

Upstream developments in Russia

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Surprisingly for many observers, over the last few years the Russian oil industry demonstrated solid production growth. In the five years from 2012 to 2016 oil and condensate production in Russia grew by 6 per cent – from 518 million tonnes to 548 million tonnes (Figure 1). An insignificant decline of 0.1 per cent in 2017 compared to 2016 was driven by Russia's agreement within OPEC and not by upstream factors.

The overall increase was mainly provided by bringing online greenfields: production at these fields increased by 87 per cent (57 million tonnes), which more than compensated for an 8 per cent (29 million tonnes) drop in production at existing fields. The commissioning of over a dozen new deposits in 2014-2017 was the result of investment during the period of high oil prices and the absence of sanctions prior to 2014. By 2017 all of these projects yielded additional output of over 25 million tonnes, with the state companies Rosneft and Gazprom Neft claiming two thirds of these volumes.

Several additional factors have substantially supported the economy of these projects, driving production growth:

- The rouble devaluation, which, given the prevalence of rouble costs, significantly cut US\$ production costs and, therefore increased the competitiveness of Russian oil in foreign markets;
- The peculiarities of the Russian tax system, which reduces budget revenues ahead of company revenues when oil prices fall;
- The numerous tax breaks adopted for new fields in 2013 (primarily in Eastern Siberia).

The situation seems to be quite positive, and production growth is expected to continue, but there are several significant

challenges which together create real threats for the longer-term sustainability of Russian oil output. These challenges are coming from the result of different factors, related to resource base, financing, global oil market conjuncture and technologies.

The Resource Base Deterioration

In recent years, the proportion of high-quality oil reserves in Russia has been steadily declining: this is indicated by the composition of the proven reserves: of the 15 billion tonnes, as much as two thirds (10 billion tonnes) are hard-to-recover reserves – highly viscous oil, tight oil, oil from the Arctic and deep offshore fields. Though oil reserves in Russia have been growing steadily, the bulk of this increase is not due to the discovery of new deposits, but to additional exploration of the fields under development and the introduction of modern production technologies, which significantly increase the oil recovery ratio. There were some new discoveries as well, but most of them are small and located far from the infrastructure, so they seem unprofitable to develop.

Putting new reserves on the balance sheet requires additional investment, which is difficult given the current price environment. In 2016, the industry showed the lowest additional increase in reserves relative to production over the last 6 years – less than 50 million tonnes. In 2017 the figure increased to 72 million tonnes, but these indicators are still lower than those prior to 2016.

Lower Oil Prices

Oil prices correlate directly with investment in exploration. The current period of low oil prices provides for operational profitability of projects, mainly due to the rouble devaluation, but in the longer term it is likely to negatively affect investment in development and production. During the last three years annual average oil prices have fallen twice – this has affected investments in Russian exploration (Figure 2).

Sectoral Sanctions

The implementation of US and EU sectoral sanctions against the main Russian oil companies is another significant challenge for sustainable oil production. Financial sanctions limit their ability to borrow money on international markets, while technological sanctions are limiting supply of critically important equipment for shale and offshore projects.

