Overview of the Russian oilfield services market – 2019
Deloitte CIS Research Center
Moscow
Foreword

We are pleased to present you with the full version of our analytical report. This report is produced annually (since 2014) and seeks to provide a comprehensive analysis of the oilfield services market.

The report offers an overview of the market performance in 2018, expert opinions, strategies pursued by multinational players, and outlines government support for the oilfield services industry in selected countries.

The key findings of our research will be published by leading Russian media outlets.

If you have any questions regarding this report and/or the professional services offered by Deloitte CIS, please contact us.

The OFS industry posted mixed results in 2018. On one hand, the trends observed in the previous years strengthened, on the other hand, the market posted unexpected results.

Russia remains part of the OPEC+ accord aimed at cutting oil production. This effort definitely constrains demand for OFS but ensures favorable pricing environment for doing business and signing contracts with OFS companies.

The key trend is a massive increase in horizontal drilling which accounts for almost 50 percent of all production drilling, which has a significant impact on quantitative and structural dimensions of the OFS market.

Similarly to other segments of economy, the OFS industry faces challenges which have a technology, geopolitical, economic, and institutional nature and relate, among others, to the oil market. At the same time, the industry remains capable of meeting higher demand and launching new products and services.
Key findings

Factors shaping the industry

1. Oil prices

+26%

The year 2018 saw a growth trend in oil prices measured in USD, with an average increase of 26 percent since 2017.

Average oil price forecasts for 2019 range from USD 55–70 per barrel, but generally remain within a corridor of USD 60–65 per barrel.

2. OPEC+

11.2 million bpd

The OPEC+ deal cuts the oil output for Russia in 1H 2019 by 230 thousand barrels per day as compared to October 2018.

3. Oil production

555.9 million t

In 2018, oil production in Russia was the highest in the country’s modern history.

Key segment performance in 2018

Production drilling meterage has seen no movements since 2017.

Exploration drilling meterage was up 8 percent compared with 2017.

Vertical drilling meterage decreased by 13 percent from 2017.

Horizontal drilling meterage was up 19 percent versus 2017.

Well workover costs increased by 49 percent from 2017.

Underground well servicing costs grew by 13 percent versus 2017.

The number of hydraulic fracturing operations declined by 4 percent compared with 2017.

The hydraulic fracturing yield was down 3 percent since 2017.
Overview of government support for the industry in selected countries

A review of the government support efforts in the Chinese, Norwegian, and US oilfield services markets shows that there is no one-size-fits-all solution to propel the market forward.

However, we see a high level of government support in three key areas:

• Investments in research and development (R&D)
• Investments in talent training
• Support for foreign operations

2019 trends

• Sustainable growth of oil production in smaller oil companies as the percentage of total oil output is a positive signal both for the oil and gas industry and independent OFS players.
• The explosive growth in horizontal drilling continues. By end-2018, the horizontal drilling accounted for almost a half of the total drilling meterage (48 percent).
• The role of supervision services rose in such market segments as drilling, well-services, hydraulic fracturing, and seismic imaging.
Factors shaping the industry

The OPEC+ agreement

The OPEC+ agreement to cut oil output was signed in late 2016 between the OPEC and several non-OPEC countries including Russia. The purpose of the deal was to boost oil prices by reducing the oil supply by a combined 1.7–1.8 million barrels per day.

At the time the agreement was made, the price of oil had dipped below USD 50 per barrel. However, against the backdrop of the OPEC+ agreement, oil prices extended above USD 50 per barrel in December 2016 and almost reached USD 55 per barrel by the year end.

Production cuts have been in effect since 1 January 2017. In the first year, the average daily output withdrawn from the market was 1.7 million barrels per day. By the end of 2017, the price of oil climbed to USD 65 per barrel.

In the first five months of 2018, production cuts exceeded the agreed levels, averaging 2.3 million barrels per day. In June–December 2018, the OPEC parties returned to the average daily cuts of 1.7 million barrels per day.

After that, oil prices continued to rise gradually, reaching a local peak of above USD 80 per barrel in October 2018.

This fueled a dynamic increase in US oil production, which was largely due to shale development. Shale projects have a short investment cycle lasting only a few months. Higher oil prices have boosted this segment further. By June 2018, the increase in shale production since the adoption of OPEC+ had exceeded the established oil supply limit.

Source: INP RAN, Bloomberg, EIA
In December 2018, the parties to OPEC+ agreed to revise the original level of cuts to 1.2 million barrels per day. This target will remain relevant throughout the 1H of 2019. The next meeting of the joint OPEC and non-OPEC ministerial committee is scheduled for April.

