Energy Survey

Tenth District Energy Activity Declined Further

by: Chad Wilkerson and Chase Farha

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Second quarter energy survey results revealed that Tenth District energy activity declined further and is expected to continue to slow. Firms reported that oil prices needed to be on average $63 per barrel for drilling to be profitable, and $86 per barrel for a substantial increase in drilling to occur. Similarly, natural gas prices needed to be $3.49 per million Btu for drilling to be profitable on average, and $4.67 per million Btu for drilling to increase substantially.

Summary of Quarterly Indicators

Tenth District energy activity continued to decline in the second quarter of 2023, as indicated by firms contacted between June 15th, 2023, and June 30th, 2023 (Tables 1 & 2). The drilling and business activity index decreased from -13 to -19 (Chart 1). The number of employees and employee hours indexes increased, as well as access to credit, while all other indexes decreased from previous readings. Wages and benefits cooled but remained expansionary.

All year-over-year indexes decreased, except the number of employees which increased moderately and access to credit which remained steady. Drilling/business activity, supplier delivery time, and total profits crossed into negative territory on a year-over-year basis, while the total revenues index declined further from -10 to -48. The number of employees and employee hours indexes remained positive.

Expectations for future activity decreased again in Q2 2023. The future drilling/business activity index fell from -13 to -22, while firms expect declines in revenues and profits to moderate in six months. Accordingly, price expectations for oil and gas picked up in the second quarter.

Summary of Special Questions

Firms were asked what oil and natural gas prices were needed on average for drilling to be profitable across the fields in which they are active. The average oil price needed was $63 per barrel (Chart 2), while the average natural gas price needed was $3.49 per million Btu (Chart 3). Firms were also asked what prices were needed for a substantial increase in drilling to occur across the fields in which they are active. The average oil price needed was $86 per barrel (Chart 2), and the average natural gas price needed was $4.67 per million Btu (Chart 3).

Chart 2. Special Question - What price is currently needed for a drilling to be profitable and for a substantial increase in drilling to occur for oil? What do you expect WTI prices to be in six months, one year, two years, and five years?

