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CONTACT: Pam Campbell
(405) 270-8617
Pam.Campbell@kc.frb.org

Tenth District Energy Activity Accelerated

Federal Reserve Bank of Kansas City Releases Third Quarter Energy Survey

KANSAS CITY, Mo. –The Federal Reserve Bank of Kansas City released the third quarter Energy Survey today. According to Chad Wilkerson, Oklahoma City Branch executive and economist at the Federal Reserve Bank of Kansas City, the survey revealed that Tenth District energy activity accelerated, and a majority of firms reported higher revenues and profits. Drilling and business activity continued to outpace the previous year, and expectations increased further.

"District drilling and business activity grew in Q3, with additional growth expected over the next six months," said Wilkerson. "Commodity prices have increased considerably from a quarter ago and a year ago, and firms also reported needing higher prices for drilling to be profitable for oil and natural gas."

The Kansas City Fed's quarterly Tenth District Energy Survey provides information on current and expected activity among energy firms in the Tenth District. The survey monitors oil and gas-related firms located and/or headquartered in the Tenth District, with results based on total firm activity. Survey results reveal changes in several indicators of energy activity, including drilling, capital spending, and employment. Firms also indicate projections for oil and gas prices. All results are diffusion indexes – the percentage of firms indicating increases minus the percentage of firms indicating decreases. A summary of the survey is attached. Results from past surveys and release dates for future surveys can be found at https://www.kansascityfed.org/surveys/energy-survey.

The Federal Reserve Bank of Kansas City serves the Tenth Federal Reserve District, encompassing the western third of Missouri; all of Kansas, Colorado, Nebraska, Oklahoma and Wyoming; and the northern half of New Mexico. As part of the nation's central bank, the Bank participates in setting national monetary policy, supervising and regulating numerous commercial banks and bank holding companies, and providing financial services to depository institutions. More information is available online at www.kansascityfed.org.

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TENTH DISTRICT ENERGY SUMMARY

Third quarter energy survey results revealed that Tenth District energy activity accelerated, and a majority of firms reported higher revenues and profits. Drilling and business activity continued to outpace the previous year, and expectations increased further. Firms reported that oil prices needed to be on average $57 per barrel for drilling to be profitable, and natural gas prices needed to be $3.88 per million Btu.

Summary of Quarterly Indicators

Tenth District energy activity accelerated in the third quarter of 2021 and continued to outpace year ago levels, as indicated by firms contacted between September 15th and September 30th, 2021 (Tables 1 & 2). The drilling and business activity index rose from 33 to 39 (Chart 1). Total revenues and profits indexes remained near the survey record highs posted in Q2 2021. Access to credit expanded from the previous quarter, while supplier delivery time remained negative.

Year-over-year indexes increased from the previous survey. The year-over-year drilling and business activity index grew from 59 to 69. The indexes for revenues, capital expenditures, supplier delivery time, employees, employee hours, wages and benefits, and access to credit rose at a faster pace in Q3 2021 compared to a year ago. Profits remained very high but grew at a slightly slower rate from the previous reading.

Expectations indexes continued to expand in Q3 2021. The future drilling and business activity index, at 46, was up from 41 in Q2, indicating additional firms expected energy activity to expand. Future revenues and profits indexes remained very high, and expectations for wages and benefits increased. Price expectations for oil, natural gas, and natural gas liquids were positive, but expectations for the pace of price growth was slower than a quarter ago given the rapid increase in prices recently.

Summary of Special Questions

This quarter 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 (in alternate quarters they are asked what prices are needed for a substantial increase in drilling to occur). The average oil price needed was $57 per barrel, with a range of $40 to $80 (Chart 2). This profitable price average for oil was the highest level reported since Q3 2015. The average natural gas price needed was $3.88 per million Btu, with responses ranging from $2.00 to $7.50.