Russia and OPEC+

Under the OPEC+ agreement, the 2017–2018 target for Russia was to cut oil output by 300 thousand barrels per day as compared with October 2016, i.e. to 10.9 million barrels per day.

The country achieved this target by May 2017 and maintained it until May 2018. From June 2018 onward, Russia, like some of the other parties, has been increasing its production, taking advantage of persistently high prices and the above-forecast reduction in output of such oil producing markets as Venezuela, Angola, and Mexico. As a result, the country’s average daily output totaled 11.16 million barrels per day in 2018 versus 10.98 million barrels per day in 2017.

After the revision of the OPEC+ terms, Russia was given a new target for 1H 2019 01 – 11.2 million barrels per day, or a 230 thousand barrels-per-day reduction from October 2018.

If the country fully meets its OPEC+ commitments, it may be able to push its production levels up by 0.4 percent by late 2019.

The average oil price forecasts for 2019 range from USD 55–70 per barrel, but most are in the range of USD 60–65 per barrel.

* Calculated by using a coefficient: one ton of oil equals 7.33 barrels of oil
Source: INP RAN, Bloomberg, EIA
Oil prices

Weighted average* oil price, USD/bbls

* The weighted average price is a combination of prices for Brent and WTI, each with a weight corresponding to a market share.

Oil price forecast, USD/bbls

<table>
<thead>
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<th>2019</th>
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</tr>
</thead>
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<td>EIU</td>
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<tr>
<td>WorldBank</td>
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</table>

In 2019, geopolitical risks arising from US foreign policy toward Iran will continue, preventing further price dips. The US-China trade war also remains an important issue: a potential escalation of this dispute may hinder demand for oil in both countries.

According to the EIU, oil prices will be around USD 66 per barrel in 2019 and may drop to USD 61 per barrel in 2020 due to declining GDP growth in the United States and China, which may adversely affect oil demand globally.

US administration policy was one of the key drivers affecting global oil prices in 2018.

In early October 2018, the re-introduction of US sanctions against Iran sent the Brent crude oil price up above USD 85 per barrel. In November, the Trump administration revised its course of action, granting waivers to some major importers of Iranian oil.

Fears about an oversaturated market incited a 40+ percent decline in oil prices in the period from early October to late December 2018.
Market dynamics

Oil production and production drilling

Drilling efficiency in 2018 compared to 2017 increased by more than a percent (1.7%). But the cumulative average annual growth rate of tons per meter of production drilling (CAGR) from 2013 to 2018 is -3.6%, which indicates a gradual decrease in drilling efficiency over the last 6 years.

The company with the highest CAGR indicator was Gazprom Neft (11.9%), with the smallest – Bashneft (-21.3%).

Bashneft (65.9 t/m) and Tatneft (50.1 t/m) are the companies with highest average drilling efficiency, and with the smallest – Slavneft (11.9 t/m).

Number of license-based operations

Since 2012, there has been a gradual decrease in the number of operations based on license obligations. In 2018, the number of licenses was 392, down 14 percent from 2017.
Production in the Russian Federation

- In 2018, oil production in Russia totaled 555.9 million tonnes, demonstrating a YoY growth of 1.7 percent, which is a record high in the country's modern history.

- The Western Siberia Oil and Gas Province (OGP) accounts for 58 percent of the national oil production.

- With an output of 194.2 million tonnes (a 2.9 percent increase YoY), Rosneft continues to be a leader in terms of production levels.

- Bashneft and Slavneft were down by 8.0 percent and 3.4 percent, respectively.

Over the past five years, minor players have grown their share of oil production in Russia. In 2018, they accounted for nearly 12 percent of the total oil produced domestically.

- In 2018, their total output amounted to 65.5 million tonnes, demonstrating a 2.5 percent increase as compared with 2017. The cumulative average annual growth rate (CAGR) is 6.6%.

- The largest increase (13.2 percent) was recorded by the Production Sharing Agreement (PSA) operators, which achieved a combined output of 18.7 million tonnes.

Changes in the production shares of minor oil companies, %

* Next and everywhere in the analytics, Bashneft is shown separately from Rosneft in accordance with the analysis methodology

Source: INP RAN, company data, Deloitte analysis
In 2019, conditions for further oil production increases in Russia remain in place and stem from a number of factors including the targets set by OPEC+ and enabling production increases, investments in some companies allowing them to implement new projects, as well as favorable macroeconomic and fiscal environment in the upstream segment. Smaller upstream players deliver sustainable increases in oil production and claim a higher share of national oil output. These trends shape the future of the lucrative OFS market.