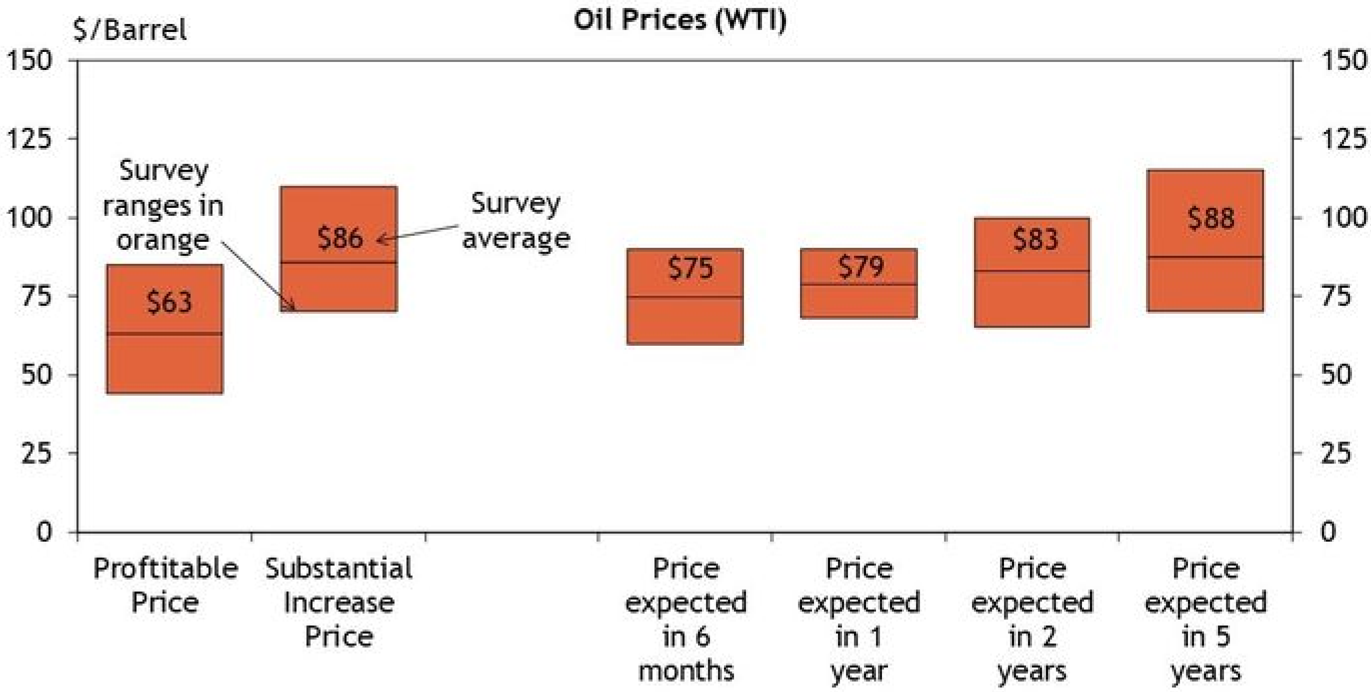
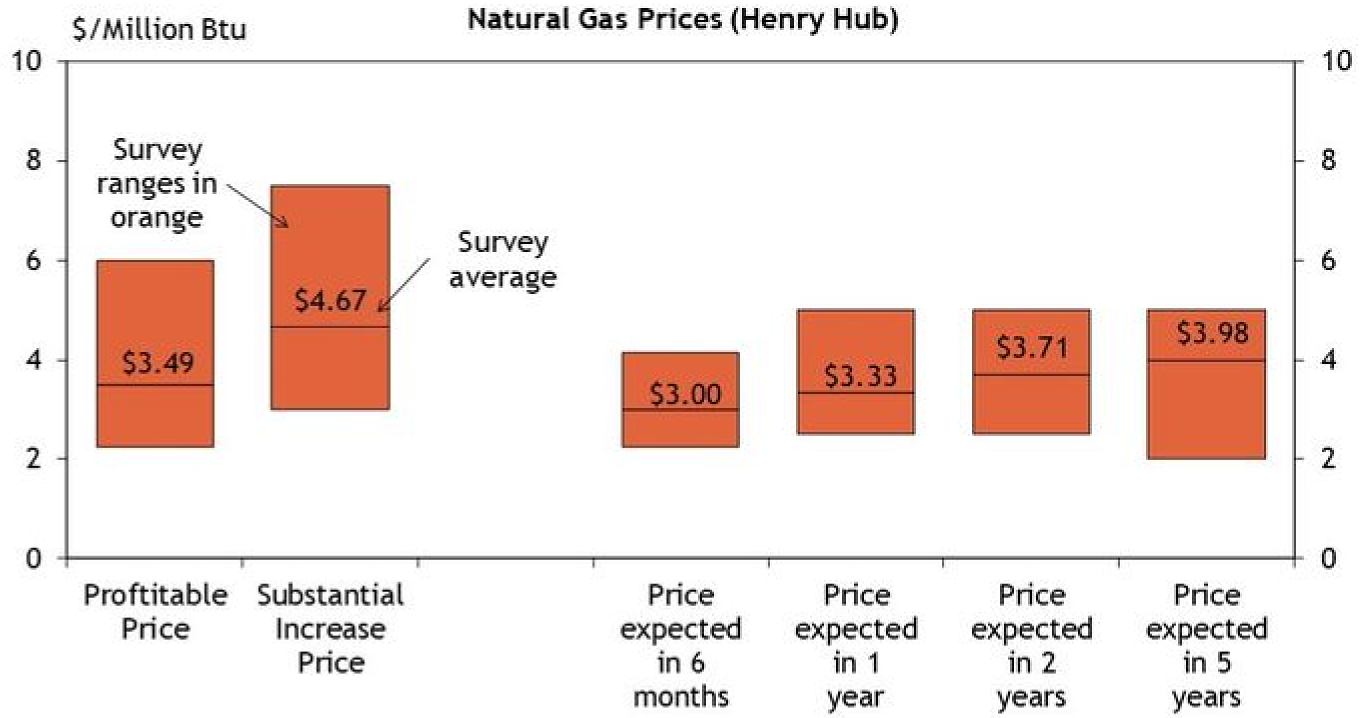


Chart 3. Special Question - What price is currently needed for a drilling to be profitable and for a substantial increase in drilling to occur for natural gas? What do you expect Henry Hub prices to be in six months, one year, two years, and five years?



Firms reported what they expected oil and natural gas prices to be in six months, one year, two years, and five years. The average expected WTI prices were $75, $79, $83, and $88 per barrel, respectively. The average expected Henry Hub natural gas prices were $3.00, $3.33, $3.71, and $3.98 per million Btu, respectively.

Contacts were also asked how tighter credit conditions since February 2023 have affected their firms and will affect their business plans in the future (Chart 4). 66% of firms reported that the tighter conditions have had no negative impact, 28% reported they have had a slight impact, and 6% reported a significant impact. Additionally, 52% of firms reported that tighter credit conditions will have no negative impact on their business plans, while 36% reported they will have a slight impact and 12% said they would have a significant impact.

District energy firms were also asked how global consumption has compared so far this year with their expectations before China announced its reopening in December 2022 (Chart 5). While no contacts reported that global oil consumption has significantly overperformed expectations, 7% said it slightly overperformed expectations, 33% reported it met expectations, 53% reported it slightly overperformed, and 7% reported significant underperformance.

