



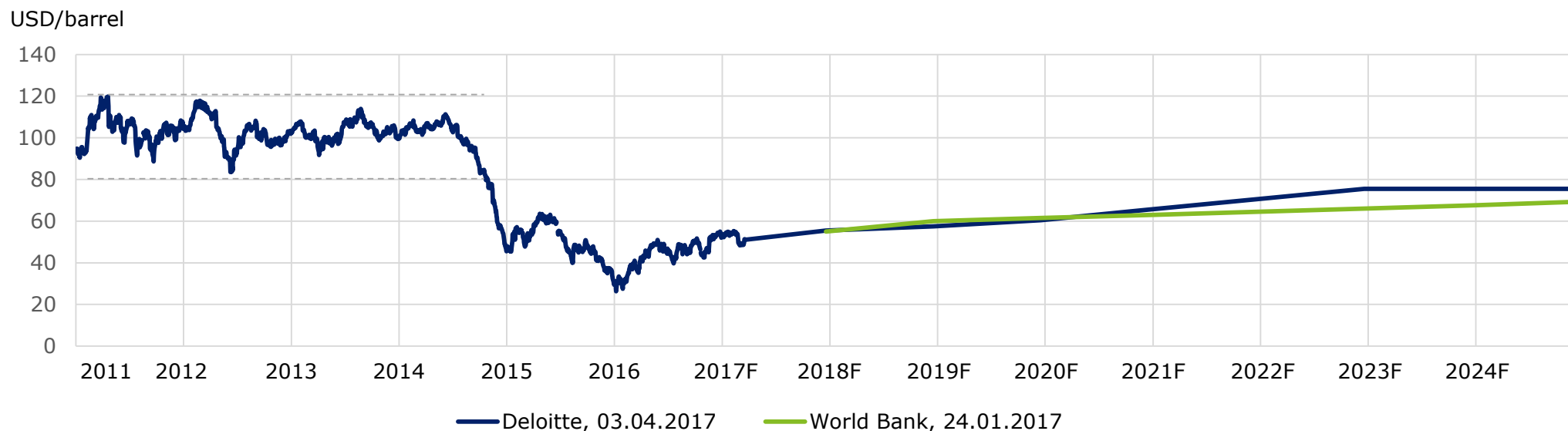
Oilfield Services Market Conditions and Trends 2016

Segments: drilling, well maintenance and workover, geophysics

April 2017

Oil prices remained volatile during 2016. According to experts, the recovery will be a slow, long-term process

Forecast weighted average* oil price



Source: Deloitte and World Bank forecasts

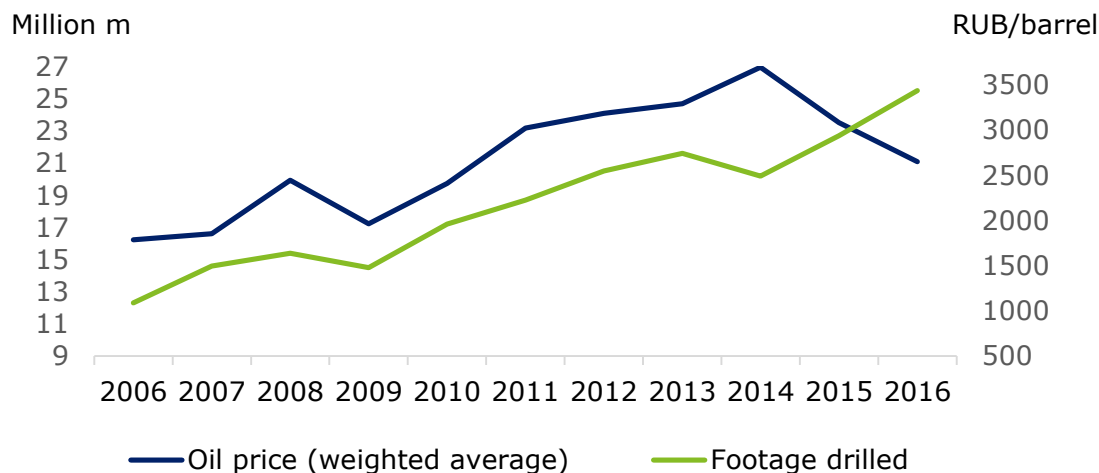
* The weighted average price is a combination of prices for Brent and WTI crude oil taken with equal weights

Highly volatile prices with an outlook for long-term recovery

- Oil prices remained volatile in 2016, with the average price down by 16 percent from 2015
- This volatility has oil and gas companies regularly updating their short- and long-term forecasts for oil prices
- Meanwhile, experts agree that the recovery of oil prices will be slow in the long term. The World Bank does not expect a price of USD 70 per barrel until 2025.

Despite market volatility, 2016 was a record year for Russian companies in terms of footage drilled, which was due to their positive expectations for oil price dynamics

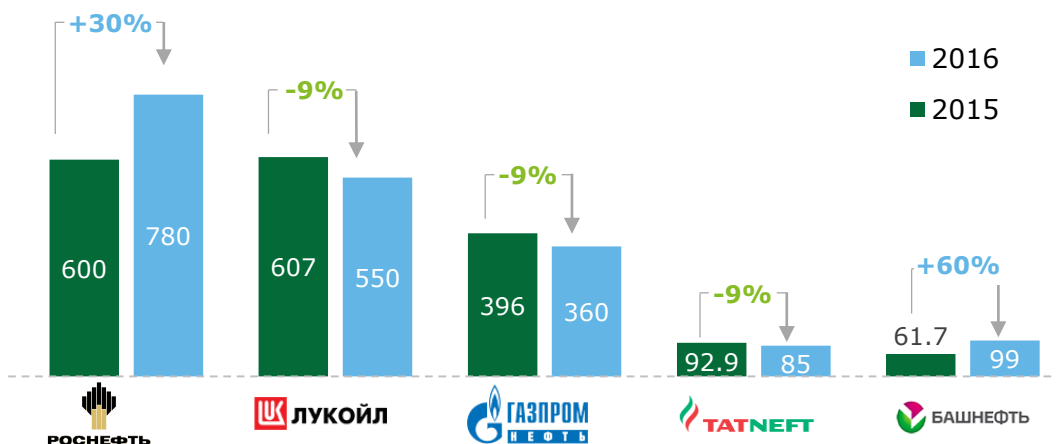
Average annual oil price and drilling footage



Positive expectations of market participants

- The year 2016 saw a continued disruption in the correlation between oil prices and drilling footage. The total drilling footage was up by 12 percent even though average prices were down by 16 percent from 2015.
- This increase was primarily due to the market having positive price expectations. According to Deloitte's 2016 Russian Oil and Gas Outlook Survey based on interviews with executives from Russian enterprises, 61 percent of experts expected a rise in oil prices as early as 2016.

