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Tenth District Energy Activity Expanded Moderately ***Federal Reserve Bank of Kansas City Releases Fourth Quarter Energy Survey***

KANSAS CITY, Mo. –The Federal Reserve Bank of Kansas City released the fourth 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 expanded moderately but continued to lag year ago levels.

“District drilling and business activity increased in Q4, indicating some recovery from historic lows in 2020,” said Wilkerson. “However, firms are increasing output with fewer employees, and additional job cuts are expected. A significant share of firms have plans to reduce emissions moving forward, and most firms also expected higher regulatory costs in the upcoming year.”

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/research/indicatorsdata/energy.

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

Fourth quarter energy survey results revealed Tenth District energy activity expanded moderately but continued to lag year-ago levels. Firms reported that oil prices needed to be on average $56 per barrel for a substantial increase in drilling to occur, and natural gas prices needed to be $3.28 per Btu. Expectations for future activity rose.

Summary of Quarterly Indicators

Tenth District energy activity expanded moderately in the fourth quarter of 2020 but continued to lag year ago levels, as indicated by firms contacted between December 15th and December 31st, 2020 (Tables 1 & 2). The drilling and business activity index rose significantly from 4 to 40 (Chart 1). Total revenues, profits, employee hours, and wages and benefits indexes rebounded back into positive territory. However, employment and access to credit indexes remained negative, indicating contraction in Q4 2020.

Year-over-year indexes were still negative in Q4 2020. The year-over-year drilling and business activity index moved from -71 to -60 in Q4. Indexes for employment, wages and benefits, and access to credit declined at a faster rate in Q4. On the other hand, the indexes for total revenues, capital expenditures, delivery time, profits, and employee hours were less negative than last quarter.

Expectations indexes increased, jumping back to positive for the first time since Q1 2019. The future drilling and business activity index was 26, up from 0 in Q2 and Q3 2020, indicating more firms expected energy activity to expand. The future total revenues and total profits indexes rose substantially, and expectations for capital expenditures, wages and benefits, and access to credit also expanded. However, future indexes for delivery time, employment, and employee hours remained negative. Price expectations for oil, natural gas, and natural gas liquids increased further in Q4 2020.

Summary of Special Questions

This quarter firms were asked what oil and natural gas prices were needed for a substantial increase in drilling to occur on average across the fields in which they are active (in alternate quarters they are asked what prices are needed to be profitable). The average oil price needed was $56 per barrel, with a range of $45 to $80 (Chart 2). This average was higher than prices needed to substantially increase drilling in Q2 2020, but still lower than prices for the past several years. The average natural gas price needed was $3.28 per million Btu, with responses ranging from $1.50 to $4.50.

Firms were again asked what they expected oil and natural gas prices to be in six months, one year, two years, and five years. Overall, expected oil and natural gas prices were higher than previous price expectations in 2020. The average expected WTI prices were $48, $52, $56, and $61 per barrel, respectively. The average expected Henry Hub natural gas prices were $2.68, $2.88, $3.03, and $3.23 per million Btu, respectively.

Firms were also asked about environmental operations (Chart 3). 45% of firms indicated they plan to reduce CO^2 or ethane emissions. Additionally, 42% of firms plan to recycle/reuse water and nearly a third plan to reduce flaring of excess product. In contrast, 42% of firms did not have one of the plans listed to curb emissions or reuse water. Regardless of environmental plan, 86% of firms anticipated higher regulatory costs in the upcoming year.

Additionally, firms were again asked about their expectations for global oil demand (Chart 4). Taking into account the global pandemic, over 70% of firms expected that global oil demand would peak sometime beyond 2025. Around 9% of firms anticipated global oil demand has already peaked or will peak within the next two years, and another 21% expect global oil demand to peak between 2023-2025.

Selected Energy Comments

"COVID-19 and the spring of 2020 price war has accelerated a decline in US shale production growth. COVID recovery and resulting demand growth coupled with ordinary demand growth will increase pressures on supply."

"There is an up-tick in global demand from the COVID vaccine. Also, there are less oil and gas companies today than 5 years ago. I believe U.S. [oil] production will stay flat over the next few years."

"Need world demand to get back to normal so inventories can be reduced. Then drilling picks up and drives supply up over next couple years while world tries to push away from fossil fuels and demand flattens."

"Current [natural gas] activity will not provide enough volume to meet post-COVID-19 demand recovery. Over time the demand will be met, returning price to current levels."

"With a successful vaccine deployment, oil demand will recover through 2021 with full recovery and return to growth by mid-2022."

"We will have a quick turn-around in the economy once the vaccine is widely distributed."