Andrey Kolpakov
Senior Researcher at the Institute for Scientific Forecasting of the Russian Academy of Sciences

Source: INP RAN, company data, Deloitte analysis
The oil and gas industry evolves in line with the current economic trends. The ongoing price volatility deters investors. The challenging global market environment makes hampers development plans, and the prerequisites for long-term development have changed, too.

The major market players lost ground and are no longer in a privileged position among oil producers. The US smaller and medium-size shale oil producers showed they are resilient enough to compete with capital intensive deep-water and oil sand projects launched by major vertically integrated oil companies. The oil and gas industry performance is being affected by deteriorating reserve replacement trends, declining oil prices, trade sanctions, high inflation, and other macroeconomic risks.

- Reserve replacement trends deteriorate on the back of reduced exploration as the largest oil and gas provinces enter natural depletion stages, on one hand, and the lack of economic incentives for increasing the reserve life of developed oilfields through extending the period of viable operation and enhancing oil recovery, on the other hand.

- Lower oil prices, trade sanctions, high real inflation, and other macroeconomic drivers affected the current tender policies in the upstream which are aimed mainly at minimizing procurement prices. They also resulted in tighter agreement terms and lengthier service payment periods.

As a result, the market saw a decrease in contractors’ margins, lower quality of drilling and well maintenance services, as well as an increase in production downtime.

Eleonora Krainova
Gubkin Russian State University of Oil and Gas
Key segment performance

Drilling

Production drilling, million m

- In 2018, production drilling showed no change from 2017, remaining at 27.6 million tonnes.

- Slavneft and Bashneft recorded the most significant growth in drilling volumes (4 percent and 8 percent, respectively). However, their oil production volumes declined. This suggests that they are trying to pump more oil out of the existing wells, but their production levels keep falling.

- Tatneft's production drilling meterage decreased twofold to 9.4 million meters. Gazprom Neft and RussNeft were also down by 17 percent and 6 percent, respectively.

The key reasons for stagnating production drilling operations in 2018 included large-scale structural shifts boosting horizontal drilling which drove up production efficiency per meter drilled. In addition, given the restrictions resulting from the OPEC+ accord and uncertainties around this deal, Russian producers delay investments in new oilfields. At the same, smaller oil increased drilling by 7 percent, from 2.47 to 2.64 million meters.

Andrey Kolpakov
Senior Researcher at the Institute for Scientific Forecasting of the Russian Academy of Sciences

Source: INP RAN, company data, Deloitte analysis
Overview of the Russian oilfield services market – 2019

- In 2018, exploration drilling was up by 8 percent, reaching 1.07 million meters.
- With 90 thousand meters up from 2018, Gazprom Neft demonstrated the largest increase in exploration drilling.
- Lukoil recorded the largest decrease of 8 percent.
- In the period since 2015, the most significant upward trend in exploration drilling was identified for Rosneft – an increase of 160 thousand meters, or 152 percent.

- In 2018, the national vertical drilling decreased by 13 percent (2.1 million meters), largely due to Rosneft’s meterage declining by almost a quarter (22 percent) to 5.5 million meters.
- Gazprom Neft and Tatneft also posted a twofold decline in vertical drilling (54 percent) to ca. 300 thousand meters. Overall, the vertical drilling volumes of Gazprom Neft and Tatneft decreased four times and two times, respectively.
- RussNeft, on the other hand, saw a two-and-a-half times increase in vertical drilling meterage (140 thousand meters).

Source: INP RAN, company data
Overview of the Russian oilfield services market – 2019

Drilling

Horizontal drilling, million m

- Horizontal drilling meterage in Russia has tripled since 2013 (+9.1 million meters).
- In 2018, national horizontal drilling totaled 13.4 million meters, climbing up 19 percent as compared with 2017.
- The continued growth of horizontal drilling is largely fueled by potential 2.5–3 times reductions in pipe laying costs. In addition, this technology helps lower labor costs.
- In 2018, Rosneft achieved the most significant increase in horizontal drilling volumes (36 percent).
- Tatneft and RussNeft reported a decrease of 32 and 41 percent, respectively.

Robust growth of the horizontal drilling meterage is undoubtedly a prominent trend in the OFS market. Advances in horizontal drilling will define drastic changes in the industry’s structure overall, and in regions, in particular. West Siberia’s share in production drilling and oil output started to grow again from 2016 and 2017, respectively. In 2013–2018, the share of horizontal drilling increased from 21 percent to 48 percent and is likely to keep growing in the next few years.

