News Release

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TENTH DISTRICT ENERGY ACTIVITY ACCELERATED SLIGHTLY

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 growth in Tenth District energy activity accelerated slightly.

“Regional energy firms reported somewhat stronger growth last quarter amid stronger oil prices, and were optimistic about the future,” said Wilkerson. “The average oil price firms said was necessary to substantially increase drilling was $62 per barrel.”

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 fourth quarter 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 Survey

Fourth quarter energy survey results revealed slightly faster growth in Tenth District energy firm activity. The future activity outlook was positive and continued to improve. Firms said that oil and natural gas prices needed to be on average $62 per barrel and $3.59 per million Btu, respectively to substantially increase drilling. Firms also said that spending was overall expected to increase in 2018 compared to 2017, with exploration and development seeing the strongest growth.

Summary of Quarterly Indicators

Tenth District energy activity accelerated slightly in the fourth quarter of 2017, as indicated by firms contacted between December 15th and January 5th (Tables 1 & 2). Most quarterly indexes increased in the fourth quarter. The drilling and business activity index rose from 7 to 13 (Chart 1). The revenues and employee hours indexes increased considerably. The wages and benefits and profits indexes grew moderately, and the supplier delivery time index rose to –4. The employment index edged higher. However, the access to credit index fell to zero.

Most year-over-year indexes also increased. The revenues, profits, and employment indexes were considerably higher. The drilling and business activity posted a moderate increase, while the supplier delivery time index rose but remained negative. The year-over-year capital expenditures index was unchanged. On the other hand, the wages and benefits index fell slightly, and the access to credit index slipped from 20 to 7.

Expectations continued to improve. The future wages and benefits index was significantly higher, and the profits and employee hours indexes also grew moderately. The future capital expenditures, access to credit and drilling and business activity indexes rose slightly. The future employment index inched up, while the revenues and supplier delivery time indexes were unchanged. Price expectations for oil and gas remained solid.

Summary of Special Questions

Firms were asked what oil and natural gas prices were needed for a substantial increase in drilling to occur in the areas in which they were active. The average oil price needed increased to $62 per barrel, with a range of $50 to $75 (Chart 2). The average natural gas price needed was $3.59 per million Btu, with responses ranging from $2.25 to $5.00.

Firms were also asked what they expected oil and natural gas prices to be in six months, one year, two years, and five years. Oil price expectations continued to increase modestly, while natural gas price expectations were marginally lower. The average expected WTI prices were $58, $60, $62, and $70 per barrel, respectively. The average expected Henry Hub natural gas prices were $2.88, $3.10, $3.30, and $3.65 per million Btu, respectively.

Firms were asked how spending in 2018 was expected to change in several categories compared to 2017. On average, spending was expected to increase across all categories. Capital spending for exploration and development was expected to increase the most followed by R&D (Chart 3). Maintenance capital spending was expected to increase modestly, while labor/wages/benefits, administrative, and other categories were expected to grow slightly.

Additionally, firms were asked what risks they face from renewable energy and electric vehicles (EVs) within the next 10 to 20 years. Almost half of firms said they faced low risks, while slightly more than a third said medium risks (Chart 4). Several respondents mentioned that the rate of adoption of EVs is limited by declining tax credits, support infrastructure, and battery range. Only a few firms said they faced high risk.

Firms were asked how their business has been affected since the lifting of the oil export ban. More than half of respondents have seen positive effects. Several said price differentials due to oil quality differences narrowed, notably for light sweet oil.

Lastly, firms were asked how the proposed tax bill was expected to impact them. Nearly three-fourths expected a slightly positive impact. The immediate impact was the lower corporate tax rate, which some said would help expand drilling.

Selected Comments

"There has not been enough exploration work to find new reserves. At some point companies will need to spend more. They cannot continue producing indefinitely at this price."

"I see an abundant supply of natural gas here in the U.S. With the ability to export I see prices gradually increasing."

"We are trying to maintain a consistent level of activity, which gives us operational efficiency. Commodity prices appear to have stabilized at a level that allows for medium term planning."

