



Energy Survey

Tenth District Energy Activity Continued to Increase Moderately

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First quarter energy survey results revealed that Tenth District energy activity continued to increase moderately. Activity moved higher than year-ago levels for the first time since early 2019, and expectations also increased further. Firms reported that oil prices needed to be on average \$53 per barrel for drilling to be profitable, and natural gas prices needed to be \$2.94 per Btu.

Summary of Quarterly Indicators

Tenth District energy activity expanded moderately in the first quarter of 2021 and moved higher than year ago levels, as indicated by firms contacted between March 15th and March 31st, 2021 (Tables 1 & 2). The drilling and business activity index eased only slightly from 40 to 34 (Chart 1). Total revenues, profits, employment, employee hours, access to credit, and wages and benefits indexes increased from the previous month.

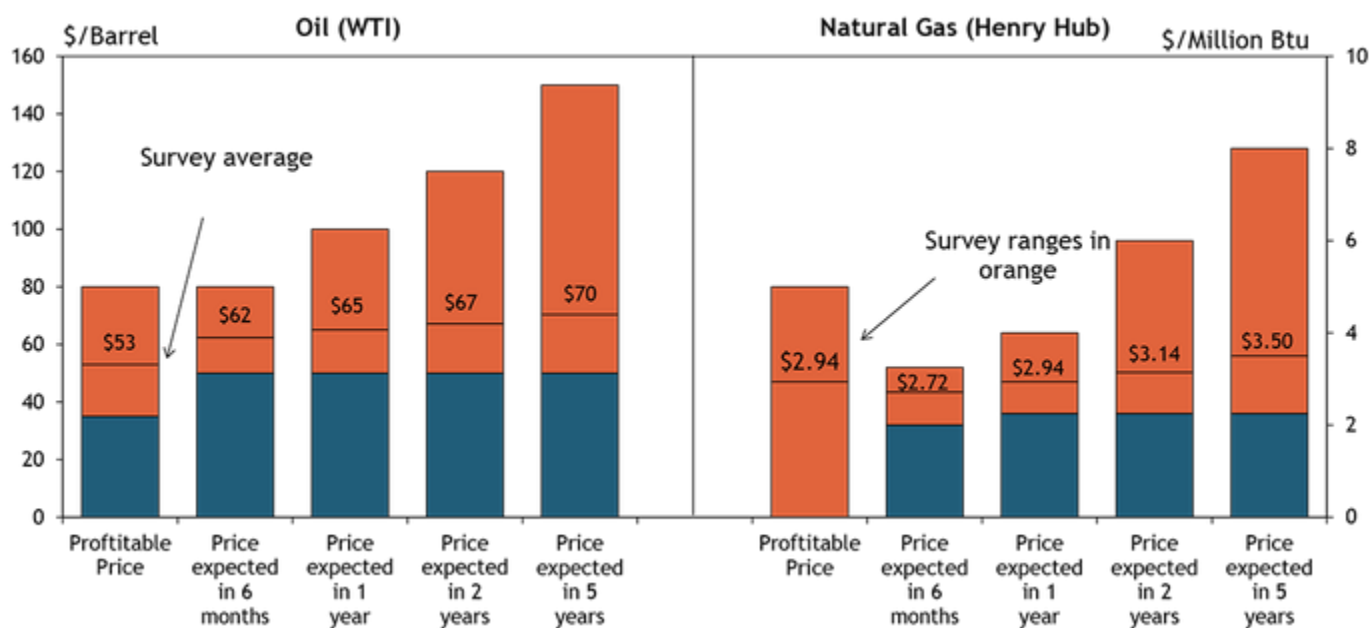
Year-over-year indexes moved into positive territory for the first time since early 2019. The year-over-year drilling and business activity index moved from -60 to 10. Indexes for revenues, capital spending, and profits were higher than year-ago levels. On the other hand, the indexes for employment and access to credit continued to decline.

Expectations indexes increased in Q1 2021. The future drilling and business activity index was 40, up from 26 in Q4 and 0 in Q3 2020, indicating more firms expected energy activity to expand. The capital expenditures and employment indexes rose substantially, and expectations for revenues, profits, and access to credit also expanded. Price expectations for oil, natural gas, and natural gas liquids expanded at a slower pace, but still remained at high levels.

Summary of Special Questions

This quarter firms were asked what oil and natural gas prices were needed for drilling to remain profitable on average across the fields in which they are active (in alternate quarters they are asked what prices are needed for a substantial increase in drilling to occur). The average oil price needed was \$53 per barrel, with a range of \$35 to \$80 (Chart 2). This average was higher than prices needed to remain profitable in Q3 2020, but still lower than prices for the past several years. The average natural gas price needed was \$2.94 per million Btu, with responses ranging from \$0.75 to \$5.00.

Chart 2: Special Question - What price is currently needed for drilling to be profitable for oil and natural gas, and what do you expect the WTI and Henry Hub prices to be in six months, one year, two years, and five years?