Andrey Kolpakov
Senior Researcher at the Institute for Scientific Forecasting of the Russian Academy of Sciences

Source: INP RAN, company data
Meterage distribution of exploration and production drilling across oil and gas provinces (OGP) in 2018

Source: INP RAN, company data, Deloitte analysis

Meterage distribution in production drilling across oil and gas provinces (OGP), %

<table>
<thead>
<tr>
<th>Year</th>
<th>Volga-Ural OGP</th>
<th>Eastern Siberia OGP</th>
<th>Western Siberia OGP</th>
<th>Okhotsk OGP</th>
<th>Timan-Pechora OGP</th>
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Meterage distribution in exploration drilling across oil and gas provinces (OGP), %

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<tr>
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<td>59</td>
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Drilling

Distribution of supply on the drilling market (based on meterage)

- Eurasia Drilling Company Limited
- SSK
- GAZPROM BURENIYE
- ERIELL Group
- TAGRAS-KHOLDING
- RN-BURENIE
- Surgutneftegas
- Other companies

- Eurasia Drilling Company remains the largest independent drilling provider, even though its share in the overall market supply dropped slightly to 19 percent over the past year. A large share of the vertically integrated offering (23 percent) is attributable to RN-Burenie, a drilling arm of Rosneft, which has significantly grown its supply volumes since 2015.

Presently, the key challenge for oil and gas companies involves a drastic decrease in well construction and service costs. As a result, the current approaches to operations management need to be revised. For example, a new form of well drilling management currently undergoes industrial testing. The new management system is run from a single drilling command and control center based in a mobile wellsite office. The current results already show benefits of such approach enabling timely operational decisions and technology process optimization. In addition, there is a significant increase in labor productivity. Instrument supervision is being introduced on a wide scale in well services, as it plays a key role in enhancing quality of borehole operations.

Artem Parkhomenko
Chief Development Officer
AO R&D Design Center for Gas and Oil Technology

Source: INP RAN, company data, Deloitte analysis
The oil drilling market is expected to grow due to the ongoing expansion of drilling operations. The drilling growth stems from the need to maintain the oil output on the back of declining flow rates of existing wells and inevitable decrease in the efficiency of reservoir stimulation. The outlook for the industry and drilling rates depend on international agreements, oil price and other macroeconomic factors.

According to approved development project design documents for West Siberian oilfields, the changes in the average cost of directional and horizontal drilling show an increase in drilling costs per meter in this major Russian oil and gas province in the past three years. Overall, the drilling costs per meter increased by more than 2.3 times in the past ten years.

Most Russian oil companies tend to switch from master contract agreements to separate drilling contracts where a supervisor monitors and coordinates operations of all service contractors.

Eleonora Krainova
Gubkin Russian State University of Oil and Gas
Well maintenance

- In 2018, well maintenance costs were 13 percent up from 2017, with the largest increase (12 percent) recorded by Gazprom Neft.
- The largest drop (17 percent) was posted by Slavneft.

- In 2018, total workover costs increased by half, reaching RUB 206.5 billion. This was largely due to an increase in workover costs of Yamal LNG.
- Rosneft increased its workover costs by 1.5 times (47 percent), to nearly RUB 60 billion.
- A decline in workover costs was recorded by Gazprom Neft and Slavneft (14 percent and 15 percent, respectively).

Source: INP RAN, company data
Well aging results in a higher degree of complexity and capital intensity of well service and workover. Well servicing at the production stage includes well maintenance and workover, well reconstruction and restoration.

Well maintenance and workover including oil recovery enhancement are carried out to restore well performance and keep well producing. The total expenditures of oil and gas producers for well maintenance and workover account for over 10 percent of overall operating costs.

The well reconstruction allows companies to maintain or enhance the oil well productivity. Experts expect the CAGR of well servicing operations to increase by 4 percent in 2018–2027. At the same time, the degree of the well maintenance complexity is set to grow due to overall well aging. The number of wells exceeding their original design life (25–30 years) increases.

The duration of the production period before the initial well shut in for servicing, as well as operational risks mostly depend on the outcome of the well construction and completion. The extent of negative consequences of the risks arising from the inferior well construction quality may range from insignificant repairs to revision of the project viability due to the significant cost of compensating for the resulting losses.

The experience of leading oil and gas companies shows that an increase in the efficiency of the well maintenance including reduction of the related costs involves changing the approach to the customer–contractor relationship. This relationship should be based on the sustainable and mutually beneficial partnership.

When entering into a contact at the lowest price, service companies and drilling contractors have to use all available cost cutting methods, such as hiring low-skilled drilling personnel and engineers, cutting expenditures for preventive maintenance, and using cheaper components, drill fluids, etc. This practice negatively affects financial and operating metrics of the contractor operations.

The well maintenance and workover services in Russia are provided by respective divisions of major drilling companies and a large number of independent operators.