Capital investment plans for 2016, RUB billion



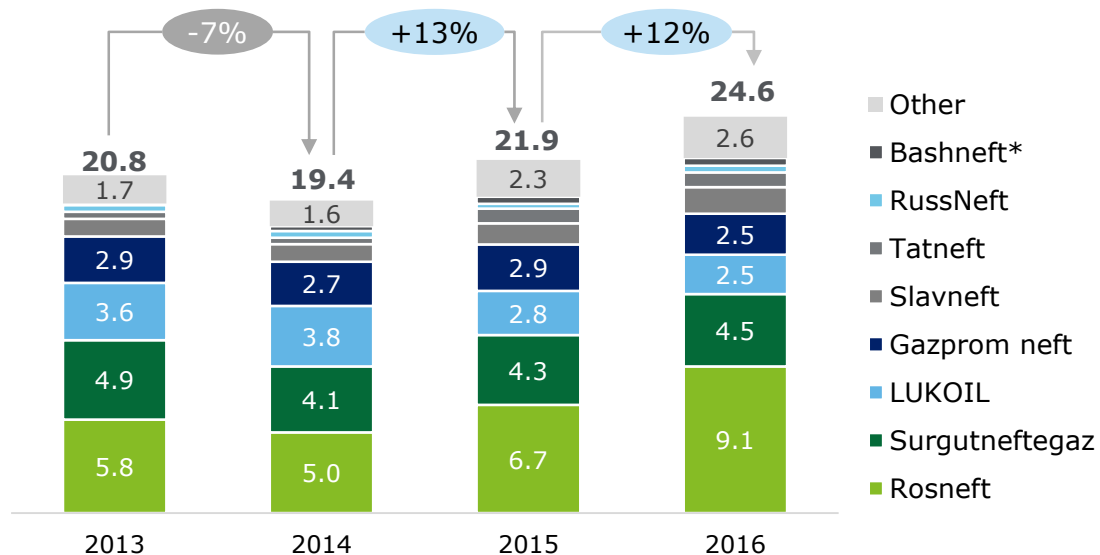
Controversial trends in capital investment plans

- With the growing uncertainty on the market becoming one of the reasons why there is no general trend among the largest vertically integrated oil companies in terms of adjusting their capital investments, most market leaders did not seem to be planning any sharp cuts to capital investments, which has served as evidence of the absence of strongly pronounced negative expectations.
- According to the 2016 Russian Oil and Gas Outlook Survey, in the beginning of 2016, 55 percent of experts agreed that capital flow into the Russian oil and gas sector would not decline for at least the next five years, with the upstream segment expected to take the lead.

Source: Companies' data; the investment amounts include foreign assets

The overall optimism on the market has resulted in production drilling and exploration drilling increasing by 12 percent and 20 percent, respectively

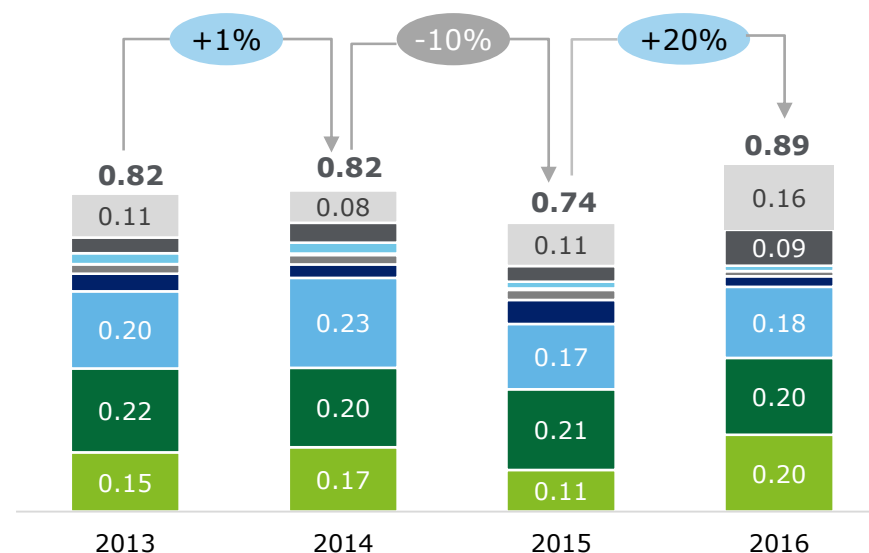
Production drilling, million m



Note: * Bashneft is presented separately from Rosneft to enable comparisons between periods.
Source: "Oil and Gas Vertical" journal, CDU TEK, company data

- Overall exploration drilling in 2016 was up by 12 percent to 24.6 million m, from 21.9 million m in 2015.
- This increase in production drilling was seen for most oil majors, particularly for Rosneft where the number went up by 36 percent.
- While RussNeft and Slavneft have also enjoyed a rise in drilling rates, their impact on the overall drilling performance is not so notable due to their small market share. Surgutneftegaz, Bashneft, Tatneft along with small and medium size oil producers have also contributed to this positive dynamic in drilling.
- LUKOIL and Gazprom Neft are among the companies that have reduced their drilling operations.