Firms were again asked what they expected oil and natural gas prices to be in six months, one year, two years, and five years. Overall, expected oil and natural gas prices were higher than previous price expectations in 2020. The average expected WTI prices were \$62, \$65, \$67, and \$70 per barrel, respectively. The average expected Henry Hub natural gas prices were \$2.72, \$2.94, \$3.14, and \$3.50 per million Btu, respectively.

Firms were also asked about the crude oil supply gap (Chart 3). Around 42% of firms indicated there would be a supply gap beyond 2021, with 37% of firms reporting no gap would exist after this year. Approximately 21% of firms were unsure about crude oil supply gap.

Additionally, firms were again asked about the availability of financing (Chart 4). Financing has become more available, with around 61% of firms indicating more availability of financing and only 39% reporting less availability. This is in contrast to previous times this question was asked, with 22% in 2015 and 42% in 2017 saying more financing was available and 78% and 58% of firms, respectively, reporting less financing was offered.

Table 1
Summary of Tenth District Energy Conditions, Quarter 1, 2021

	Quarter 1 vs. Quarter 4 (percent)*				Quarter 1 vs. Year Ago (percent)*				Expected in Six Months (percent)*			
	No		Diff		No		Diff		No		Diff	
Energy Company Indicators	Increase	Change	Decrease	Index [^]	Increase	Change	Decrease	Index [^]	Increase	Change	Decrease	Index [^]
Drilling/Business Activity	41	51	7	34	36	38	26	10	48	45	7	40
Total Revenues	60	26	14	45	50	17	33	17	64	24	12	52
Capital Expenditures					30	53	16	14	44	47	9	35
Supplier Delivery Time	19	67	14	5	23	60	16	7	21	70	9	12
Total Profits	56	21	23	33	42	19	40	2	55	29	17	38
Number of Employees	26	60	14	12	28	28	44	-16	30	63	7	23
Employee Hours	33	51	16	16	26	42	33	-7	44	47	9	35
Wages and Benefits	35	51	14	21	33	35	33	0	44	49	7	37
Access to Credit	14	77	9	5	12	63	26	-14	21	65	14	7
Expected Oil Prices									40	44	16	23
Expected Natural Gas Prices									42	47	12	30
Expected Natural Gas Liquids Prices									37	60	2	35

*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 March 15 to March 31, 2021 and included 43 responses from firms in Colorado, Kansas, Nebraska, Oklahoma, Wyoming, northern New Mexico, and western Missouri.