Eleonora Krainova  
Gubkin Russian State University of Oil and Gas

Given the need to construct oil and gas wells with complex spatial architecture and minimize bit walk, companies have to use online monitoring systems to perform fatigue analysis on the threaded joints of the drilling string during the oil well drilling. Such systems are expected to model the design of drilling tools, calculate the tensile stress for each threaded tool joint (accounting for spatial deviation of the monitored wellbore section and cumulative damage), and estimate the failure probability. In this context, hard-copy paper drilling tool reports completed by rigsite personnel lose their relevance, as the papers can be lost, reports are filled out after the event due to tight schedule of toolpushers, the originals of the technical files are not kept at the rigsite, the correctness of entries is not verified, etc.

It is critical to introduce electronic certificates enabling operators to record the load on each tool, analyze tensile stress, estimate the service life and failure probability in order to monitor the condition of threaded joints in drilling tools.

Artem Parkhomenko  
Chief Development Officer  
AO R&D Design Center for Gas and Oil Technology
Distribution of maintenance and workover costs across oil and gas provinces (OGP) in 2018

**Workover costs, RUB billion**

<table>
<thead>
<tr>
<th>Year</th>
<th>Volga-Ural OGP</th>
<th>Western Siberia OGP</th>
<th>Eastern Siberia OGP</th>
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**Well maintenance costs, RUB billion**

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Source: INP RAN, company data, Deloitte analysis
### Efficiency in oil recovery (hydraulic fracturing)

#### Number of hydraulic fracturing operations, thousand

<table>
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<th>2016</th>
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<td>0.2</td>
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#### Hydraulic fracturing yield, million t

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<th>2017</th>
<th>2018</th>
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<td>0.1</td>
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<tr>
<td>Other companies</td>
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<td>0.6</td>
<td>0.5</td>
<td>0.3</td>
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<tr>
<td><strong>Total:</strong></td>
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<td>6.9</td>
<td>6.7</td>
</tr>
</tbody>
</table>

- In 2018, companies performed 5,921 hydraulic fracturing operations – 4 percent less than in 2017.
- Surgutneftegaz showed a decrease of 17 percent.
- Bashneft, Surgutneftegaz and RussNeft (13.6%; 11.7% and 11.1%, respectively) demonstrated the highest aggregate average annual growth rate of the number of fracturing operations from 2013 to 2018.
- In 2018, hydraulic fracturing generated 6.7 million tonnes of oil, declining by 3 percent compared with 2017.
- Despite the overall decline in the number of hydraulic fracturing operations, Surgutneftegaz managed to achieve a 6 percent increase in its yield (1.9 million tonnes).
- Lukoil’s hydraulic fracturing yield saw a 20 percent decline to 0.6 million tonnes.
- Surgutneftegaz and RussNeft demonstrated the highest cumulative average annual growth rate of efficiency of hydraulic fracturing operations from 2013 to 2018 (8.5% and 7.7%, respectively).

Source: INP RAN, company data
The hydraulic fracturing yield in Russia has been falling for the past few years. In 2013, the average yield was 1,426 tonnes of oil per one operation. In 2018, this figure fell to 1,135 tonnes.

* 'Fracking'-based production declined due to the following:

- Insufficient exploration and inadequate knowledge of the rock, proppant and frac fluid properties result in the use of inaccurate or false input data in hydraulic fracturing projects.
- Carbonates pose another challenge. Oil companies, particularly, Transneft are deeply dissatisfied with the results. It is exactly the case when the carbonate content of the rock should be thoroughly studied. Depending on the content, either matrix acidizing (to restore return permeability), or fracture acidizing, or massive acid-proppant fracturing should be performed. Mistakes result in flow rate decline.
- Traditional hydraulic fracturing aimed at oil recovery enhancement is performed in a vertical well and involves few machines. Operators run those machines (pumps, blenders, hydration units, proppant delivery, etc.) manually. Companies use multi-stage fracking in horizontal wells (or in several horizontal wells) to develop shale deposits, where the process consists of 100 and even more stages. A vast number of machines involved makes it impossible to promptly run pre-defined scenarios in the walkie-talkie mode. A microsecond delay in sending a command may result in a failure. The Unconventional Fleet system fully automates the entire process and uses high-speed controllers installed on each machine. It is run from a single control center (Data Van) integrated with the fracking modelling unit. There are few such fleets but the demand for fracking modelling is high. Furthermore, the supply of 'Unconventional Stuff' is prohibited under the current sanctions. This is a real issue which results in a significant increase of development costs and production decline.