Firms were again asked what they expected oil and natural gas prices to be in six months, one year, two years, and five years. Oil price expectations were slightly lower than a quarter ago, while natural gas price expectations rose to the highest level recorded since the survey began this question in 2017. The average expected WTI prices were $73, $74, $75, and $76 per barrel, respectively. The average expected Henry Hub natural gas prices were $4.72, $4.22, $4.31, and $4.79 per million Btu, respectively.

Firms were also asked about the impact of COVID-19 infections over the past quarter, and over half of firms indicated minor delays or disruptions. 44% of firms reported difficulties hiring workers over the past quarter, while 26% of firms did not have any job openings, and 31% of contacts reported they were able to hire without difficulty.

Finally, firms were asked their expectations for U.S. oil production (Chart 3). Around 60% of firms did not expect U.S. oil production to return to pre-pandemic levels, while 40% responded affirmatively that national oil production would rebound. Of those who responded yes, only 7% of contacts anticipated U.S. oil production would return to pre-pandemic levels by the end of 2021 (Chart 4). Of those who expected U.S. oil production to rebound, 47% of contacts expected it to return to pre-pandemic levels in 2022, 13% expected 2023, and a third of firms who expected production to rebound said it would occur beyond 2023.

Selected Energy Comments

“Drilling costs are increasing significantly - on the order of 25% over the past six months. This is driving the breakeven needed for a drilling program higher.”

“The near-term supply and demand imbalance is pushing prices higher, particularly as the global consumption of oil rebounds. Additionally, U.S. producers are showing restraint allowing OPEC to throttle supply with a likely higher oil price than the long-term marginal barrel.”

“Short-term regulatory factors will drive pricing higher in the near-term leading to consumer pushback and ultimately increased drilling for oil and gas.”

“Associated gas will increase as the US shale drilling ramps up in future years. European demand will be further satisfied from Russian supply reducing the U.S. market share.”

“Worldwide demand for natural gas is extraordinarily strong.”

“Occasional positive [COVID] test will impact a crew or work site requiring confinement.”

“There has been a slowdown of permitting from the surface management agencies. Supply chain has also slowed down… parts not available.”

“Workers demanding work from home policy.”

“It takes a long time to ramp up production... at least two years lead time. Federal leases cannot be developed because of proposed regulation on federal fracturing ban.”

“Secondary production units have restarted as pricing improves.”

“Higher prices will open up existing wells shut in last year.”

“Independent producers have less access to credit than pre-pandemic levels (i.e. more difficult to expand), along with new found financial discipline that investors are demanding.”

Table 1
Summary of Tenth District Energy Conditions, Quarter 3, 2021

Energy Company Indicators	Quarter 3 vs. Quarter 2 (percent)* Increase	No Change	Decrease	Diff Index^	Quarter 3 vs. Year Ago (percent)* Increase	No Change	Decrease	Diff Index^	Expected in Six Months (percent)* Increase	No Change	Decrease	Diff Index^
Drilling/Business Activity	45	50	5	39	74	21	5	69	51	44	5	46
Total Revenues	80	20	0	80	92	8	0	92	62	33	5	56
Capital Expenditures					58	40	3	55	43	48	10	33
Supplier Delivery Time	25	48	28	-3	41	26	33	8	35	40	25	10
Total Profits	78	13	10	68	88	8	5	83	60	38	3	58
Number of Employees	30	65	5	25	43	45	13	30	38	55	8	30
Employee Hours	37	63	0	37	46	51	3	44	31	64	5	26
Wages and Benefits	35	65	0	35	60	38	3	58	48	50	3	45
Access to Credit	18	79	3	15	33	64	3	31	18	77	5	13
Expected Oil Prices									40	53	8	33
Expected Natural Gas Prices									53	25	23	30
Expected Natural Gas Liquids Prices									44	46	10	33

*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 third quarter survey ran from September 15 to September 30, 2021 and included 40 responses from firms in Colorado, Kansas, Nebraska, Oklahoma, Wyoming, northern New Mexico, and western Missouri.