Exploration drilling, million m

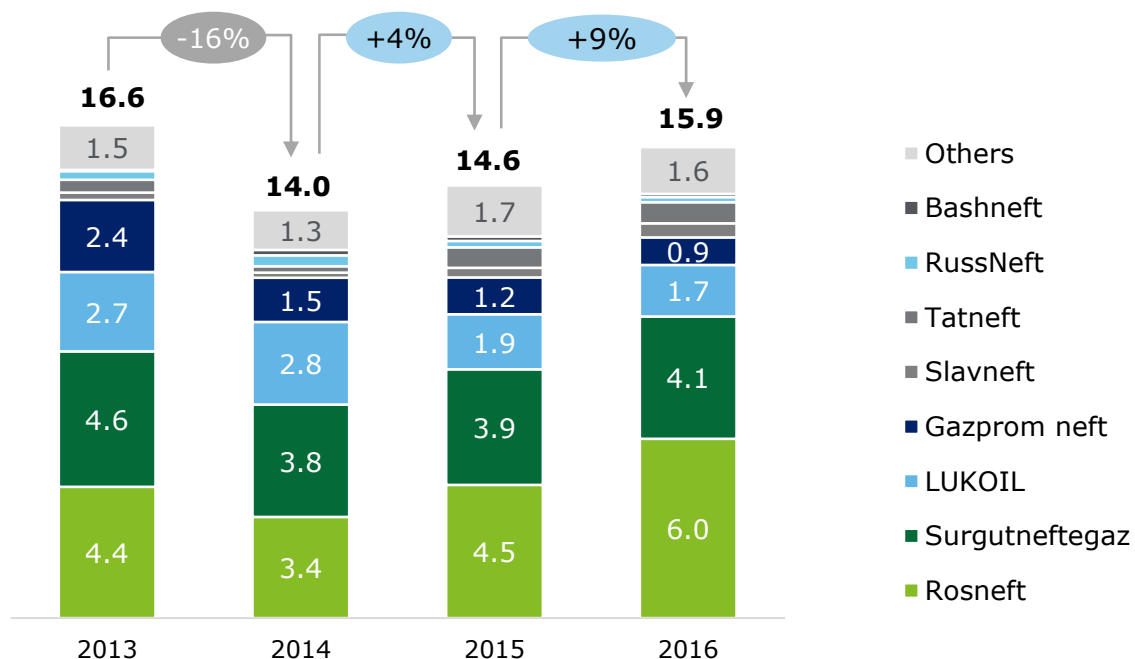


Source: "Oil and Gas Vertical" journal, CDU TEK, company data

- In 2016, exploration drilling reached 887 thousand m, up by 20 percent (147 thousand m) from 2015.
- Among the companies analyzed, Rosneft has posted a significant growth in exploration drilling. In 2015, Rosneft reduced exploration drilling by 35 percent. However, 2016 saw the company boost this activity by 80 percent. LUKOIL and Bashneft along with mid- and small-size oil producers have also attained an increase in drilling operations.
- A significant reduction in exploration drilling came from RussNeft, Gazprom Neft, Slavneft and Tatneft, which was likely due to the uncertainty on the market and the suspended participation in an expensive exploration project.

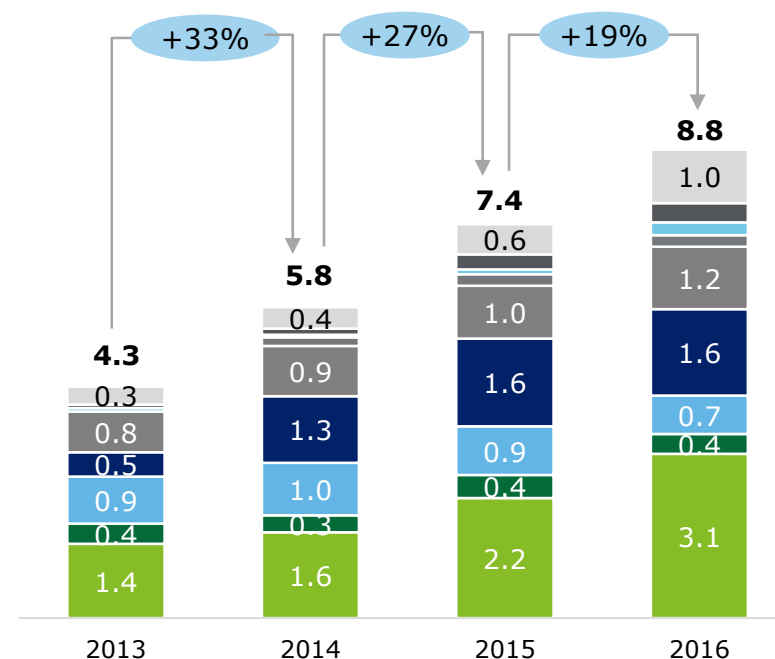
Even though horizontal drilling still remains a driver for footage drilled it has continued to decrease, the growth rate moderated to 19 percent in 2016 from 33 percent in 2014

Directional drilling, million m



Source: "Oil and Gas Vertical" journal, CDU TEK, company data

Horizontal drilling, million m

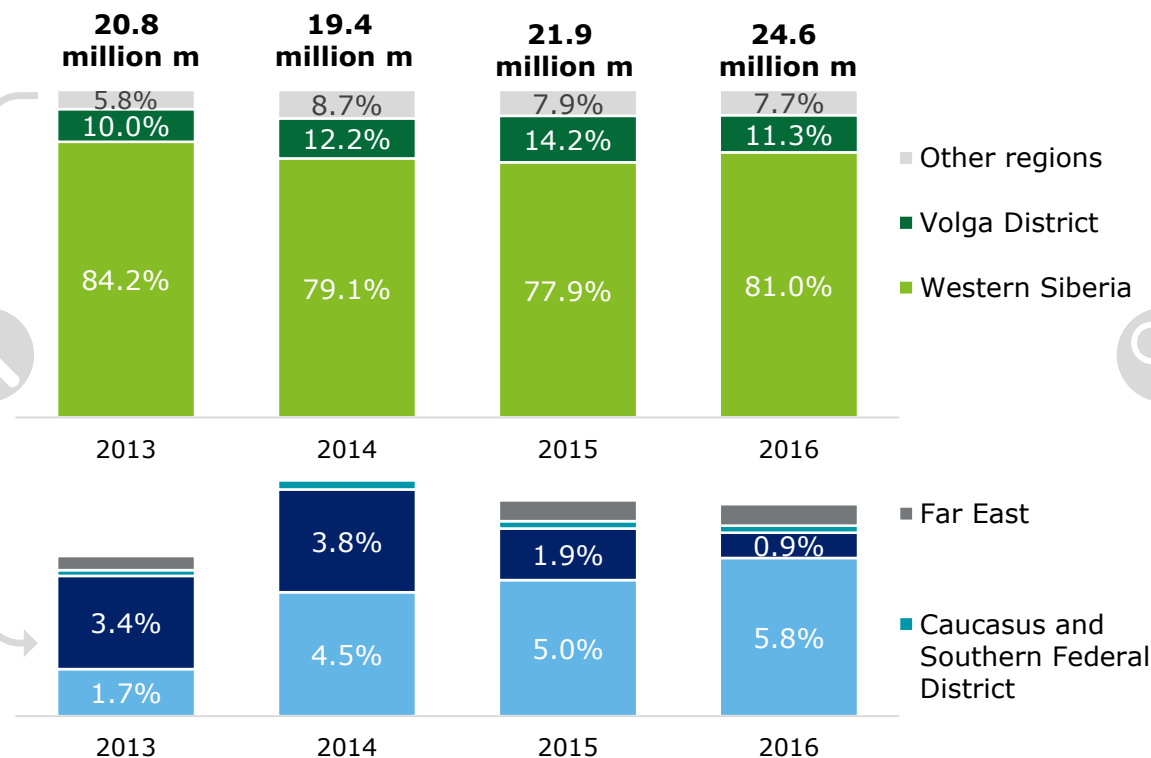


Source: "Oil and Gas Vertical" journal, CDU TEK, company data

- In 2016, directional drilling accounted for 15.9 million m, reaching the pre-crisis level of 2013 and posting a growth of 9 percent from 2015.
- Rosneft accounts for a major portion of this growth, with a 33 percent increase. Surgutneftegaz saw a 5 percent increase. Meanwhile, LUKOIL, Gazprom Neft along with small- and medium-size oil companies in the aggregate had reductions in their directional drilling activities.
- In 2016, the market continued the trend from 2014, with most key players continuing to ramp up horizontal drilling. Even though this type of drilling still remains a driver in footage drilled the growth rate moderated to 19 percent in 2016 from 33 percent in 2014
- With a growth of 41 percent in horizontal drilling, Rosneft has made a major contribution to the total increase. Bashneft, RussNeft and Slavneft along with small- and medium-size oil companies in the aggregate have also posted a growth, compared to the previous year. At the same time, LUKOIL and Surgutneftegaz have reduced their horizontal drilling footage considerably.

