

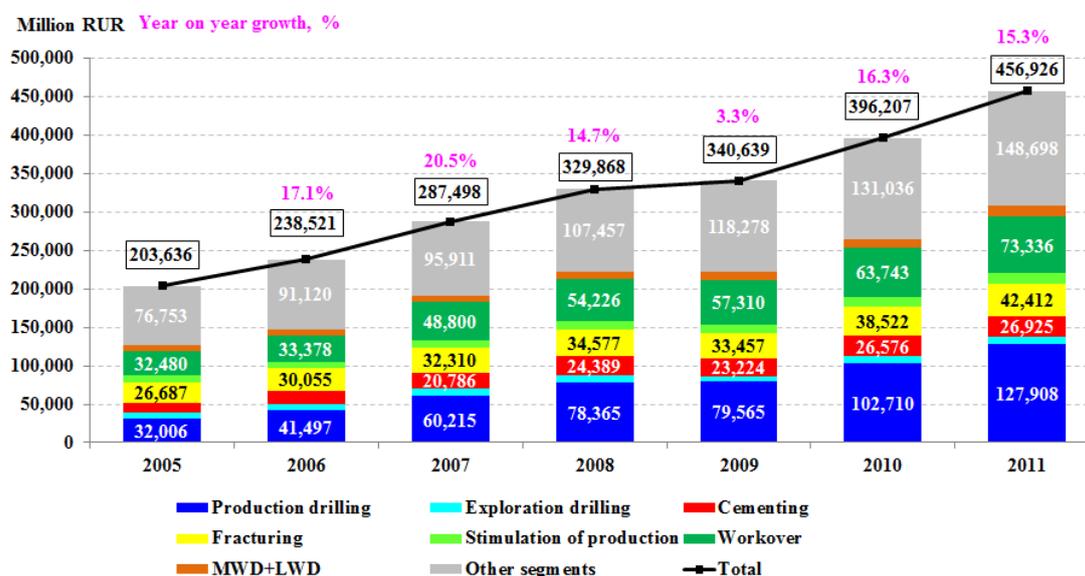
Oilfield Services Market Value

Between 2005 and 2011 the total oilfield services market grew 124 percent from 203.6 billion rubles in 2005 to 456.9 billion rubles in 2011. The main drivers of the growth were production drilling and workovers.

The following sectors had the largest proportions of Russia's total oilfield services market in 2011:

- Production drilling (28 percent of the total market, or 127.9 billion rubles in absolute terms)
- Workovers (16 percent / 73.3 billion rubles)
- Pump services (12 percent / 52.3 billion rubles)
- Well logging (12 percent / 52.3 billion rubles)
- Hydraulic fracturing (nine percent / 42.4 billion rubles).

Figure Annual total size of the Russian oilfield services market from 2005 through 2011, millions of rubles



Production drilling

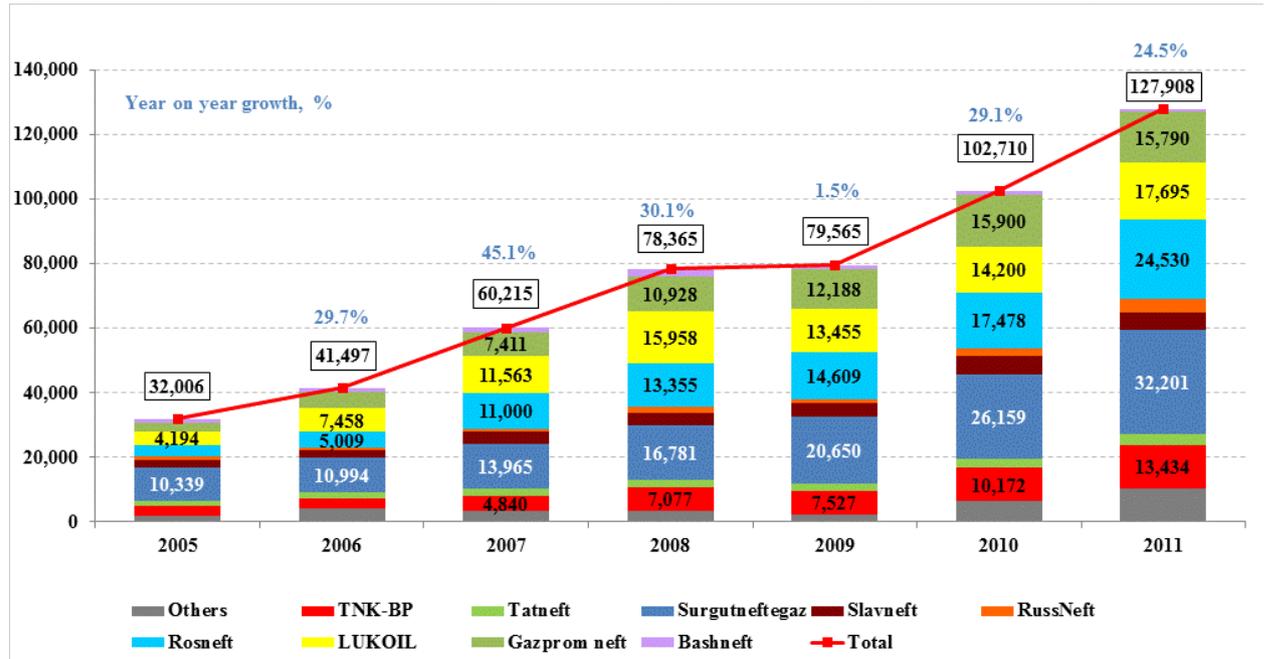
In 2009 total production drilling in Russia declined by 3.5 percent relative to 2008. In 2010 it grew by 17.4 percent compared with 2009. In 2011 total production drilling in Russia grew by 8.9 percent compared with 2010 and approached 18 million meters.