"A lower corporate and personal income tax will help add dollars to more exploration and production and drilling."

"Energy demand will increase as the economy expands and re-investment in manufacturing accelerates. Sooner or later infrastructure investment will be required, which requires additional energy."

"The ability to let light crude oil be exported removed a refining differential and equalized the market. However, the excess amount of light crude oil probably hasn't been as substantial due to the past three years of lower prices."

"We are carefully watching the adoption of Electric Vehicles. We are less threatened by market forces than we are by government regulation. The risk to oil demand will come from national and local governments mandating electric vehicle adoption."

"Subsidized wind and solar energy competes with natural gas and will create downward pricing pressure. However, a reduced oil and gas tax base will require renewables to pay their fair share of tax, thereby leveling the playing field over the 10 to 20 year time frame. Electric vehicle growth will be limited for the next 10 years due to inadequate support infrastructure."

Table 1
Summary of Tenth District Energy Conditions, Quarter 4, 2017

	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	32	48	19	13	65	23	12	54	41	52	7	33
Total Revenues	55	29	16	39	70	15	15	56	59	26	15	44
Capital Expenditures					63	23	13	50	53	37	10	43
Supplier Delivery Time	7	82	11	-4	7	79	14	-7	4	82	14	-11
Total Profits	48	32	19	29	59	21	21	38	54	36	11	43
Number of Employees	26	68	6	19	53	33	13	40	34	52	14	21
Employee Hours	29	61	10	19	37	53	10	27	37	53	10	27
Wages and Benefits	23	71	6	16	45	45	10	34	50	50	0	50
Access to Credit	10	81	10	0	13	80	7	7	18	79	4	14
Expected Oil Prices									54	43	4	50
Expected Natural Gas Prices									38	52	10	28
Expected Natural Gas Liquids Prices									33	63	4	30

*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, 2017 to January 5, 2018 and included 31 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