"Population growth, economic improvements, and lifestyle choices in the emerging markets will continue to drive oil demand beyond 2025."

"Renewable fuels and electric vehicles will impact peak global demand for oil."

"We think there is enough momentum in the call for renewables that oil demand will peak sooner than later."

"Developing world demand growth and general global population growth will offset source switching to other energy sources."

"The world is awash in oil and don't see any change UNLESS global economies pick up significantly."

"We will continue to build assets and will sacrifice short term profits."

Table 1
Summary of Tenth District Energy Conditions, Quarter 4, 2020

	Quarter 4 vs. Quarter 3 (percent)*				Quarter 4 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	43	54	3	40	9	23	69	-60	40	46	14	26
Total Revenues	54	23	23	31	6	11	83	-77	63	26	11	51
Capital Expenditures					11	20	69	-57	31	46	23	9
Supplier Delivery Time	6	89	6	0	11	69	20	-9	9	80	11	-3
Total Profits	43	29	29	14	11	9	80	-69	63	26	11	51
Number of Employees	14	57	29	-14	9	23	69	-60	17	57	26	-9
Employee Hours	15	74	12	3	9	37	54	-46	14	69	17	-3
Wages and Benefits	18	74	9	9	18	32	50	-32	24	65	12	12
Access to Credit	6	83	11	-6	3	49	49	-46	20	66	14	6
Expected Oil Prices									54	43	3	51
Expected Natural Gas Prices									46	46	9	37
Expected Natural Gas Liquids Prices									43	54	3	40

*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 fourth quarter survey ran from December 15 to December 31, 2020 and included 35 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