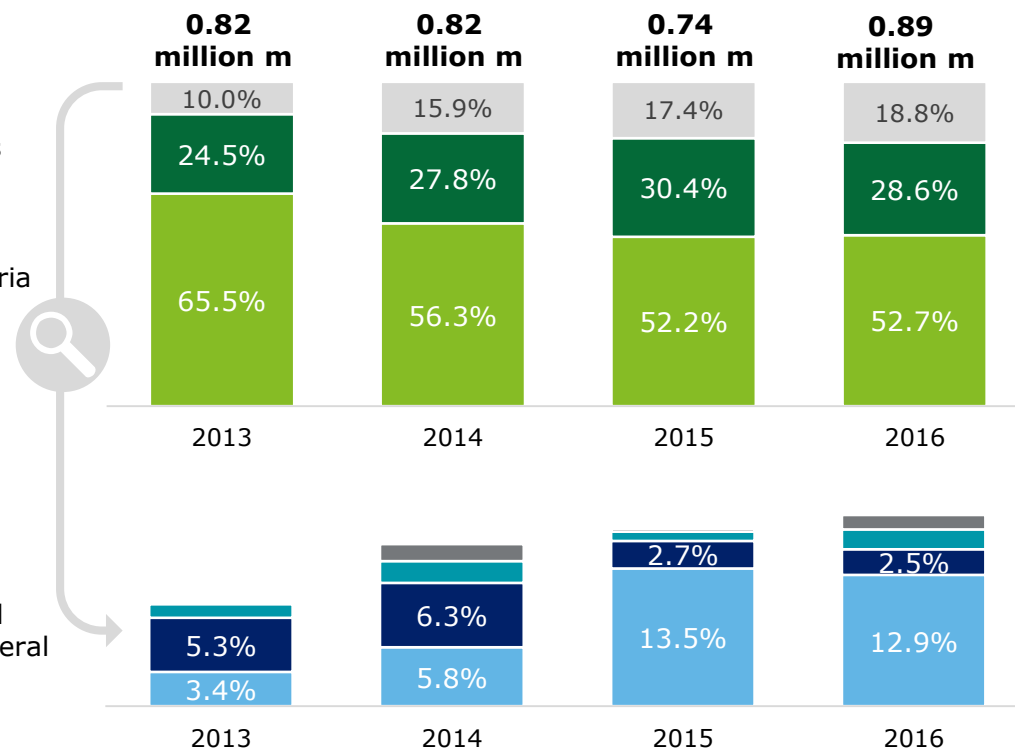
Western Siberia remains a leader in drilling volumes; however, the share of other regions has grown considerably over 2014-2016

Production drilling by region



Source: "Oil and Gas Vertical" journal, CDU TEK, Deloitte analysis

Exploration drilling by region

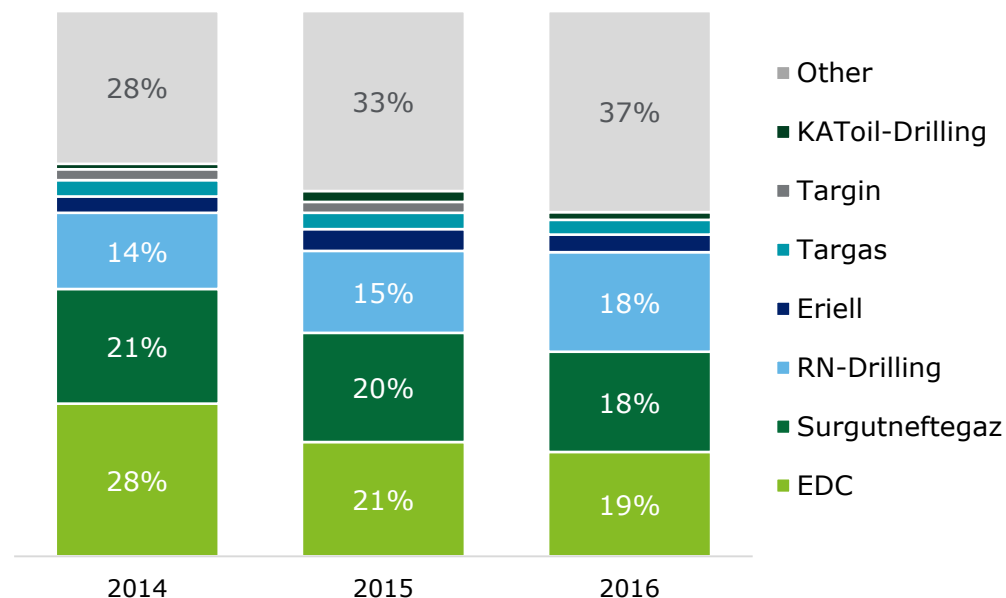


Source: "Oil and Gas Vertical" journal, CDU TEK, Deloitte analysis

- Western Siberia is still Russia's main oil region accounting for 81 percent of footage in production drilling. Stable growth in production drilling has been continuously observed in Eastern Siberia; the period 2013-2016 saw a triple growth in footage. In 2016, this growth accounted for 5.8 percent of the overall production drilling in Russia. At the same time, the Timan-Pechora Region experienced a reduction demonstrating 0.9 percent in 2016 from 3.8 percent in 2014.
- With 52.7 percent of the overall exploration drilling, Western Siberia continues as an exploration drilling leader. Drilling in Eastern Siberia grew from 3.4 percent in 2013 to 12.9 percent in 2016.

