64	145	44	29	-	1	-	2	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
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13	31	-	16	-	352	1	-	1	-	6	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-
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33	38	-	1	6	1	1	-	-	-	-	-	-	1	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
80	261	1	26	27	5	1	2	-	2	-	-	1	2	2	2	-	-	-	-	-	-	-	-	200	-	-	-	-	-	-	-	-	-
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50	43	6	25	135	6	2	-	-	-	112	-	-	5	1	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
38	27	7	38	36	1	-	-	-	-	5	-	-	86	1	1	21	-	-	-	-	-	-	21	-	-	-	-	-	-	-	-	-	-
12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12									

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Natural Gas

- Natural Gas (NG) Futures Daily Settlement Procedure
 - Normal Daily Settlement Procedure
 - Active Month
 - All Remaining Months
 - Spot (expiring) Month Settlements on the Last Three Trading Days
- Henry Hub Natural Gas Look-A-Likes
 - Henry Hub Natural Gas Daily Settlement Procedure
 - Henry Hub Natural Gas Final Settlement Procedure (HH)
 - Additional Details
 - NYMEX Henry Hub Natural Gas Look-Alike Penultimate Financial Futures Final Settlement Procedure (HP)
 - Additional Details
 - NYMEX Henry Hub Natural Gas Last Day Financial Futures Final Settlement Procedure (NN/NNE)
 - Additional Details
 - NYMEX Henry Hub Natural Gas Penultimate Financial Futures Final Settlement Procedure (NPG)
 - Additional Details
- NYMEX E-Mini Natural Gas Futures
 - Normal Daily Settlement
 - Final Settlement
 - Additional Details

Natural Gas (NG) Futures Daily Settlement Procedure

Normal Daily Settlement Procedure

NYMEX Natural Gas (NG) futures are settled by CME Group staff based on trading activity on CME Globex during the settlement period. The settlement period is defined as: 14:28:00 to 14:30:00 ET

Active Month

The active month is the nearest of the contract months listed. The active month becomes a non-active month effective two business days prior to the spot month expiration. For example; if the spot month expires on a Friday the next listed contract will be considered the Active Month on the Wednesday prior to the spot month expiration. The procedure changes for the spot month's last three days of trading. Please see the end of this document for further details.

Tier 1: If a trade(s) occurs on Globex between 14:28:00 and 14:30:00 ET, the active month settles to the volume-weighted average price (VWAP), rounded to the nearest tradable tick.

Tier 2: If there is no VWAP, then the last trade price is checked against the 14:30 ET bid/ask.

1. If the last trade price is outside of the bid/ask spread, then the contract settles to the nearest bid or ask price.
2. If the last trade price is within the bid/ask spread or if a bid/ask is not available, then the contract settles to the last trade price.

Tier 3: If there is no last trade price available, then the prior settle is checked against the current bid/ask.

1. If the prior settle is outside of the bid/ask spread, then the contract settles to the nearest bid or ask price.
2. If the prior settle is within the bid/ask spread or if a bid/ask is not available, then the contract settles to the prior settlement price.

All Remaining Months

All Remaining Months other than the designated active month will settle per the following guidelines:

Tier 1: All Remaining Months other than the designated active month will settle based upon the VWAP of accumulated calendar spread transactions between 14:28:00 to 14:30:00 ET, the calendar spread settlement period. Volume in each spread will be divided by the number of months separating leg 1 and leg 2 of the spread and will be used in conjunction with settlements from any months where a settlement price has been determined to form a VWAP in the contract month to be settled. i.e. a G9-H9 spread would be divided by 1. a F9-H9 spread would be divided by 2 and a H8-H9 spread would be divided by 12. For examples please click [here](#).

Tier 2: In the absence of relevant calendar spread trades, bid/asks in those calendar spreads will be used in conjunction with settlements from any months where a settlement price has been determined to form an implied market in the contract month to be settled. These implied markets will be used to derive the best possible bid and the best possible ask. Provided the implied bid/ask spread is consistent with reasonability thresholds as determined by the Global Command Center (GCC), the contract will settle within the implied bid/ask spread. Note- Efforts will be made to honor relevant resting bids and asks, but VWAP trades will take precedence.

Tier 3: In the absence of an implied bid/ask that meets reasonability thresholds, the net change of the previous contract month will be applied to determine the contract month's settlement price.

Spot (expiring) Month Settlements on the Last Three Trading Days

On the two days before the spot month contract expires, the spot and second months settle to the VWAP of the outright CME Globex trades executed between 14:28:00 and 14:30:00 ET, the settlement period, rounded to the nearest tradable tick. The remainder of the curve will settle based on the same procedures mentioned above.