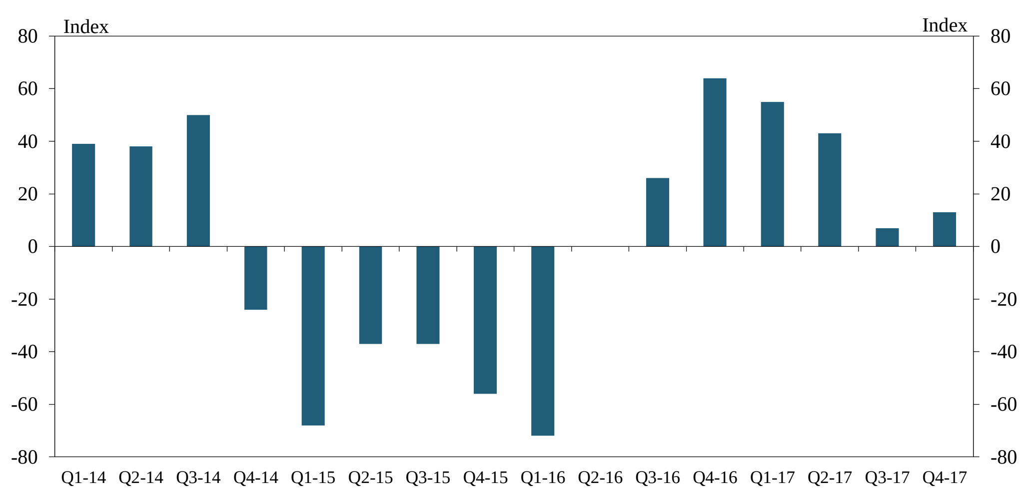

Table 2
Historical Energy Survey Indexes

	Q1'14	Q2'14	Q3'14	Q4'14	Q1'15	Q2'15	Q3'15	Q4'15	Q1'16	Q2'16	Q3'16	Q4'16	Q1'17	Q2'17	Q3'17	Q4'17
Versus a Quarter Ago																
(not seasonally adjusted)																
Drilling/Business Activity	39	38	50	-24	-68	-37	-37	-56	-72	0	26	64	55	43	7	13
Total Revenues	33	57	72	-42	-81	-45	-58	-86	-67	-31	5	62	52	20	23	39
Supplier Delivery Time	-3	12	-15	4	-3	11	6	-6	-9	-3	-8	-7	4	11	-10	-4
Total Profits	31	34	50	-44	-86	-53	-61	-76	-78	-22	-10	42	41	3	21	29
Number of Employees	42	28	41	0	-26	-37	-41	-49	-69	-59	-11	26	31	23	17	19
Employee Hours	20	14	34	-19	-43	-19	-39	-39	-54	-52	-10	20	16	20	0	19
Wages and Benefits	48	34	45	12	0	-16	-30	-33	-50	-37	-22	17	13	20	7	16
Access to Credit	6	15	14	-12	-17	-10	-41	-49	-39	-17	-5	0	3	-3	13	0
Versus a Year Ago																
Drilling/Business Activity	26	19	56	-23	-63	-84	-91	-89	-84	-65	-21	41	59	70	44	54
Total Revenues	53	63	71	-4	-70	-77	-88	-92	-81	-69	-31	15	52	62	37	56
Capital Expenditures	19	30	52	-11	-67	-62	-84	-76	-73	-84	-58	14	43	59	50	50
Supplier Delivery Time	-3	12	-15	8	11	-4	-18	-3	-6	-14	-11	-14	-4	11	-14	-7
Total Profits	38	46	62	-16	-74	-90	-89	-92	-81	-71	-49	23	55	59	21	38
Number of Employees	35	28	67	35	-13	-32	-47	-56	-78	-67	-50	-7	13	31	23	40
Employee Hours	20	11	33	4	-43	-38	-54	-40	-66	-48	-37	3	0	28	10	27
Wages and Benefits	59	38	67	38	3	-28	-25	-26	-47	-42	-33	17	9	31	37	34
Access to Credit	3	11	26	-25	-43	-32	-40	-56	-53	-47	-30	-17	13	-3	20	7
Expected in Six Months																
(not seasonally adjusted)																
Drilling/Business Activity	34	58	46	-83	-53	20	-26	-43	-31	39	21	73	57	26	30	33
Total Revenues	59	74	69	-60	-42	19	-36	-56	-17	26	6	67	52	18	44	44
Capital Expenditures	20	33	44	-64	-67	-3	-41	-67	-50	17	9	79	37	19	37	43
Supplier Delivery Time	-3	4	-11	15	10	-10	-3	-9	-3	-3	-8	-7	11	4	-11	-11
Total Profits	47	59	61	-76	-52	-3	-38	-63	-22	23	5	76	45	12	28	43
Number of Employees	42	50	59	-23	-29	-7	-34	-51	-39	6	-22	32	16	21	20	21
Employee Hours	29	26	39	-48	-26	0	-24	-42	-39	6	-8	28	16	21	17	27
Wages and Benefits	34	32	69	-8	-26	7	-14	-27	-38	-3	3	52	23	7	30	50
Access to Credit	13	29	23	-40	-21	0	-31	-40	-35	0	-6	3	0	4	10	14
Expected Oil Prices	3	24	-23	-52	3	32	20	-9	41	58	49	72	3	4	54	50
Expected Natural Gas Prices	22	30	37	-26	-19	16	11	-15	18	61	44	26	6	3	24	28
Expected Natural Gas Liquids Prices	26	26	-4	-42	-13	10	6	-15	29	59	31	64	14	21	38	30
Special Price Questions																
(averages)																
Profitable WTI Oil Price (per barrel)			$79		$62		$60		$51		$53		$51		$51	
WTI Price to Substantially Increase Drilling						$73		$60		$64		$60		$56		$62
WTI Price Expected in 6 Months													$51	$47	$52	$58
WTI Price Expected in 1 Year													$54	$49	$55	$60
WTI Price Expected in 2 Years													$60	$54	$58	$62
WTI Price Expected in 5 Years													$69	$61	$65	$70
Profitable Natural Gas Price (per million BTU)									$3.29		$3.45		$3.38		$3.05	
Natural Gas Price to Substantially Increase Drilling										$3.65		$3.97		$3.65		$3.59
Henry Hub Price Expected in 6 Months													$2.85	$3.05	$3.01	$2.88
Henry Hub Price Expected in 1 Year													$3.01	$3.06	$3.11	$3.10
Henry Hub Price Expected in 2 Years													$3.22	$3.25	$3.30	$3.30
Henry Hub Price Expected in 5 Years													$3.64	$3.51	$3.73	$3.65

Chart 2. Special Question - What price is currently needed for a substantial increase in drilling to occur 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?