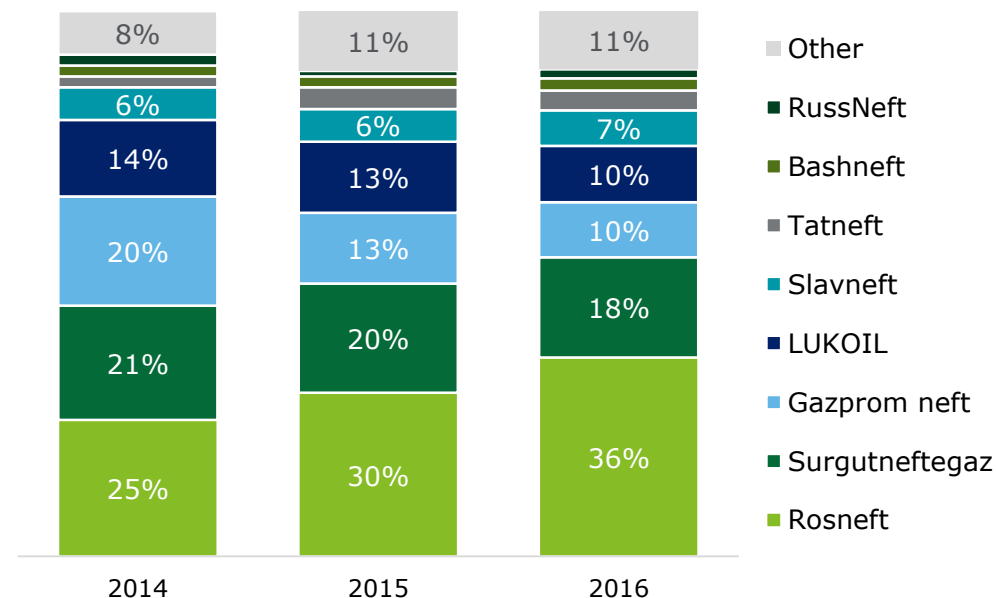
Rosneft has also seen a growth in in-house drilling due to the acquisition of Targin, a company that accounts for a significant portion of services provided for Bashneft (acquired by Rosneft earlier)

**Supply on the drilling market
(based on footage drilled)**



Source: Deloitte estimates, company data

**Demand on the drilling market
(based on footage drilled)**

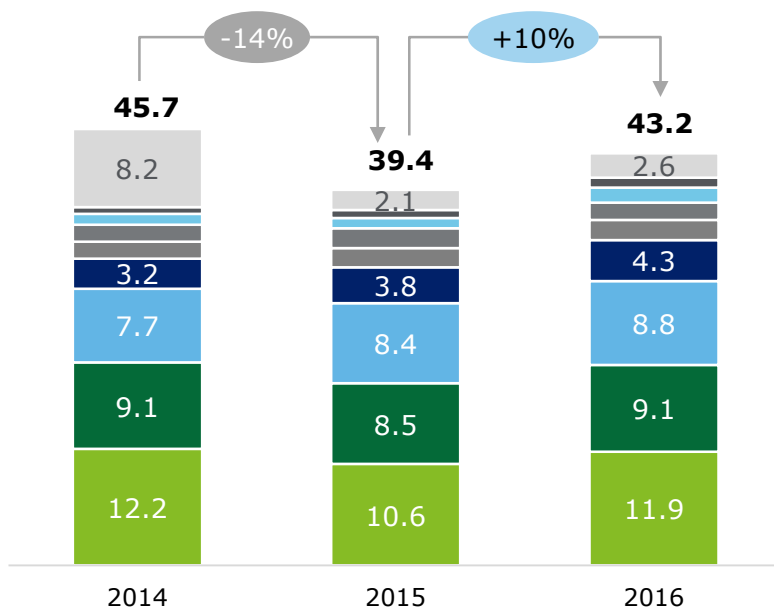


Source: CDU TEK

- Rosneft, Surgutneftegaz, Gazprom Neft and LUKOIL, Russia's four largest oil companies, continue to contribute to more than 70 percent of the demand on the drilling market.
- As for the supply side, according to estimates by Deloitte, EDC remains the only large independent drilling provider on the drilling market. However, its market share experienced a reduction to 19 percent in 2016, from 28 percent in 2014.
- In 2016, one of the most notable effects on the structure of the oil service market was the acquisition by Rosneft of a controlling stake in Bashneft and 100 percent stake in Targin, an oilfield service provider accounting for more than 70 percent of the drilling services provided for Bashneft, a company acquired by Rosneft earlier.
- As a result, Rosneft has expanded the drilling equipment assets by 19 percent. With this, the share of in-house drilling services is expected to grow to 60 percent.

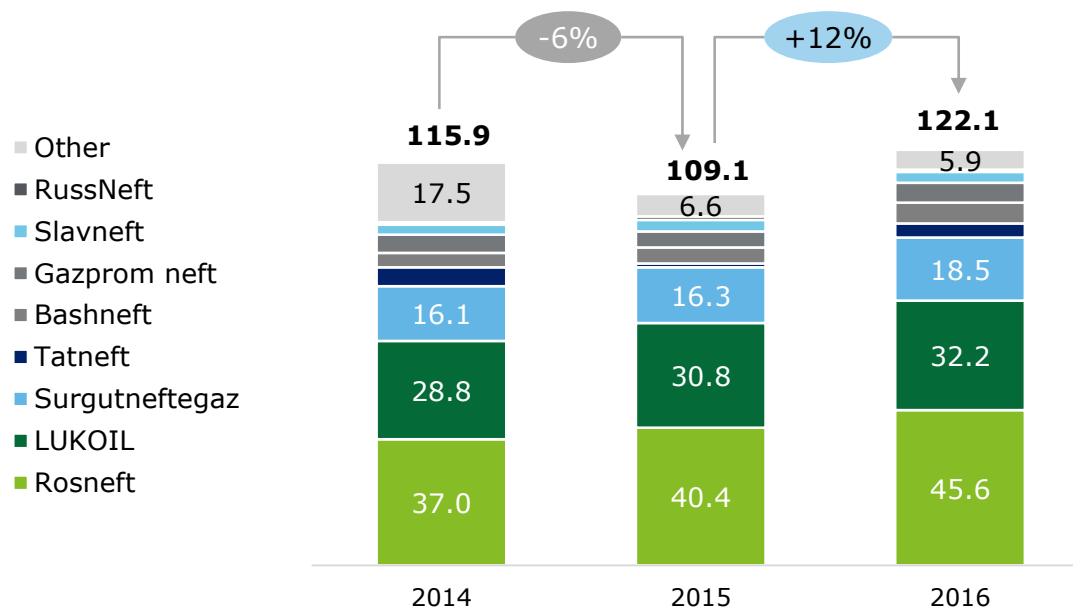
The rise in expenses for well maintenance and workover is due to the desire to increase oil recovery at existing oil deposits