On the day of expiration, the spot (expiring) month will settle based on the VWAP of the outright CME Globex trades executed between 14:00:00 and 14:30:00 ET, and the second month will settle based on the VWAP of the outright CME Globex trades executed between 14:28:00 and 14:30:00 ET. The remainder of the curve will settle based on the same procedures mentioned above.

In the absence of outright or spread trades during this period, the settlement price will be the best bid or best ask in the expiring contract at 14:30:00 ET, whichever is closer to the last trade price. If there is not a bid/ask pair in the expiring contract at that time, the settlement price will be the best bid or ask implied by the bid/ask in the spread between the front (expiring) and second month contracts at 14:30:00 ET, whichever is closer to the last outright trade price in the front (expiring) contract.

Only bids and asks that remain active through expiration at 14:30:00 ET will be considered in these calculations. In the event there is insufficient activity to make the aforementioned calculations, staff may rely on earlier data or other available market information to determine an appropriate settlement price.

Henry Hub Natural Gas Look-A-Likes

Henry Hub Natural Gas Daily Settlement Procedure

The settlements in the Henry Hub Natural Gas Look-Alike Last-Day Financial (HH), Henry Hub Natural Gas Look-Alike Penultimate Financial (HP), the Henry Hub Natural Gas Swap (NN), and the Henry Hub Natural Gas Penultimate Financial (NPG) futures contracts are equal to the settlement of the corresponding Natural Gas (NG) contract.

Henry Hub Natural Gas Final Settlement Procedure (HH)

The final settlement in the expiring Henry Hub Natural Gas Look-Alike Last Day Financial (HH) futures contract is derived directly from the final settlement in the regular NG futures contract. This procedure can be found below.

Additional Details

Henry Hub Natural Gas Look-Alike Last Day Financial (HH) futures are cash settled upon expiration. For additional details, please see the NYMEX Rulebook (Chapter 823)

<http://www.cmegroup.com/rulebook/NYMEX/8/823.pdf>

NYMEX Henry Hub Natural Gas Look-Alike Penultimate Financial Futures Final Settlement Procedure (HP)

CME Group staff determines the settlement of the expiring Henry Hub Natural Gas Look-Alike Penultimate Financial (HP) futures contract by following the regular daily settlement procedure. This procedure can be found below.

Additional Details

Henry Hub Natural Gas Penultimate Financial (HP) futures are cash settled upon expiration. For additional details, please see the NYMEX Rulebook (Chapter 824)

<http://www.cmegroup.com/rulebook/NYMEX/8/824.pdf>

NYMEX Henry Hub Natural Gas Last Day Financial Futures Final Settlement Procedure (NN/NNE)

The final settlement in the expiring Henry Hub Natural Gas Last Day Financial (NN/NNE) futures contract is derived directly from the final settlement in the regular NG futures contract. This procedure can be found below.

Additional Details

Henry Hub Natural Gas Last Day Financial (NN) futures are cash settled upon expiration. For additional details, please see the NYMEX Rulebook (Chapter 508)

<http://www.cmegroup.com/rulebook/NYMEX/5/508.pdf>

NYMEX Henry Hub Natural Gas Penultimate Financial Futures Final Settlement Procedure (NPG)

CME Group staff determines the settlement of the expiring Henry Hub Natural Gas Penultimate Financial (NPG) futures contract by following the regular daily settlement procedure. This procedure can be found below.

Additional Details

Henry Hub Natural Gas Penultimate Financial (NPG) futures are cash settled upon expiration. For additional details, please see the NYMEX Rulebook (Chapter 529)

<http://www.cmegroup.com/rulebook/NYMEX/5/508.pdf>

NYMEX E-Mini Natural Gas Futures**Normal Daily Settlement**

The settlements in the E-Mini Natural Gas (QG) futures contracts are derived directly from the settlements of the regular sized Natural Gas (NG) contracts, rounded to the nearest tradable tick.

Example

If the NGU2 settles 3.052, then the value of the QGU2 would settle 3.050.

Final Settlement

CME Group staff determines the settlement of the expiring E-Mini Natural Gas (QG) contract by following the regular daily settlement procedure.

Additional Details

E-Mini Natural Gas (QG) futures are cash settled upon expiration. For additional details, please see the NYMEX Rulebook (Rule 402.07).

If you have any questions, please call the CME Global Command Center.

Note: In the event the aforementioned calculations described in this advisory cannot be made or if CME Group staff, in its sole discretion, determines that anomalous activity yields results that are not representative of the fair value of the contract, the staff may determine an alternative settlement price.

Email (optional)

How was your Client
Systems Wiki experience?
Why?

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