In 2010 and 2011 Russia saw a positive dynamic trend in horizontal drilling. Most Russian VIOCs in 2010 and 2011 either dramatically increased their shares of horizontal drilling or intended to do so in the next few years. In 2010 and 2011 annual nationwide horizontal drilling rates grew by 29 percent in 2010 and by 25 percent in 2011 (year-on-year).

Given the growing share of horizontal drilling, the amount of production drilling, including gas wells, is expected to grow between 2012 and 2020 from 17.99 million meters in 2011 to 20.2 million meters in 2020. The highest rates of annual drilling during this period are anticipated in 2017 and 2018.

We believe that annual horizontal drilling meterage in Russia from 2012 through 2020 may rise from 2.24 million meters in 2011 to 6.25 million meters in 2020.

Figure Annual Russian production drilling market value from 2005 through 2011, millions of rubles

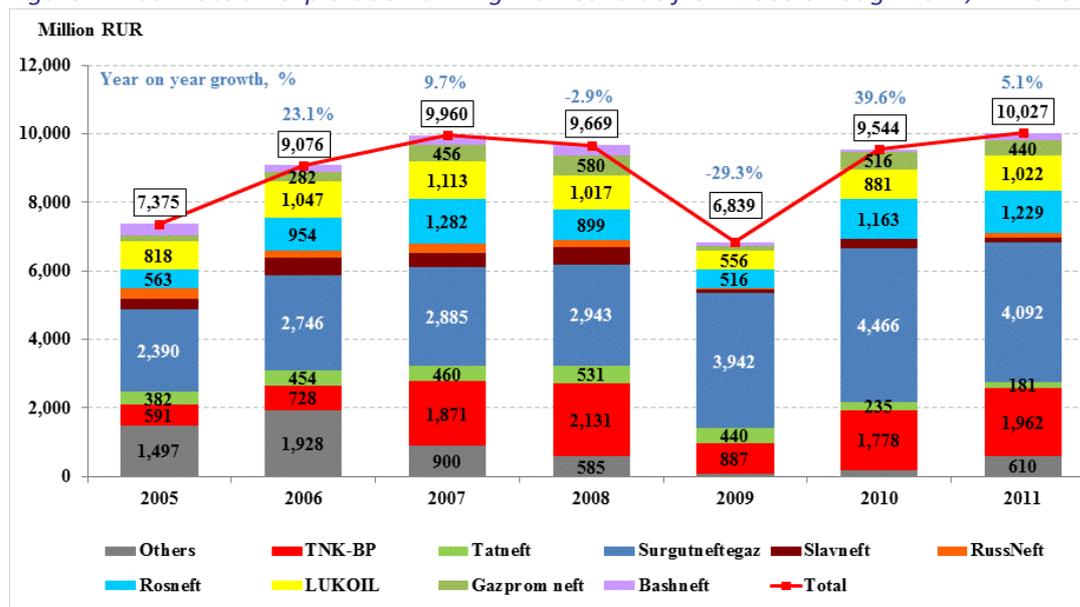


Exploration drilling

In 2010 Russian VIOCs increased their exploration drilling rates by 47 percent over 2009 to reach 592,000 meters. In 2011 the growth over the previous year was 6.8 percent (totaling 632,000 meters).