Figure 1: Russian crude oil and gas condensate production

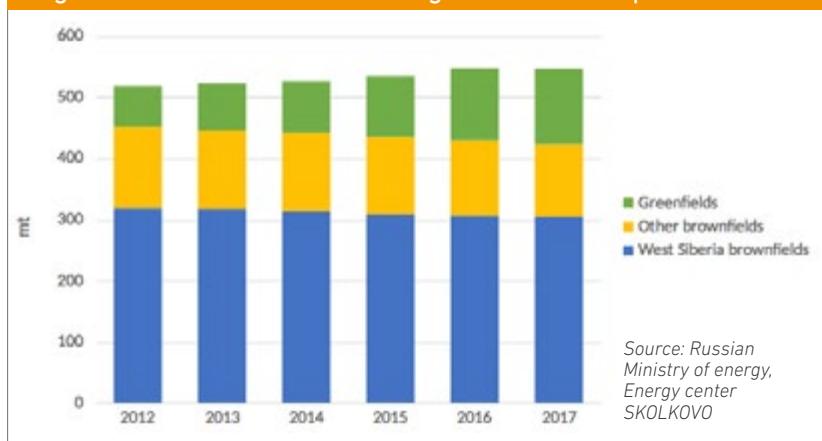




Figure 2: Investment in geological exploration in Russia and Brent price

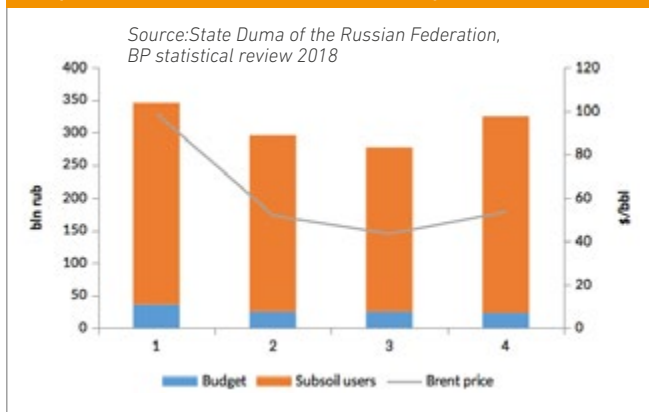
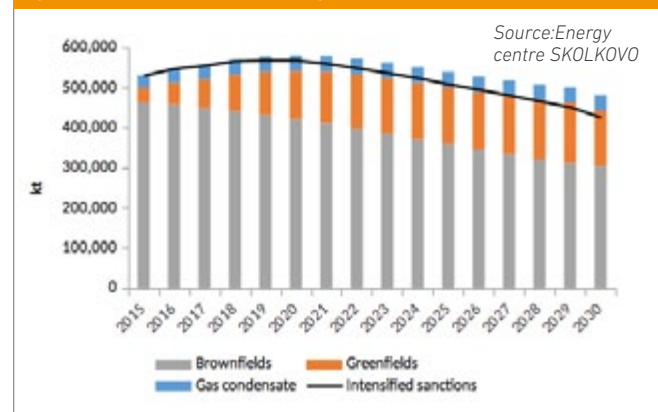


Figure 3: Projected crude oil and gas condensate production in Russia up to 2030, two scenarios



Offshore Oil Production

As of 2017, oil production on the Russian shelf totaled 25.7 million tonnes. Almost half of this output is produced on the Sakhalin shelf. In the future the main increase in production is to come from the Arctic shelf and the Caspian Sea. A significant number of shelf projects were planned in cooperation with international oil companies or with the active application of foreign technologies, but the introduction of sanctions seriously undermined their development, mainly the Arctic ones. Most of these projects were geared towards the involvement of foreign partners and were suspended under the pressure of sanctions. The reason is simple – the absence of Russian technologies and equipment. However, this has not affected current production volumes, as most of these fields were to be commissioned after 2020.

Shale Oil Production

With the introduction of sanctions, Russian companies are also having difficulties with the implementation of joint projects to develop shale oil, and nearly all projects were suspended. However, similar to offshore projects, this did not affect the current levels of Russian production: in any case, significant output at these fields was only expected after 2020-2025. As of 2017, accrued oil output at the Bazhenov Formation (main Russian shale) totaled over 10 million tonnes.

The ban on equipment for hydraulic fracturing and multistage hydraulic fracturing might not only significantly affect future shale oil production, but also oil production dynamics on brownfields. Oil production using fracturing methods accounts for approximately 10 per cent of total production – in 2017

approximately 50-55 million tonnes out of the almost 550 million tonnes of total Russian output were extracted directly via hydraulic fracturing. Russia manufactures its own equipment for hydraulic fracturing, but it cannot compete with foreign models. Russia counts around 80 hydraulic fracturing fleets, with just 3 per cent of these domestically manufactured. If the development of oil shale projects is a matter of medium and long-term prospects and therefore less critical, the lack of equipment at conventional fields with declining production in Western Siberia could lead to serious problems for oil companies today.

Russian Oil Production Outlook

At the moment it is possible to say that the Russian oil companies have completely adapted to the new conditions and sanctions regime. But, in the long term, maintaining levels of oil production in Russia will become an increasingly difficult and complex task. The main challenge for maintaining levels of oil production in Russia is the reduction of the reserves' quality – they require more financing as well as new technologies. The situation is aggravated by lower oil prices and by restrictions on critically important equipment supplies.

Due to past investment, Russian oil production is expected to keep growing in the next few years – up to 580 million tonnes in 2020, but it should be noted that these production volumes may be limited by market need, both domestic and external. It is quite possible that Russia will have idle production capacity.

By 2025, oil production might decline to 540 million tonnes. By 2030 if these restrictions are exacerbated, production might drop to 480 million tonnes. ●