Chart 1. Drilling/Business Activity Index vs. a Quarter Ago

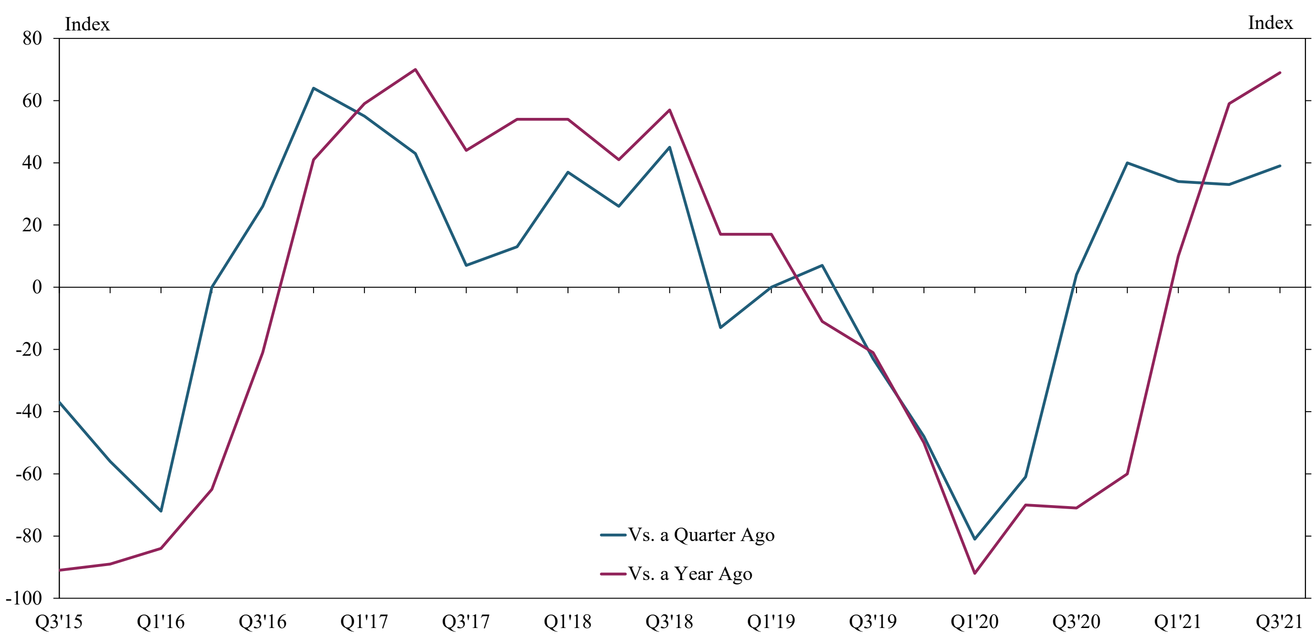

Table 2
Historical Energy Survey Indexes

	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	Q1'20	Q2'20	Q3'20	Q4'20	Q1'21	Q2'21	Q3'21
Versus a Quarter Ago													
(not seasonally adjusted)													
Drilling/Business Activity	45	-13	0	7	-23	-48	-81	-61	4	40	34	33	39
Total Revenues	50	6	13	-14	-10	6	-73	-78	-7	31	45	82	80
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	7	0	3	7	-7	-6	-24	-13	-21	0	5	-3	-3
Total Profits	37	-18	6	-18	-23	-21	-81	-88	-24	14	33	70	68
Number of Employees	23	9	3	0	-10	0	-54	-56	-39	-14	12	25	25
Employee Hours	23	6	6	0	0	-12	-54	-55	-38	3	16	42	37
Wages and Benefits	33	30	28	15	10	9	-24	-38	-17	9	21	39	35
Access to Credit	10	-19	-10	-7	-6	-21	-32	-31	-28	-6	5	9	15
Versus a Year Ago													
Drilling/Business Activity	57	17	17	-11	-21	-50	-92	-70	-71	-60	10	59	69
Total Revenues	61	50	23	-22	-7	-19	-81	-74	-79	-77	17	88	92
Capital Expenditures	62	27	3	4	-10	-13	-68	-69	-66	-57	14	30	55
Supplier Delivery Time	10	3	3	7	-21	-13	-22	-26	-10	-9	7	3	8
Total Profits	47	42	6	-24	-13	-30	-83	-84	-83	-69	2	91	83
Number of Employees	27	27	24	4	-13	-18	-62	-61	-59	-60	-16	12	30
Employee Hours	31	19	16	3	-17	-18	-62	-53	-62	-46	-7	30	44
Wages and Benefits	67	55	47	43	33	3	-30	-16	-24	-32	0	45	58
Access to Credit	25	9	3	-7	0	-16	-44	-35	-28	-46	-14	24	31
Expected in Six Months													
(not seasonally adjusted)													
Drilling/Business Activity	50	-19	17	-26	-21	-16	-78	0	0	26	40	41	46
Total Revenues	56	-23	47	-4	4	13	-78	-16	-7	51	52	76	56
Capital Expenditures	43	-13	19	-4	-17	-13	-73	-35	-14	9	35	33	33
Supplier Delivery Time	-4	9	14	14	-14	-23	-32	-19	3	-3	12	18	10