Companies willing to specify the exact reasons should understand whether the productivity declines in vertical or horizontal, wells, as the oil recovery enhancement techniques apply to the former, and the original techniques are used in the latter. It is critical to know which type of rock was treated (carbonates, terrigenous rocks, shale deposits, etc.), what kind of fracking was performed (standard, acid, acid-proppant, etc.), and what is the fleet to be used.

Yuri Markovich Tonkonogov
Professor, Doctor of Technical Sciences
The demand for hydraulic fracturing is driven by four companies: Rosneft, Surgutneftegaz, Lukoil, and Tatneft. Together, they account for about 75 percent of the total hydraulic fracturing demand in Russia.

The past year witnessed an increase in demand for hydraulic fracturing at Tatneft.

### Distribution of demand for hydraulic fracturing

The hydraulic fracturing (hydro-fracking) remains a future-oriented technique in Russia. In the medium-term, its potential can be unlocked to maintain production at depleted oilfields and extract tight oil. Extensive horizontal drilling operations are likely to drive demand for hydraulic fracturing. So far, sanctions materially restricted the ability to promote these operations as evidenced by data collected over the past several years.

The creation of a corporate technology, software and equipment service for hydraulic fracturing is a priority but requires time.

Andrey Kolpakov
Senior Researcher at the Institute for Scientific Forecasting of the Russian Academy of Sciences

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Source: INP RAN, company data
According to preliminary estimates, 2D seismic explorations fell by 33 percent to 63 thousand km.

3D seismic explorations are supposedly down 12 percent to 45 thousand km.

In 2018, the number of new 2D and 3D seismic exploration licenses fell by 60 percent (by 24 and 30 licenses, respectively).

Source: The Federal Agency on Subsoil Usage, Deloitte analysis
Challenges and opportunities in Russia’s oil service sector

Exogenous influence factors
- Technical and technological progress
- Demand, supply and prices in the oil market
- Geopolitical environment
- Government regulation in the sector

OFS market

Endogenous influence factors
- Management efficiency
- Availability of state-of-art equipment
- Internal efficiency
- Availability of relevant technology
- Personnel qualifications
## Exogenous influence factors

<table>
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<th></th>
<th>Drivers</th>
<th>Barriers</th>
</tr>
</thead>
<tbody>
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<td>1</td>
<td>Tougher production conditions</td>
<td>Stricter requirements for equipment</td>
</tr>
<tr>
<td>2</td>
<td>Evolution of technology driven by vertically integrated oil companies</td>
<td>Independent companies loosing clients</td>
</tr>
<tr>
<td></td>
<td>Consolidation of financial resources</td>
<td>Weaker competition and lower market transparency</td>
</tr>
<tr>
<td>3</td>
<td>Higher demand for services of independent OFS companies</td>
<td>No guarantee of competitive offers</td>
</tr>
<tr>
<td>4</td>
<td>Competitive oil price</td>
<td>Weak infrastructure</td>
</tr>
<tr>
<td>5</td>
<td>The positive effect of the added income tax on the OFS industry</td>
<td>Inadequate regulation of the OFS market</td>
</tr>
<tr>
<td>6</td>
<td>Favorable pricing</td>
<td>Curbing demand for services</td>
</tr>
<tr>
<td>7</td>
<td>Fracking-based oil production</td>
<td>Offshore production</td>
</tr>
<tr>
<td></td>
<td>Launch of new products/services on the market</td>
<td>Limited access to international capital</td>
</tr>
<tr>
<td>8</td>
<td>Increased efficiency of tight oil production</td>
<td>Lack of access to western technology</td>
</tr>
<tr>
<td></td>
<td>Advances in oil recovery enhancement</td>
<td>Decreasing costs of shale oil production in the US</td>
</tr>
</tbody>
</table>

## Endogenous influence factors

<table>
<thead>
<tr>
<th></th>
<th>Barriers</th>
<th>Incentives</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Intuition and experience-driven management</td>
<td>Streamlined approach to strategic and financial planning, as well as risk management</td>
</tr>
<tr>
<td>2</td>
<td>Focus on current tasks</td>
<td>Potential for import substitution</td>
</tr>
<tr>
<td></td>
<td>Obsolete equipment</td>
<td>Potential imports from the regions not supporting sanctions against Russia</td>
</tr>
<tr>
<td>3</td>
<td>Lagging technology</td>
<td>Use of international experience</td>
</tr>
<tr>
<td></td>
<td>Inadequate technology</td>
<td>Creation of shared databases</td>
</tr>
<tr>
<td></td>
<td>Use of international experience</td>
<td>The updating of methodologies and standards</td>
</tr>
<tr>
<td>4</td>
<td>Lack of skilled personnel</td>
<td>Streamlined approach to personnel policy</td>
</tr>
<tr>
<td></td>
<td>Partnerships with industry-specific colleges</td>
<td>Partnerships with industry-specific colleges</td>
</tr>
</tbody>
</table>
Overview of the Russian oilfield services market – 2019

Overview of government support for the industry around the world

Global best practices in government support for the oilfield services market: China

The Chinese oilfield services sector is one of the most advanced in the world. It is distinguished by strong government involvement and close cooperation between local service providers and national oil companies, which creates a number of competitive advantages.