Table 2
Historical Energy Survey Indexes

	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	Q1'20	Q2'20	Q3'20	Q4'20	Q1'21
<i>Versus a Quarter Ago</i> (not seasonally adjusted)													
Drilling/Business Activity	37	26	45	-13	0	7	-23	-48	-81	-61	4	40	34
Total Revenues	50	53	50	6	13	-14	-10	6	-73	-78	-7	31	45
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	19	16	7	0	3	7	-7	-6	-24	-13	-21	0	5
Total Profits	50	53	37	-18	6	-18	-23	-21	-81	-88	-24	14	33
Number of Employees	20	29	23	9	3	0	-10	0	-54	-56	-39	-14	12
Employee Hours	24	24	23	6	6	0	0	-12	-54	-55	-38	3	16
Wages and Benefits	34	39	33	30	28	15	10	9	-24	-38	-17	9	21
Access to Credit	3	15	10	-19	-10	-7	-6	-21	-32	-31	-28	-6	5
<i>Versus a Year Ago</i>													
Drilling/Business Activity	54	41	57	17	17	-11	-21	-50	-92	-70	-71	-60	10
Total Revenues	68	56	61	50	23	-22	-7	-19	-81	-74	-79	-77	17
Capital Expenditures	68	58	62	27	3	4	-10	-13	-68	-69	-66	-57	14
Supplier Delivery Time	19	16	10	3	3	7	-21	-13	-22	-26	-10	-9	7
Total Profits	53	50	47	42	6	-24	-13	-30	-83	-84	-83	-69	2
Number of Employees	31	36	27	27	24	4	-13	-18	-62	-61	-59	-60	-16
Employee Hours	30	34	31	19	16	3	-17	-18	-62	-53	-62	-46	-7
Wages and Benefits	48	69	67	55	47	43	33	3	-30	-16	-24	-32	0
Access to Credit	0	15	25	9	3	-7	0	-16	-44	-35	-28	-46	-14
<i>Expected in Six Months</i> (not seasonally adjusted)													
Drilling/Business Activity	50	61	50	-19	17	-26	-21	-16	-78	0	0	26	40
Total Revenues	52	50	56	-23	47	-4	4	13	-78	-16	-7	51	52
Capital Expenditures	56	48	43	-13	19	-4	-17	-13	-73	-35	-14	9	35
Supplier Delivery Time	15	17	-4	9	14	14	-14	-23	-32	-19	3	-3	12
Total Profits	53	48	59	-27	35	-7	-10	0	-81	-10	-3	51	38
Number of Employees	34	33	21	15	14	0	-3	-16	-68	-26	-38	-9	23
Employee Hours	43	31	17	3	13	-4	-10	-18	-59	-33	-31	-3	35
Wages and Benefits	34	39	34	42	28	15	17	-6	-49	-19	-28	12	37
Access to Credit	3	6	30	3	0	-3	-10	-9	-44	-13	-10	6	7
Expected Oil Prices	31	12	48	29	34	15	32	28	-19	28	28	51	23
Expected Natural Gas Prices	3	21	20	-33	3	10	23	-6	16	38	34	37	30
Expected Natural Gas Liquids Prices	7	27	32	-3	18	-7	13	10	-8	45	31	40	35
<i>Special Price Questions</i> (averages)													
Profitable WTI Oil Price (per barrel)	\$52		\$55		\$52		\$55		\$47		\$49		\$53
WTI Price to Substantially Increase Drilling		\$69		\$63		\$66		\$65		\$51		\$56	
WTI Price Expected in 6 Months	\$63	\$67	\$71	\$54	\$60	\$57	\$58	\$60	\$33	\$41	\$43	\$48	\$62
WTI Price Expected in 1 Year	\$64	\$70	\$72	\$59	\$61	\$60	\$60	\$62	\$42	\$47	\$47	\$52	\$65
WTI Price Expected in 2 Years	\$66	\$73	\$73	\$61	\$65	\$63	\$63	\$65	\$50	\$53	\$53	\$56	\$67
WTI Price Expected in 5 Years	\$72	\$78	\$79	\$66	\$72	\$70	\$69	\$71	\$58	\$60	\$60	\$61	\$70
Profitable Natural Gas Price (per million BTU)	\$2.92		\$3.23		\$3.02		\$2.91		\$2.65		\$3.12		\$2.94
Natural Gas Price to Substantially Increase Drilling		\$3.60		\$3.48		\$3.40		\$3.66		\$2.88		\$3.28	
Henry Hub Price Expected in 6 Months	\$2.70	\$2.85	\$2.89	\$3.06	\$2.85	\$2.52	\$2.59	\$2.38	\$2.02	\$2.17	\$2.62	\$2.68	\$2.72
Henry Hub Price Expected in 1 Year	\$2.83	\$2.90	\$2.92	\$3.12	\$2.91	\$2.59	\$2.58	\$2.49	\$2.34	\$2.41	\$2.71	\$2.88	\$2.94
Henry Hub Price Expected in 2 Years	\$2.98	\$3.05	\$3.10	\$3.23	\$3.05	\$2.79	\$2.81	\$2.69	\$2.57	\$2.64	\$2.87	\$3.03	\$3.14
Henry Hub Price Expected in 5 Years	\$3.33	\$3.34	\$3.42	\$3.54	\$3.18	\$3.16	\$3.20	\$3.09	\$2.94	\$3.02	\$3.28	\$3.23	\$3.50

Selected Energy Comments

“Full time employment is way down, will continue to be down, and will be replaced with more contract/part time workers.”

“We anticipate 2021 US production to remain flat with single digit to low double-digit growth in 2022. Policy and fuel switching concerns are generally over-estimated in light of the practical and physical realities of the energy mix. Oil and gas will become cleaner and continue to secure its role as the primary fuel source for several decades to come.”

“A tremendous amount of uncertainty will exist on both the demand side and politically during the next 12 to 24 months. Conquering Covid-19 and returning to normal market demand will be the first step. US policy change will then provide the next tailwind or headwind depending upon direction and balance.”

“Production in the US was expected to move consistently upward. That is over. Now the question is how quickly it will fall and stay below 10mmbd.”

“It appears that US shale producers are less likely to immediately respond with increased drilling/completion rates when oil price increases provide them with increased cashflow.”

“Capital markets are demanding E&P companies to generate cash flow in excess of their capital investment, or in other words generate free cash flow. With the upward price movement public E&Ps so far have not raised capital investment.”

“The years of over-spending by shale drillers will limit the survivors’ opportunities to fund drilling programs. The oil markets will become more dependent on the actions of OPEC producers as they regain market share. This will become more obvious once investors realize many of the horizontal plays have been over-drilled and billions were wasted on wells that did not need to be drilled.”

“We have lost many employees that left when the price fell apart last spring. It has been difficult to hire appropriately skilled labor.”

“Investor sentiment has changed from growth to value. A more cautious approach to growth will be the focus for the next 12 to 24 months as demand recovery occurs. Demand will drive decisions long-term.”

Additional Resources

[Current Release](#)

[Download Historical Data](#)

Tenth District Energy Activity Continued to Increase Moderately
<https://www.kansascityfed.org/surveys/energy-survey/tenth-district-energy-activity-continued-to-increase-moderately/>

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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.