Well maintenance costs, billion RUB



Source: CDU TEK

Workover costs, billion RUB

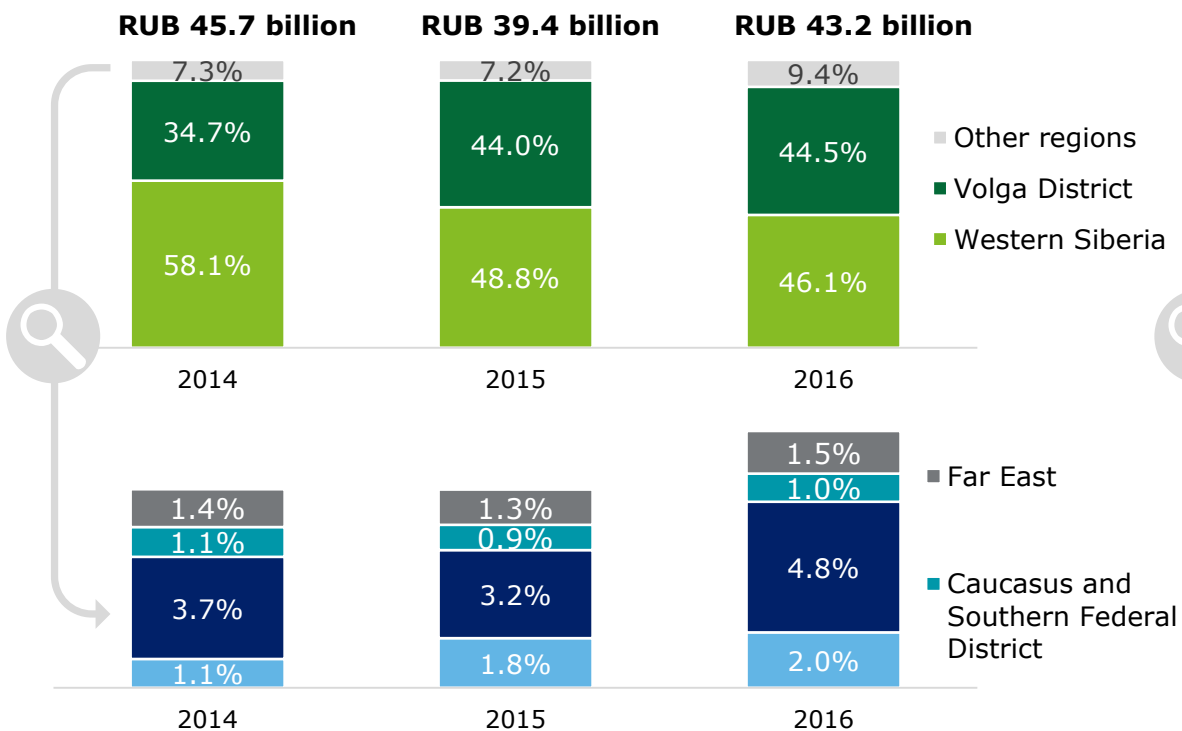


Source: CDU TEK

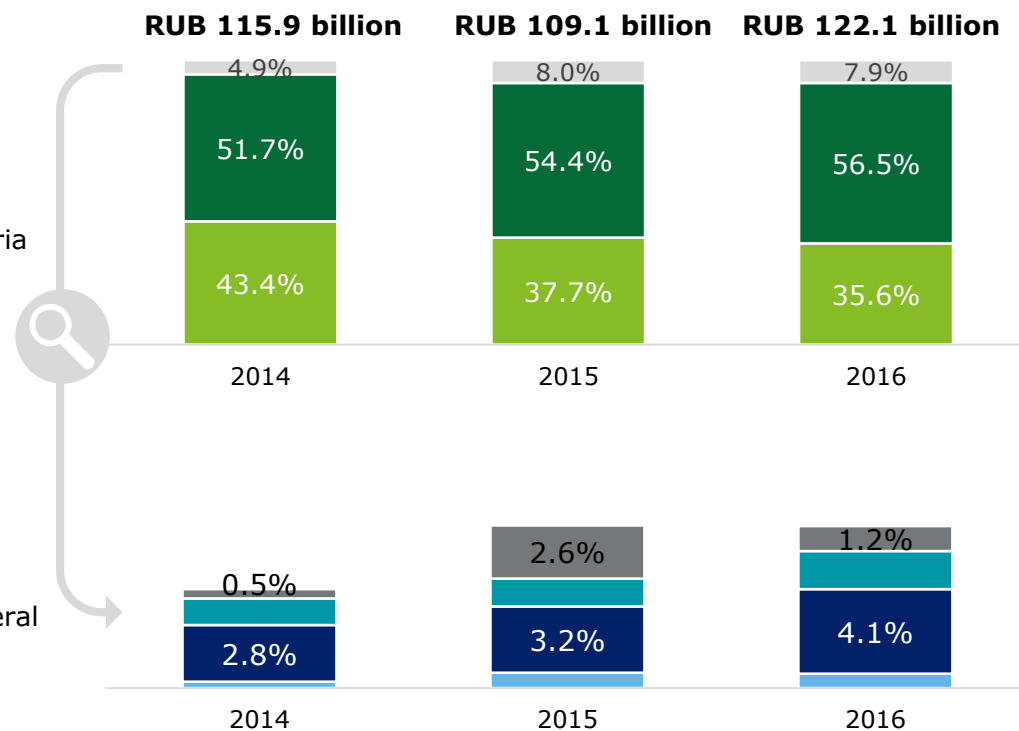
- In 2016, total maintenance costs increased by 10 percent for well maintenance services and by 12 percent for workover services, compared to 2015. However, given the reduction in these costs in 2015 this increase is not so significant if compared to 2014. As for well maintenance services in 2016, this figure remains lower than in 2014 while workover services saw a rather modest rise of 5 percent from 2014.
- The growth in service costs was driven by:
 - ✓ A growth in the number and complexity of wells (horizontal wells and horizontal sidetrack wellbores) due to changing production conditions
 - ✓ The aging of well stock, including a growth in water cuts
 - ✓ An increase in the technical complexity of certain workover processes
- The well maintenance and workover segments are characterised by a high concentration of demand, with only three companies Rosneft, LUKOIL and Surgutneftegaz accounting for 70 to 80 percent of the overall demand.
- Following the acquisition of Targin, the number of maintenance and workover teams at Rosneft has increased by 30 percent, with the share of in-house maintenance services expected to increase to 40 percent.