Total Profits	59	-27	35	-7	-10	0	-81	-10	-3	51	38	79	58
Number of Employees	21	15	14	0	-3	-16	-68	-26	-38	-9	23	30	30
Employee Hours	17	3	13	-4	-10	-18	-59	-33	-31	-3	35	27	26
Wages and Benefits	34	42	28	15	17	-6	-49	-19	-28	12	37	36	45
Access to Credit	30	3	0	-3	-10	-9	-44	-13	-10	6	7	12	13
Expected Oil Prices	48	29	34	15	32	28	-19	28	28	51	23	55	33
Expected Natural Gas Prices	20	-33	3	10	23	-6	16	38	34	37	30	59	30
Expected Natural Gas Liquids Prices	32	-3	18	-7	13	10	-8	45	31	40	35	63	33
Special Price Questions													
(averages)													
Profitable WTI Oil Price (per barrel)	$55		$52		$55		$47		$49		$53		$57
WTI Price to Substantially Increase Drilling		$63		$66		$65		$51		$56		$72	
WTI Price Expected in 6 Months	$71	$54	$60	$57	$58	$60	$33	$41	$43	$48	$62	$74	$73
WTI Price Expected in 1 Year	$72	$59	$61	$60	$60	$62	$42	$47	$47	$52	$65	$76	$74
WTI Price Expected in 2 Years	$73	$61	$65	$63	$63	$65	$50	$53	$53	$56	$67	$76	$75
WTI Price Expected in 5 Years	$79	$66	$72	$70	$69	$71	$58	$60	$60	$61	$70	$78	$76
Profitable Natural Gas Price (per million BTU)	$ 3.23		$ 3.02		$2.91		$ 2.65		$ 3.12		$2.94		$3.88
Natural Gas Price to Substantially Increase Drilling		$3.48		$3.40		$ 3.66		$ 2.88		$ 3.28		$3.82	
Henry Hub Price Expected in 6 Months	$2.89	$3.06	$2.85	$2.52	$ 2.59	$ 2.38	$ 2.02	$ 2.17	$ 2.62	$2.68	$2.72	$3.19	$4.72
Henry Hub Price Expected in 1 Year	$2.92	$3.12	$2.91	$2.59	$ 2.58	$ 2.49	$ 2.34	$ 2.41	$ 2.71	$2.88	$2.94	$3.21	$4.22
Henry Hub Price Expected in 2 Years	$3.10	$3.23	$3.05	$2.79	$ 2.81	$ 2.69	$ 2.57	$ 2.64	$ 2.87	$3.03	$3.14	$3.34	$4.31
Henry Hub Price Expected in 5 Years	$3.42	$3.54	$3.18	$3.16	$ 3.20	$ 3.09	$ 2.94	$ 3.02	$ 3.28	$3.23	$3.50	$3.71	$4.79

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?