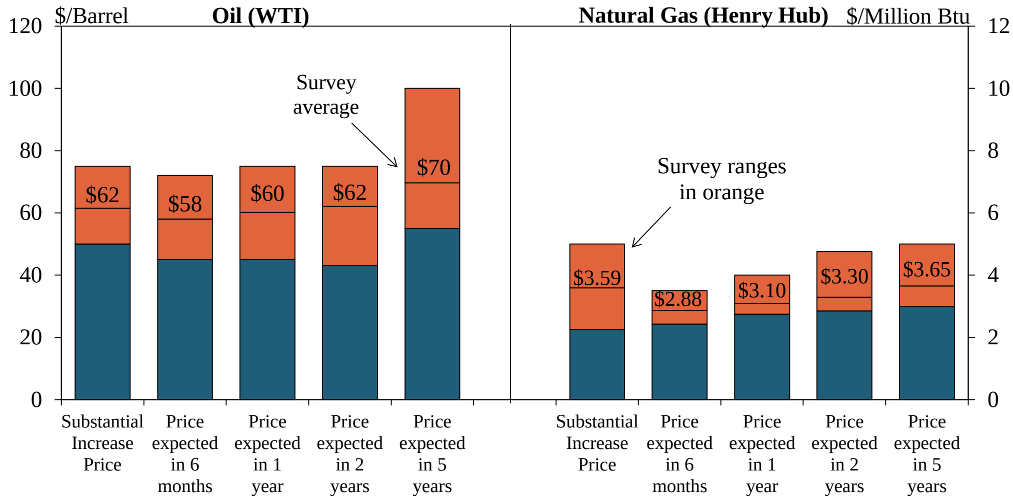

Chart 3. Special Question - How do you expect spending to increase/decrease (in percentage terms) in each of the following categories in 2018 versus 2017?

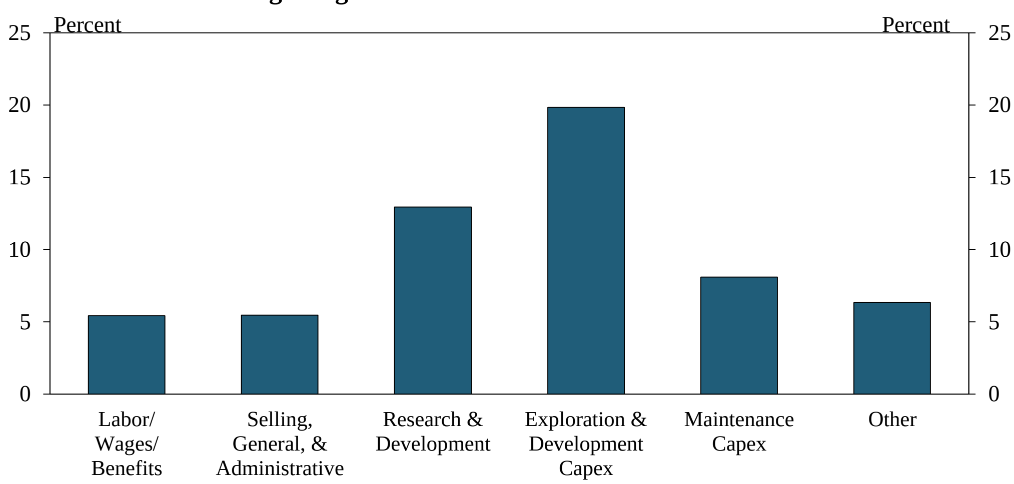

Chart 4. Special Question - What risks does your business face from renewable energy and Electric Vehicles (EVs) within the next 10 to 20 years?