Western Siberia is losing its share in well maintenance and workover costs. In 2015-2016, investment in maintenance in the Volga District and Eastern Siberia grew considerably

Well maintenance distribution by region



Workover distribution by region



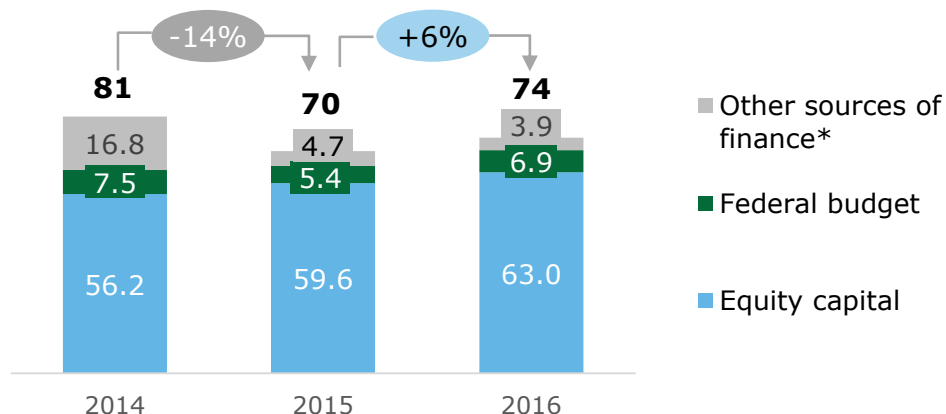
Source: CDU TEK, Deloitte analysis

Source: CDU TEK, * Deloitte analysis

- The distribution of well maintenance services by region has changed significantly over the past two years.
- In 2014 Western Siberia was the leading spender in this segment. However, in 2015 Western Siberia significantly decreased its share in favor of the Volga District and the Timan-Pechora Region. This trend continued into 2016, with Western Siberia seeing its share decline from 58 percent to 46 percent by the year end, which is down by 12 percent from 2014. At the same time, the Volga District and the Timan-Pechora Region saw their total share increase by almost 8 percent. The distribution of other regions by aggregate well maintenance costs changed insignificantly.
- The regional structure of workover costs has also changed notably over past two years, but not as much as in the case of well maintenance spending. The Volga District saw its share in the regional structure of workover costs increase by 5 percent while the share of Western Siberia decreased by about 8 percent. The shares of the Caucasus, Timan-Pechora and Eastern Siberia in the investment in workover increased insignificantly.

The slump in oil prices in 2015 triggered a decrease in geophysical survey spending by the government and investors, and there was also a reduction in geophysical costs as part of offshore projects

Geophysical survey spending dynamics in the mining and oil and gas industries, RUB billion



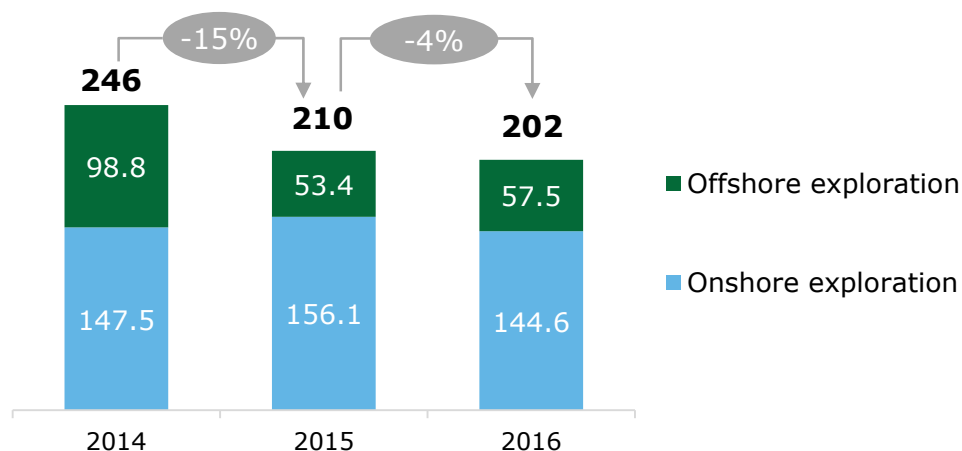
Source: The Federal Agency on Subsoil Usage; Deloitte analysis

Geophysical survey costs

- In 2016, geophysical services (Geographic Information System (GIS) and seismic survey) reached RUB 74 billion, up by 6 percent from 2015 and down by 9 percent from 2014.
- Economic sanctions still remain a constraint on the inflow of capital.
- Reduction of governmental expenses has resulted from the expected reduction of the federal budget due to budget saving measures.
- Investment is expected to stabilise in 2017.

* Regional budgets of the Russian Federation, credits, funds received from Russian and foreign investors

Territorial structure of the exploration market in the oil and gas industry, RUB billion



Source: The Federal Agency on Subsoil Usage; Deloitte analysis

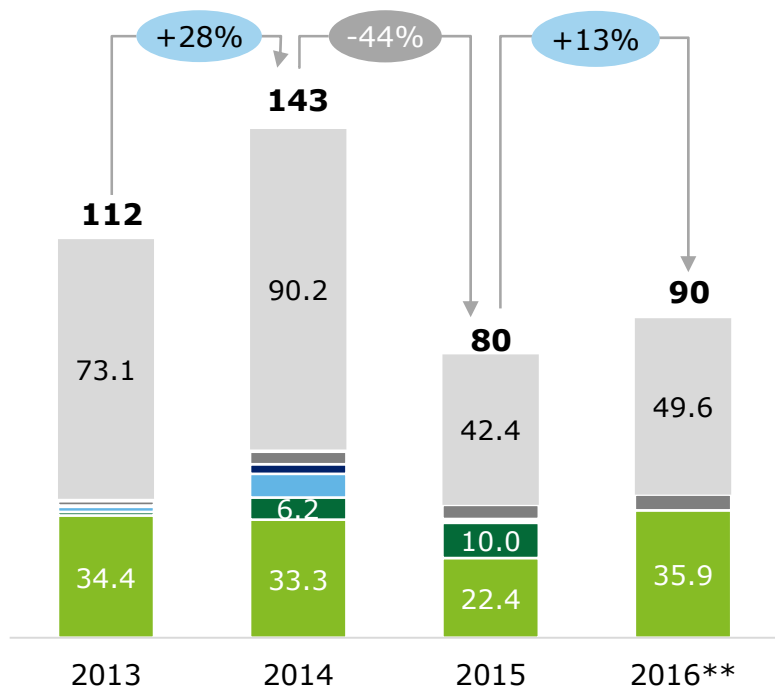
Offshore exploration reduction

- In 2015, exploration costs saw a significant decrease due to cost reductions on offshore projects down by 46 percent from 2014.
- This was primarily driven by offshore projects put on hold as oil prices went down. These were suspended for less expensive projects with more quickly achievable results.
- In 2016, exploration investment continued to shrink, with overall exploration spending down by 4 percent compared to 2015 as a result of the reduction in onshore exploration.