Regulation

- China’s National Development and Reform Committee (NDRC) acts as the main agency that determines policy, planning, and regulation for the national energy sector.
- Various aspects of the country’s oil policy are monitored by the Ministry of Commerce, the Ministry of Land and Resources, the Ministry of the Environment, and the State Oceanic Administration.
- In 2008, the Chinese government established the National Energy Administration (NEA), which serves as a key energy regulator. The NEA is associated with the NDRC and is responsible for approving new energy projects in China, setting domestic wholesale energy prices, and implementing the central government’s energy policy.
- In January 2010, the government formed the National Energy Commission (NEC), which seeks to consolidate energy policy for various institutions reporting to the State Council and examine the key energy issues. The new government’s reforms seek to consolidate and streamline national ministries and expand the NEA’s activities.

Companies

- COSL, Anton, SPT Energy, Petro-king, Hilong, Honghua, ZPEC

Key government support leverages:

- High entry barriers for multinational companies;
- Substantial R&D budgets;
- Acquisition of the leading technology and equipment to develop similar products;
- Investing in talent education and training;
- Preference to domestic bidders.

Despite the comprehensive support from the state, the key development barrier for the Chinese oilfield services market is its relative isolation, which impedes significant incentives that could drive competitive services.

Previously, the global footprint of Chinese oilfield service providers was considered to be somewhat of a barrier as their services were mainly consumed by such unstable economies as Algeria, Chad, Ecuador, Indonesia, Iran, Iraq, Libya, Mongolia, Myanmar, Nigeria, Oman, Syria, Thailand, Tunisia, Venezuela, and Peru. Today, however, Chinese providers have expanded to developed markets, e.g. Canada.

Source: Investopedia.com, EIA, assessment of the experts
Global best practices in government support for the oilfield services market: Norway

According to the Norwegian Ministry of Petroleum and Energy, competition and efficiency in this sector is best promoted by having a variety of companies of all sizes. This approach boosts interest in various projects and the adoption of various cost-effective technologies. Norwegian oilfield service companies have accumulated a wealth of experience in subsea development, which has made Norway a major exporter of oil and gas equipment and services.

Regulation

- **The Norwegian Ministry of Petroleum and Energy** is the main agency responsible for the production and distribution of oil and gas on the domestic market.

- **The Norwegian Petroleum Directorate** is a government agency responsible for the regulation of petroleum resources on the Norwegian continental shelf. It strives to ensure the optimal distribution of oil resources, while minimizing the negative impact on the environment.

- **Petro* is a company wholly owned by the government of Norway. It manages the government’s portfolio (collectively called the State’s Direct Financial Interest) of exploration and production licenses for petroleum and natural gas on the Norwegian continental shelf. The company also has a control function surveying Equinor’s production on behalf of the government. Petro* does not operate any fields and does not directly own any licenses.

Companies

- Equinor (StatOil), Aibel, Aker Solutions, DOF Subsea, FairfieldNodal, Petroleum Geo-Services (PGS), Beerenberg Corp, Kaefer Energy, Bilfinger Industrier Norge, Farstad Supply, Kongsberg Maritime

Key government support leverages:

- Norwegian continental shelf access opportunities for international companies with the necessary expertise and technology.

- Customization of the national education system with a view to educate locals and strengthen educational capacities.

- The former licensing system required the involvement of domestic players in all oil and gas operations.

- Encouragement of contracts with local oilfield equipment suppliers.

- Diminishing government support gave national players time to develop, establish a strong local presence, and even expand their global operations.

- Support for local R&D efforts (e.g. R&D investments are not included in taxable profit).

- A government subsidy for oil and gas exploration activities was introduced in 2005 (companies can be reimbursed for 78 percent of their exploration costs).

Barriers

- Strict legislative regulation

Source: Norwegian Petroleum Directorate, Investopedia.com, EIA, assessment of the experts
Global best practices in government support for the oilfield services market: the United States

The United States has the largest oilfield services market in terms of size and the number of players. Due to many years of development, the market offers healthy competition, clear rules and regulations, transparency, openness to multinational companies, and comfortable entry conditions.