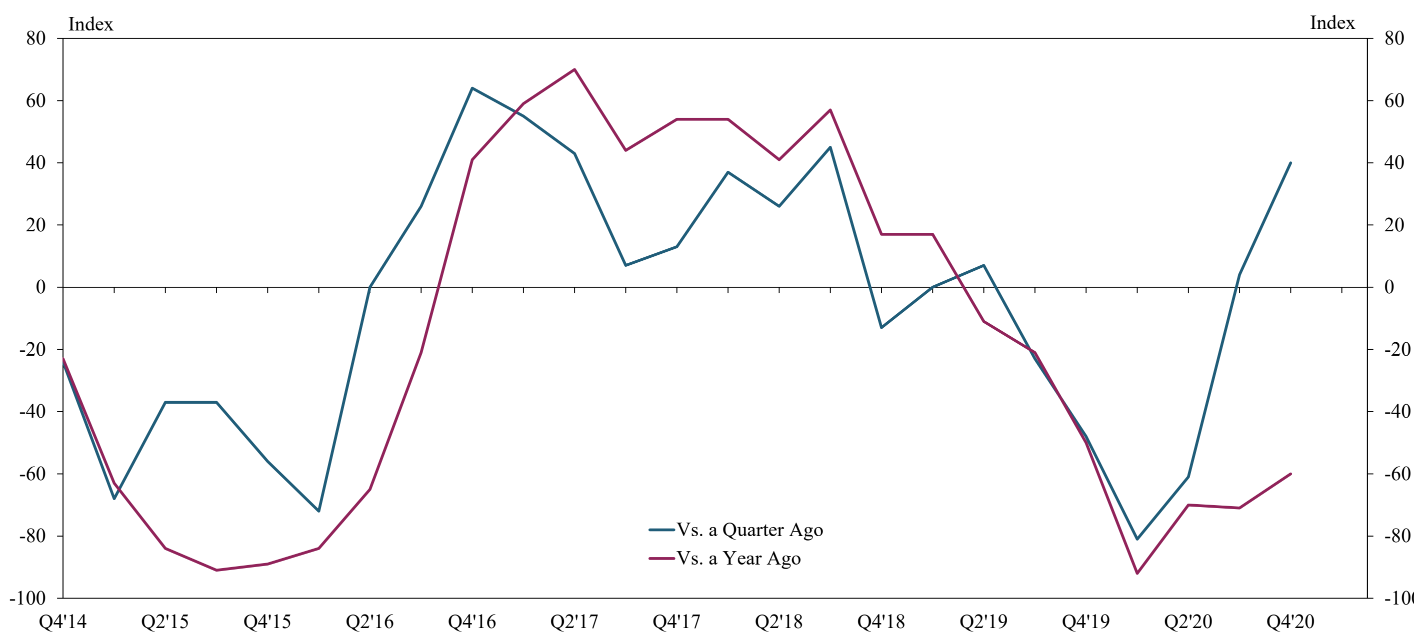

Table 2
Historical Energy Survey Indexes

	Q4'17	Q1'18	Q2'18	Q3'18	Q4'18	Q1'19	Q2'19	Q3'19	Q4'19	Q1'20	Q2'20	Q3'20	Q4'20
Versus a Quarter Ago													
(not seasonally adjusted)													
Drilling/Business Activity	13	37	26	45	-13	0	7	-23	-48	-81	-61	4	40
Total Revenues	39	50	53	50	6	13	-14	-10	6	-73	-78	-7	31
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	-4	19	16	7	0	3	7	-7	-6	-24	-13	-21	0
Total Profits	29	50	53	37	-18	6	-18	-23	-21	-81	-88	-24	14
Number of Employees	19	20	29	23	9	3	0	-10	0	-54	-56	-39	-14
Employee Hours	19	24	24	23	6	6	0	0	-12	-54	-55	-38	3
Wages and Benefits	16	34	39	33	30	28	15	10	9	-24	-38	-17	9
Access to Credit	0	3	15	10	-19	-10	-7	-6	-21	-32	-31	-28	-6
Versus a Year Ago													
Drilling/Business Activity	54	54	41	57	17	17	-11	-21	-50	-92	-70	-71	-60
Total Revenues	56	68	56	61	50	23	-22	-7	-19	-81	-74	-79	-77
Capital Expenditures	50	68	58	62	27	3	4	-10	-13	-68	-69	-66	-57
Supplier Delivery Time	-7	19	16	10	3	3	7	-21	-13	-22	-26	-10	-9
Total Profits	38	53	50	47	42	6	-24	-13	-30	-83	-84	-83	-69
Number of Employees	40	31	36	27	27	24	4	-13	-18	-62	-61	-59	-60
Employee Hours	27	30	34	31	19	16	3	-17	-18	-62	-53	-62	-46
Wages and Benefits	34	48	69	67	55	47	43	33	3	-30	-16	-24	-32
Access to Credit	7	0	15	25	9	3	-7	0	-16	-44	-35	-28	-46
Expected in Six Months													
(not seasonally adjusted)													
Drilling/Business Activity	33	50	61	50	-19	17	-26	-21	-16	-78	0	0	26
Total Revenues	44	52	50	56	-23	47	-4	4	13	-78	-16	-7	51
Capital Expenditures	43	56	48	43	-13	19	-4	-17	-13	-73	-35	-14	9
Supplier Delivery Time	-11	15	17	-4	9	14	14	-14	-23	-32	-19	3	-3
Total Profits	43	53	48	59	-27	35	-7	-10	0	-81	-10	-3	51
Number of Employees	21	34	33	21	15	14	0	-3	-16	-68	-26	-38	-9
Employee Hours	27	43	31	17	3	13	-4	-10	-18	-59	-33	-31	-3
Wages and Benefits	50	34	39	34	42	28	15	17	-6	-49	-19	-28	12
Access to Credit	14	3	6	30	3	0	-3	-10	-9	-44	-13	-10	6
Expected Oil Prices	50	31	12	48	29	34	15	32	28	-19	28	28	51
Expected Natural Gas Prices	28	3	21	20	-33	3	10	23	-6	16	38	34	37
Expected Natural Gas Liquids Prices	30	7	27	32	-3	18	-7	13	10	-8	45	31	40
Special Price Questions													
(averages)													
Profitable WTI Oil Price (per barrel)		$52		$55		$52		$55		$47		$49	
WTI Price to Substantially Increase Drilling	$62		$69		$63		$66		$65		$51		$56
WTI Price Expected in 6 Months	$58	$63	$67	$71	$54	$60	$57	$58	$60	$33	$41	$43	$48
WTI Price Expected in 1 Year	$60	$64	$70	$72	$59	$61	$60	$60	$62	$42	$47	$47	$52
WTI Price Expected in 2 Years	$62	$66	$73	$73	$61	$65	$63	$63	$65	$50	$53	$53	$56
WTI Price Expected in 5 Years	$70	$72	$78	$79	$66	$72	$70	$69	$71	$58	$60	$60	$61
Profitable Natural Gas Price (per million BTU)		$2.92		$3.23		$3.02		$2.91		$2.65		$3.12	
Natural Gas Price to Substantially Increase Drilling	$3.59		$3.60		$3.48		$3.40		$3.66		$2.88		$3.28
Henry Hub Price Expected in 6 Months	$2.88	$2.70	$2.85	$2.89	$3.06	$2.85	$2.52	$2.59	$2.38	$2.02	$2.17	$2.62	$2.68
Henry Hub Price Expected in 1 Year	$3.10	$2.83	$2.90	$2.92	$3.12	$2.91	$2.59	$2.58	$2.49	$2.34	$2.41	$2.71	$2.88
Henry Hub Price Expected in 2 Years	$3.30	$2.98	$3.05	$3.10	$3.23	$3.05	$2.79	$2.81	$2.69	$2.57	$2.64	$2.87	$3.03
Henry Hub Price Expected in 5 Years	$3.65	$3.33	$3.34	$3.42	$3.54	$3.18	$3.16	$3.20	$3.09	$2.94	$3.02	$3.28	$3.23

Chart 2. Special Question - What price is currently needed to substantially increase drilling 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?