Note: Costs are exclusive of VAT

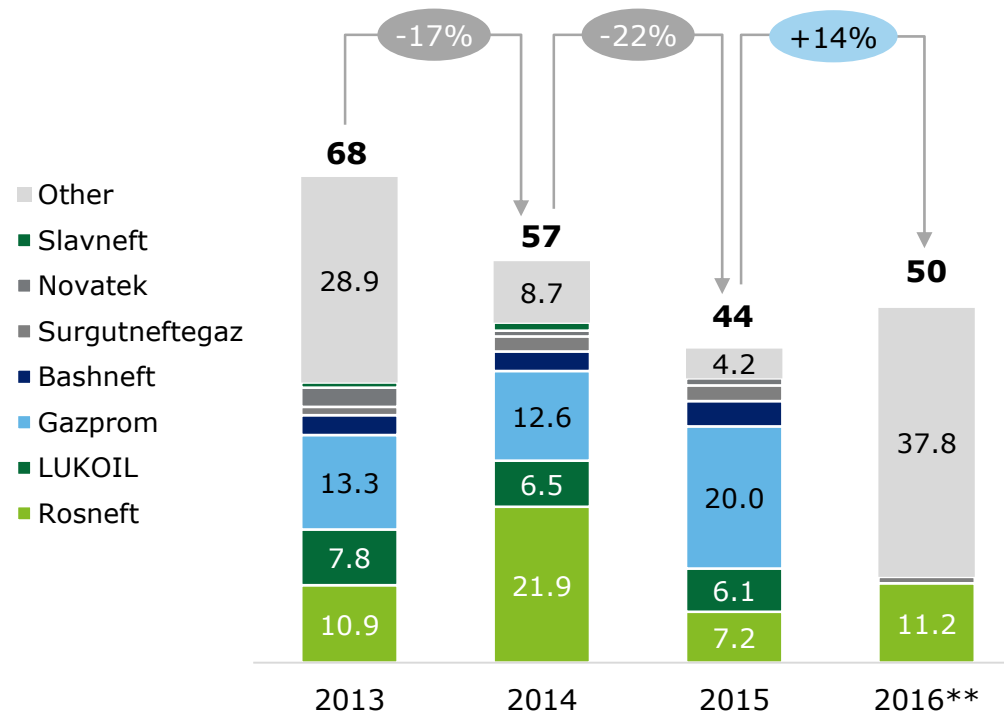
In 2015, the seismic exploration market saw a significant slowdown

Seismic exploration 2D*, line km



Source: Company reports, the Federal Agency for Mineral Resources

Seismic exploration 3D*, sq. km



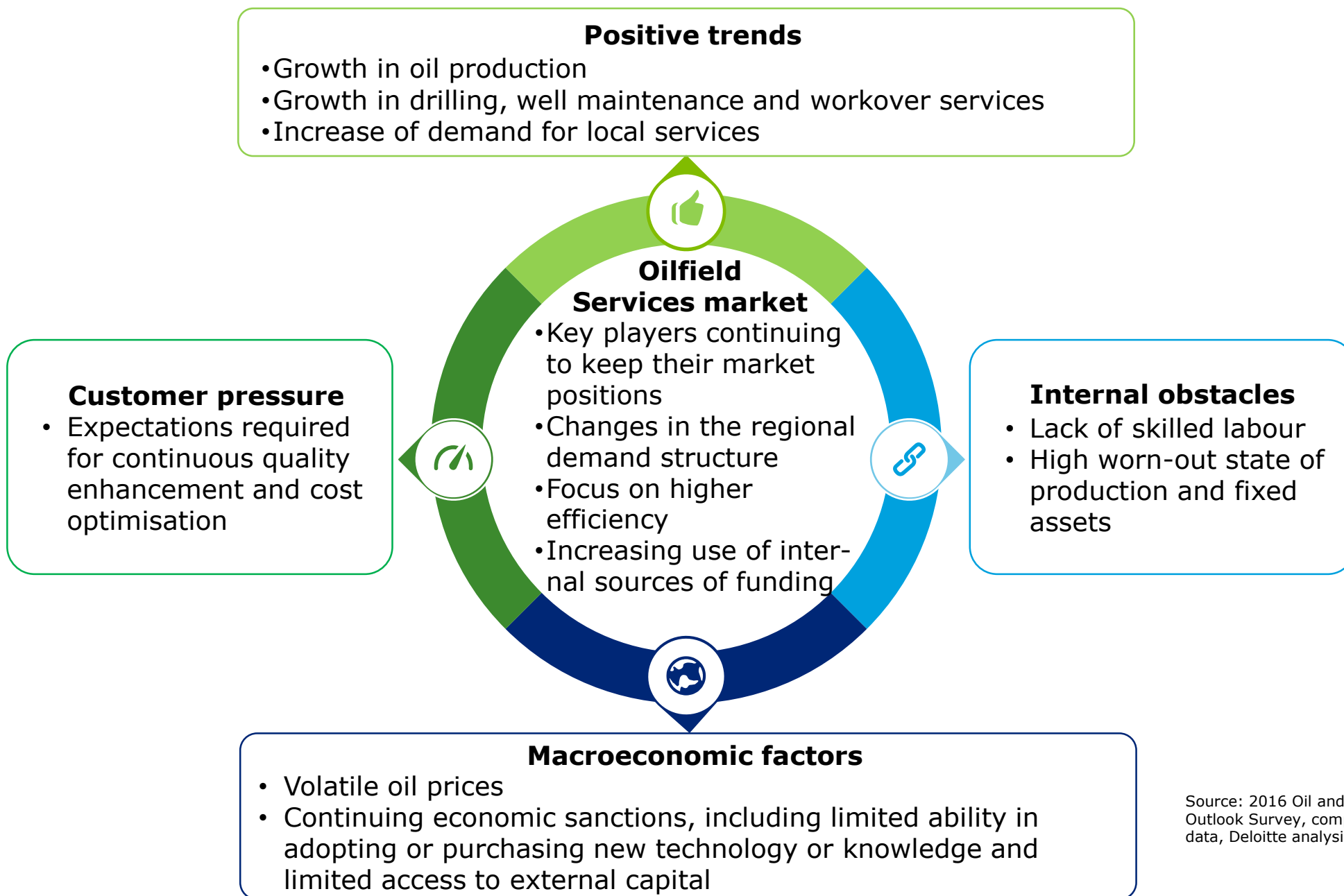
Source: Company reports, the Federal Agency for Mineral Resources

* - The market data includes oil and gas as well as mining industries

** - As regards the data for 2016, Rosneft and Surgutneftegaz are the only companies shown separately. Other companies are included in "Other" due to unavailable data.

- In 2015, the seismic exploration market saw a significant slowdown, with 2D seismic services down by 44 % and 3D seismic services down by 22 percent.
- With a 40 percent share of the seismic segment in 2016, Rosneft is the key demand booster on the 2D seismic exploration market.

Trends in the Russian oilfield services market



Source: 2016 Oil and Gas Outlook Survey, company data, Deloitte analysis



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