Regulation

- The United States does not have a single source of legislation shaping its national energy policy. Oilfield service companies are regulated on two levels: the federal and local.
- The federal rules approved by the US Congress, as well as presidential orders, are primarily focused on the high quality of air and water and employee safety. They also govern exploration and development on indigenous and federal lands and the outer Continental Shelf.
- The Department of the Interior, the Department of Transportation, the Department of Energy, and the Environmental Protection Agency issue development and operation licenses, perform inspections, drilling feasibility studies, and other supporting activities.
- Most of the drilling operations are regulated on the state level. The same is true for all oil and gas extraction operations in the waters of the United States, which spread three to nine nautical miles from the coastline into the sea, depending on the state.

Companies


Key government support leverages:

- Promotion of competition;
- Support for small independent companies;
- Funding opportunities for environmental projects;
- Substantial R&D investments;
- Use of hi-tech equipment;
- Recruitment of top talent.

Key development barriers for the US oilfield services market:

- The tariffs imposed by the Trump Administration under Section 232 of the Trade Expansion Act (1962) and Section 301 of the Trade Act (1974), which have had a massive negative effect on the oilfield services supply chain, service innovations, and oil equipment purchases.
- Lack of specific guidelines from the US federal government regarding the list of goods and services prohibited when trading with China.
- Rising mineral tax rates in some US states (e.g. in Oklahoma the tax was raised from 2 to 5 percent).
- Following the suspension of the government’s work in early 2019, the Environmental Protection Agency put a hold on all environmental assessments for major energy projects. The signing of all treasury documents was delayed as well, including those related to the government support for the oilfield services market.
The international experience shows that there are areas which receive state support in any country, e.g. R&D, personnel training, access to external markets. However, there are also areas where support is country-specific. Given the current structure of Russia's oil industry, the imposed sanctions and resulting technology limitations, the approaches practiced in China and Norway appear more applicable to Russia. These approaches are about ways of gaining access to the most advanced samples of equipment and technology, as well as setting preferences for local OFS companies. Clearly, Russia may face serious limitations in the key industry of the national economy unless some effort is made to foster competition and provide support to smaller OFS companies.

Andrey Kolpakov
Senior Researcher at the Institute for Scientific Forecasting of the Russian Academy of Sciences

The OFS industry is instrumental to ensuring the national energy security, hence, only national companies are allowed to play the key role in this market in the US and China.

In fact, western companies face no competition globally when it comes to providing high tech services to oil companies.

Lower service prices are the key competitive advantage of Russian players. As a result, the Russian OFS industry has to follow the UK pattern where local players mostly chose to provide basic O&G services and meanwhile implement catch-up strategies. Partially, this is due to financial constraints limiting the scope of R&D.

Demand for drilling supervision and well maintenance/workover services has increased in the past several years, as any complex process requires professional design and close monitoring.

Eleonora Krainova
Gubkin Russian State University of Oil and Gas
**Government support for the oilfield services market: best global practices**

The development of the oilfield services market does not depend on a country’s economic system. For example, China is a planned economy and the United States is a market economy. However, the market is greatly affected by government regulation.

A review of the government support efforts in countries with mature oilfield services markets shows that there is no magic bullet solution that could drive this industry in any particular economy.

<table>
<thead>
<tr>
<th></th>
<th>China</th>
<th>Norway</th>
<th>United States</th>
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</thead>
<tbody>
<tr>
<td>Competition*</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Openness</td>
<td>■</td>
<td>■</td>
<td>■</td>
</tr>
<tr>
<td>Transparency*</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<tr>
<td>Understandable regulatory rules</td>
<td>■</td>
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<td>■</td>
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<tr>
<td>R&amp;D investments</td>
<td>■</td>
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<td>■</td>
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<tr>
<td>Investments in talent training</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<tr>
<td>Tax regime (preferences available)</td>
<td>■</td>
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<tr>
<td>Subsidies</td>
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<tr>
<td>Support for foreign operations</td>
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<tr>
<td>Watchdog</td>
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<td>Government programs</td>
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<tr>
<td>Ease of entering the market</td>
<td>■</td>
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<tr>
<td>Support for SMEs</td>
<td>■</td>
<td>■</td>
<td>■</td>
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<tr>
<td>Industry associations</td>
<td>■</td>
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</tr>
</tbody>
</table>

- High level
- Medium level
- Low level/none

* Competition means the equality of competitive opportunities for different types of companies.
  Openness (i.e. integration into the global economy) means that a commodity market offers entry opportunities to suppliers from other regions.
  Transparency means full access to any information, and a lack of secrecy.

** The assessment of maturity is based on the consolidated opinion of experts from the Deloitte Research Center, representatives of the market (scientific and business community)

Source: EIA, Deloitte analysis
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