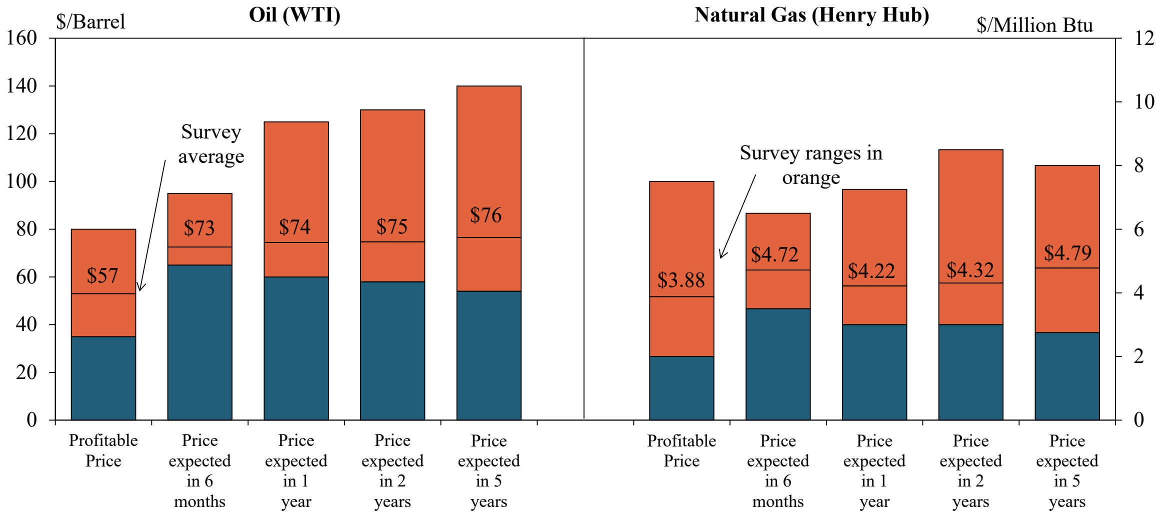

Chart 3. Special Question - Does your firm expect U.S. oil production to return to pre-pandemic levels?

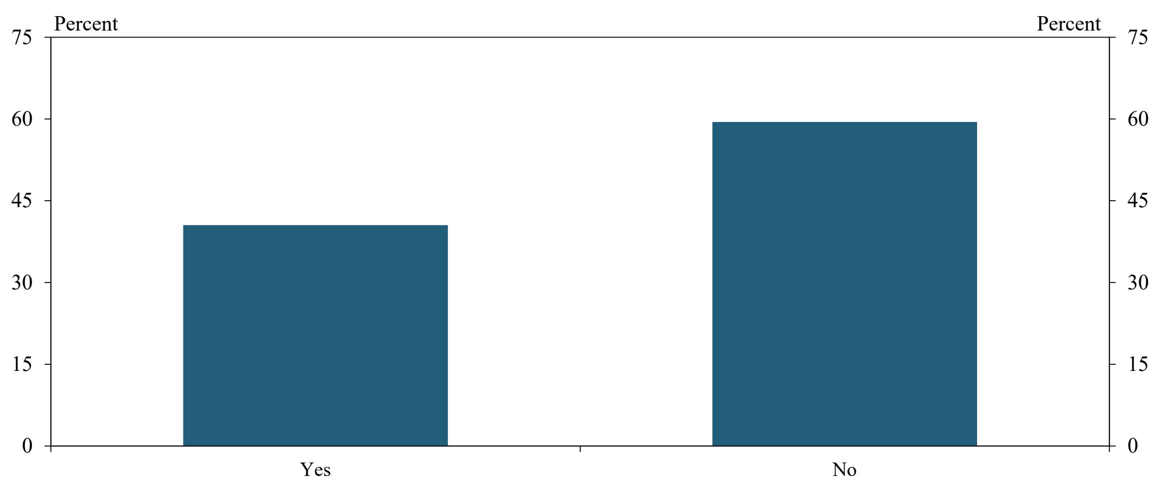

Chart 4. Special Question - If yes, when?