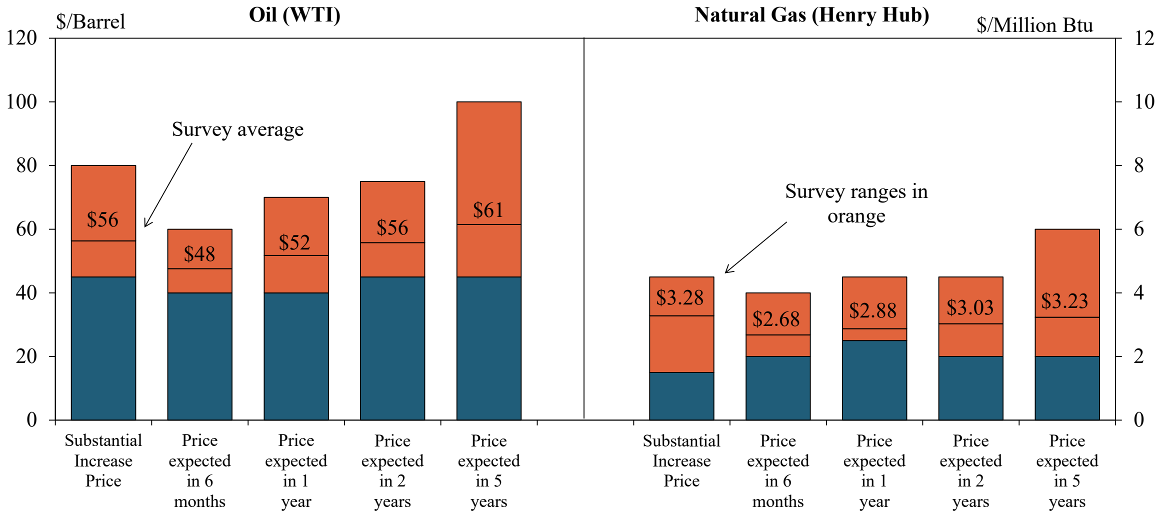

Chart 3. Special Question - Which of the following plans does your firm have? (Check all that apply)

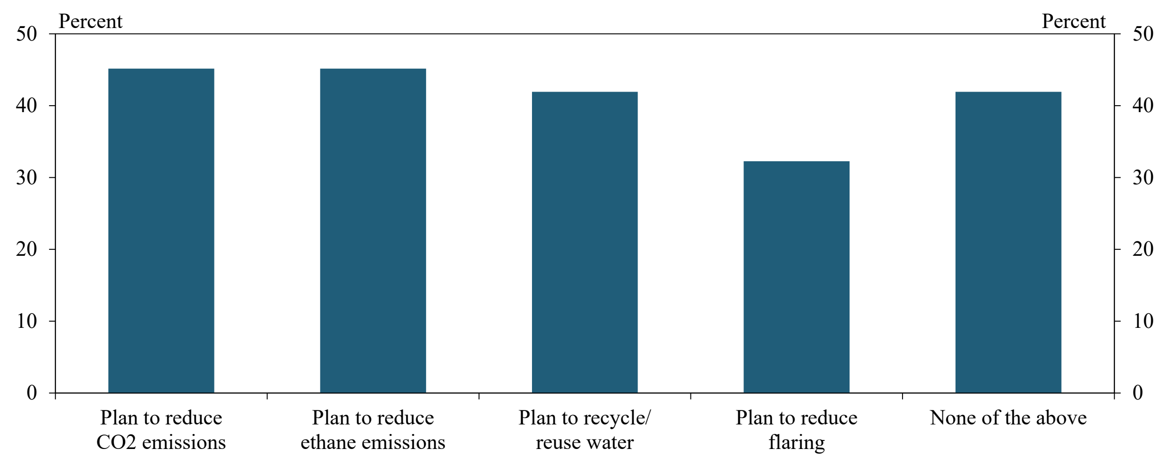

Chart 4. Special Question - Taking into account the global pandemic, when does your firm expect global demand for oil to peak?