Table 1
Summary of Tenth District Energy Conditions, Quarter 2, 2023

	Quarter 2 vs. Quarter 1 (percent)*				Quarter 2 vs. Year Ago (percent)*				Expected in Six Months (percent)*			
Energy Company Indicators	Increase	No Change	Decrease	Diff Index^	Increase	No Change	Decrease	Diff Index^	Increase	No Change	Decrease	Diff Index^
Drilling/Business Activity	13	56	31	-19	22	41	38	-16	9	59	31	-22
Total Revenues	9	39	52	-42	15	21	64	-48	27	48	24	3
Capital Expenditures					36	27	36	0	18	55	27	-9
Supplier Delivery Time	0	79	21	-21	6	42	52	-45	0	58	42	-42
Total Profits	12	36	52	-39	15	21	64	-48	27	42	30	-3
Number of Employees	36	55	9	27	52	36	12	39	24	64	12	12
Employee Hours	24	70	6	18	30	61	9	21	12	79	9	3
Wages and Benefits	33	61	6	27	67	24	9	58	33	58	9	24
Access to Credit	15	73	12	3	21	64	15	6	15	73	12	3
Expected Oil Prices									52	39	10	42
Expected Natural Gas Prices									59	34	6	53
Expected Natural Gas Liquids Prices									44	44	13	31

*Percentage may not add to 100 due to rounding.
^Diffusion Index. The diffusion index is calculated as the percentage of total respondents reporting increases minus the percentage reporting declines.

Note: The first quarter survey ran from June 15, 2023 to June 30, 2023 and included 33 responses from firms in Colorado, Kansas, Nebraska, Oklahoma, Wyoming, northern New Mexico, and western Missouri.

Table 2
Historical Energy Survey Indexes

	Q2'20	Q3'20	Q4'20	Q1'21	Q2'21	Q3'21	Q4'21	Q1'22	Q2'22	Q3'22	Q4'22	Q1'23	Q2'23
Versus a Quarter Ago													
(not seasonally adjusted)													
Drilling/Business Activity	-61	4	40	35	33	43	32	29	57	44	6	-13	-19
Total Revenues	-78	-7	31	44	82	82	63	38	87	25	-8	-42	-42
Capital Expenditures	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
Supplier Delivery Time	-13	-21	0	5	-3	-3	6	-9	10	-3	-11	-3	-21
Total Profits	-88	-24	14	36	70	69	34	44	68	29	-17	-26	-39
Number of Employees	-56	-39	-14	12	25	26	34	39	42	47	38	6	27
Employee Hours	-55	-38	3	17	42	38	28	41	39	37	41	6	18
Wages and Benefits	-38	-17	9	21	39	33	53	56	58	61	59	42	27
Access to Credit	-31	-28	-6	5	9	16	10	25	16	6	6	0	3
Versus a Year Ago													
Drilling/Business Activity	-70	-71	-60	12	59	68	74	52	77	78	56	17	-16
Total Revenues	-74	-79	-77	20	88	92	88	72	90	87	67	-10	-48
Capital Expenditures	-69	-66	-57	14	30	54	59	63	71	71	65	26	0
Supplier Delivery Time	-26	-10	-9	7	3	8	9	-3	23	6	-5	10	-45
Total Profits	-84	-83	-69	5	91	82	84	75	81	84	61	3	-48
Number of Employees	-61	-59	-60	-17	12	31	32	66	55	61	56	26	39
Employee Hours	-53	-62	-46	-7	30	45	29	63	55	50	57	26	21
Wages and Benefits	-16	-24	-32	0	45	56	77	84	77	87	89	77	58
Access to Credit	-35	-28	-46	-12	24	29	23	38	19	27	3	6	6
Expected in Six Months													
(not seasonally adjusted)													
Drilling/Business Activity	0	0	26	41	41	45	45	42	50	25	19	-13	-22
Total Revenues	-16	-7	51	54	76	58	50	53	55	27	11	-26	3
Capital Expenditures	-35	-14	9	36	33	31	53	63	52	52	49	-6	-9
Supplier Delivery Time	-19	3	-3	10	18	8	9	9	16	-10	-19	-23	-42
Total Profits	-10	-3	51	37	79	59	44	38	35	39	6	-23	-3
Number of Employees	-26	-38	-9	24	30	31	42	47	42	42	38	13	12
Employee Hours	-33	-31	-3	36	27	26	23	41	32	27	30	13	3
Wages and Benefits	-19	-28	12	36	36	46	71	72	63	65	70	45	24
Access to Credit	-13	-10	6	7	12	13	6	19	6	7	3	-6	3
Expected Oil Prices	28	28	51	24	55	33	34	-16	-6	20	62	29	42
Expected Natural Gas Prices	38	34	37	31	59	31	3	0	10	-10	-3	14	53
Expected Natural Gas Liquids Prices	45	31	40	36	63	34	13	19	0	21	22	20	31
Special Price Questions													
(averages)													
Profitable WTI Oil Price (per barrel)		$49		$53		$57		$62	$65	$61	$64	$64	$63
WTI Price to Substantially Increase Drilling	$51		$56		$72		$73	$86	$98	$102	$89	$86	$86
WTI Price Expected in 6 Months	$41	$43	$48	$62	$74	$73	$75	$96	$109	$88	$83	$75	$75
WTI Price Expected in 1 Year	$47	$47	$52	$65	$76	$75	$78	$89	$102	$89	$86	$81	$79
WTI Price Expected in 2 Years	$53	$53	$56	$67	$76	$75	$78	$83	$88	$90	$88	$86	$83
WTI Price Expected in 5 Years	$60	$60	$61	$70	$78	$76	$80	$84	$86	$93	$88	$90	$88
Profitable Natural Gas Price (per million BTU)		$ 3.12		$2.94		$3.88		$3.72	$4.64	$4.42	$4.32	$3.45	$3.49
Natural Gas Price to Substantially Increase	$ 2.88		$ 3.28		$3.82		$4.27	$4.53	$6.34	$7.65	$6.13	$4.74	$4.67
Henry Hub Price Expected in 6 Months	$ 2.17	$ 2.62	$2.68	$2.72	$3.19	$4.72	$3.66	$4.45	$7.06	$7.46	$5.01	$2.82	$3.00
Henry Hub Price Expected in 1 Year	$ 2.41	$ 2.71	$2.88	$2.94	$3.21	$4.22	$3.92	$4.32	$6.65	$6.48	$5.52	$3.33	$3.33
Henry Hub Price Expected in 2 Years	$ 2.64	$ 2.87	$3.03	$3.14	$3.34	$4.31	$3.97	$4.29	$6.06	$6.16	$5.78	$4.04	$3.71
Henry Hub Price Expected in 5 Years	$ 3.02	$ 3.28	$3.23	$3.50	$3.71	$4.79	$4.29	$4.74	$5.77	$6.51	$6.19	$4.51	$3.98