We predict that nationwide exploration drilling will grow by about 50 percent by 2015 compared with 2011. In part, this growth can be viewed as recovery growth as annual drilling in the pre-crisis 2007 reached 871,000 meters per year.

Figure Annual Russian exploration drilling market value from 2005 through 2011, millions of rubles



Cementing

In 2011 the well cementing market totaled 34,600 jobs. Since 2005 the market has consistently grown, except for the crisis year of 2009.

Between 2012 and 2020 primary cementing operations may grow at an average rate of 0.8 percent per year to reach 23,490 jobs by 2020. The overall growth over this period will likely be around three percent.

Between 2012 and 2020 secondary cementing operations may grow by 6.2 percent per year on average and reach 25,877 jobs by 2020. Over this entire period the secondary cementing market may grow by 53 percent.

Workovers

In 2010 and 2011 the number of completed workovers increased across virtually all Russian companies. Part of this increase can be viewed as recovery growth. In 2011 the annual number of workover jobs completed across Russia rose by 16 percent compared with 2008.

According to our analysis, from 2012 through 2020 the annual number of workovers will increase by approximately five percent to seven percent per year. We believe that the percentage of operating wells involved in workovers from 2012 through 2020 may increase from 18 percent in 2011 to 32 percent in 2020.

Enhanced oil recovery

Hydraulic fracturing

In 2010 and 2011 the annual number of jobs completed across Russia, year-on-year, grew by 13.5 percent and 5.4 percent, respectively. During this period hydraulic fracturing in new wells was the main driver for total growth in the number of interventions. This was due to the following factors:

- ✓ Increased number of new wells brought on stream
- ✓ Increased relative proportion of new wells in which hydraulic fracturing was performed

The number of hydraulic fracturing jobs on new wells is expected to decrease in 2013 and 2014. Development of new major fields in Russia may begin in 2014 or 2015. This may result in an increase in the number of hydraulic fracturing jobs on new wells during this period to as many as 6,760 jobs in 2015 or 2016. Beyond 2015 and 2016, the sector may see a decline in the number of hydraulic fracturing operations on new wells, down to 5,600 jobs per year by 2020.

We believe that Russia's total annual number of hydraulic fracturing jobs on the current declining well stock from 2012 through 2020 will be between 4,200 jobs and 4,400 jobs per year.

Bottomhole zone treatment

In 2010 the total number of bottomhole zone treatment jobs was up 7.4 percent compared with 2009. In 2011 the total annual number of these jobs across Russia declined by 2.7 percent compared with 2010.

In our opinion, by 2020 the annual number of bottomhole zone treatment jobs may decline by five percent or six percent compared with 2011, while per-job effectiveness will remain approximately at the 2011 level. The greatest decline is likely to occur between 2012 and 2015; meanwhile from 2017 through 2020 the number of jobs will stabilize at around 15,100 jobs to 15,200 jobs per year.

Artificial lift optimization

Since 2003, Russian oil producers have consistently cut the number of artificial lift optimization operations at their fields. From 2003 through 2011 the number of completed jobs dropped nearly in half.

For Russia as a whole, the number of artificial lift optimizations in 2020 compared with 2011 may rise by 34 to 35 percent to approximately 12,100 jobs per year. This can be caused by both declining per-job effectiveness observed since 2005 and the growing scopes of development in complex fields and production of higher-viscosity brands of crude.

MWD/LWD activities

In 2009 the number of MWD jobs declined by 11.3 percent compared with 2008, which can be attributed to the drop in oil companies' investment activity. In 2010 and 2011 the number of jobs grew by 26 percent compared with 2009, with more than half of that gain being recovery growth.

During the pre-crisis period from 2004 to 2008, the number of LWD jobs increased by 70 percent. The main growth driver at the time was an increase in sidetracking scopes. During the crisis period in 2009 the annual number of jobs fell 13.7 percent compared with 2008. In 2010 and 2011 their number rose by 45 percent relative to 2009.

The authors believe that the number of MWD jobs from 2012 through 2020 may grow by approximately three percent to four percent as during this period the number of horizontal well operations will increase while the number of sidetracking and directional well jobs will decline.

The number of LWD operations across Russia between 2012 and 2020 may grow in physical terms by approximately 35 percent as a result of the increase in the number of new horizontal wells put on production each year. Furthermore, the growth in horizontal drilling should make up for the potential decline in the number of LWD jobs performed as part of sidetracking.