Selected Energy Comments

“Current low inventory levels leading to strength in 6-month time frame, demand slowing and longer term supply increasing over the 2-5 year time frame.”

“Gas seen as longer-term pillar in energy transition. Still lots of known supply available.”

“I expected higher demand coming from the China re-opening. Currently it does not look like that demand is there.”

“Our company could do more and would do more if we could find quality people. The traders have believed the recession talk and have hurt commodity prices. The fundamentals still show energy use increasing. Oil and gas are a big part of filling that need.”

“Our experience is that AI will augment personnel, not replace. Perhaps in a time frame longer than five years you might have some moderate replacement of personnel.”

Additional Resources

Current Release

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About the Energy Survey

Authors

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Senior Vice President and Oklahoma City Branch Executive

Chad Wilkerson serves as Oklahoma City Branch Executive and Senior Vice President of Community Development for the Federal Reserve Bank of Kansas City. Wilkerson has been with the Federal Reserve since 1998, starting in Kansas City's research department.Appointed in 2006 as Oklahoma City Branch Executive, Wilkerson is the Bank's lead officer and regional economist in Oklahoma. He recruits and works closely with the Oklahoma City Branch Board of Directors and is responsible for briefing the Kansas City Fed president, a member of the Federal Open Market Committee, on economic trends in the state. His team conducts research and surveys on key regional issues such as energy, manufacturing and migration.Wilkerson was appointed Senior Vice President in 2022, and supports a Community Development team located across the Kansas City Fed's seven-state region. This group works to understand and address issues affecting the ability of underserved communities and small businesses to access credit. Community development focus areas include financial resiliency, affordable housing, community investments, workforce development, rural development and digital inclusion.Wilkerson holds a master's degree in public policy from the University of Chicago, as well as a master's degree from Southwestern Seminary and bachelor's degree from William Jewell College. He serves on the boards of the Economic Club of Oklahoma, the United Way of Central Oklahoma and City Rescue Mission. He lives in Edmond, Oklahoma, with his wife and children.

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Chase Farha is a Research Associate in the Regional Affairs department at the Oklahoma City branch of the Federal Reserve Bank of Kansas City. In this role, his responsibilities include contributing to the Oklahoma Economist and a variety of research projects. He holds a Bachelor of Science degree in Economics, with minors in mathematics and Arabic, from Tulane University.