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RUSSIA IS A MAJOR PLAYER IN WORLD ENERGY MARKETS**

1. INTRODUCTION

Simulations of the World Oil Production Capacity (Wocap) model suggest that global oil production (inclusive of all other hydrocarbon liquids, such as NGLs, etc.) will peak at a point near 81 million b/d (give or take 1 million b/d) well before the end of the decade, likely by 2006–2007. Declining production will prove irreversible, and global oil output is expected to fall to about 55 million b/d by 2020 (give or take 3 million b/d) (Fig. 1) [1].

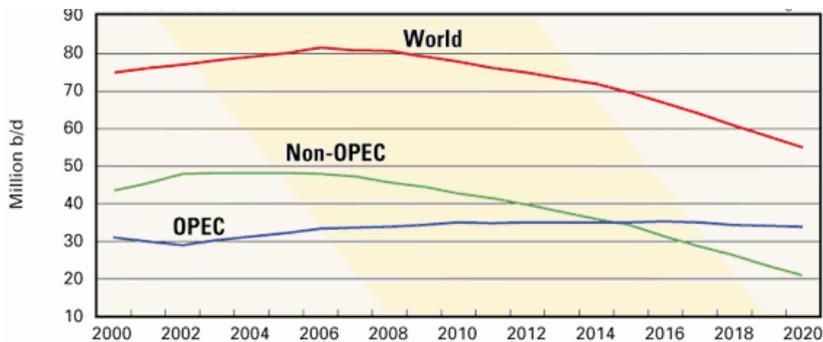


Fig. 1. World oil production outlook, WOCAP model [1]

2. NON -OPEC'S MAIN PILLAR

The North Seanon-OPEC's champion of the 1980s and 1990s is in full decline at an average rate of around 6%/year. Its total output soon will sink below 5 million b/d and likely will fall to about 3.5 million b/d by 2010.

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In the 21st century, Russia has taken over from the North Sea as non-OPEC's new champion. Unlike the North Sea, however, Russia is not a new province but a very mature one. Moreover, it is a region over which the defunct Soviet Union had ridden roughshod, especially during the 1980s (with the battering of the supergiant Samotlor field a case in point).

During 2003, Russia achieved an average output of 8,460,000 b/d. The latest Wocap base-case scenario for Russia forecasts an oil production plateau of just under 8.5 million b/d during 2004–2006. Under no Wocap scenario could Russian output edge over the 9 million b/d mark.

This is in stark contrast with many other forecasts, especially those issued by Edinburgh-based consultants Wood Mackenzie (WoodMac), which sees Russia's crude output going from strength to strength before reaching 10.4 million b/d in 2010. WoodMac Director Tim Lambert summarized his consultancy's findings on Russia's future oil production: "Russian production has been growing rapidly in recent years, and many observers consider that it should exceed 10 million b/d in 2010. On an unconstrained basis assuming that all required investment was put in place we believe that production could reach 12 million b/d in 2010 and 2011."

Both Wocap and WoodMac cannot be right, and undoubtedly one is totally wrong. The question remains which one is wrong.

3. OPEC'S MAIN PILLAR

Most of OPEC's stars (Iran, Kuwait) are not faring well: They clearly have reached the end of their oil capacity tether (a fact readily confirmed by the respective Wocap simulations). OPEC's brightest hope, Iraq, is now still in the grip of vicious terrorist attacks with the development of the supergiant fields of Majnoon, West Qurna II, and Nahr Umar having to wait for calmer days.

But, far more ominous than all these developments, is that OPEC's main pillar, Saudi Arabia, has been the subject of serious doubts. Saudi Arabia always has stood as the oil industry's symbol: "a supplier for all seasons" and the "producer of last resort", which produced an average of 8,672,000 b/d in 2003 (32.3% of OPEC's total output). The Saudi oil miracle was expected to last forever. No one ever dared think the unthinkable.

Now, the terminal decline of Ghawar (the potential of the world's largest oil field and the Saudis' major producer) would signal the beginning of the end for Saudi Arabia's oil. This should trigger alarm bells all over the petroleum industry and even in the general public (who should realize that global oil supplies are not "forever", not even in Saudi Arabia).

It is worth mentioning that Wocap model predictions for Saudi Arabia (up to 2020) are in full consonance with the potential consequences of Simmons's highly rational thesis (predicted that the Saudi oil miracle "would soon come to an end").

Some Saudi Aramco officers, such as Mahmoud Abdul-Baqi, vice-president, exploration, and Nansen Saleri, manager, reservoir management, are still sanguine about future potential, as the latter declared: "Saudi Arabia could easily achieve and sustain a production of 10 million b/d through to 2054".

If Saleri is correct, then Simmons's thesis and the Wocap scenarios are good for history's dustbin; there is an unbridgeable gap between his half a century and a mere decade (at best). But, fortunately, some Saudi officers are much more prudent than their above-mentioned colleagues.

Wocap's predictions for a global oil production peak of about 81 million b/d in 2006 or 2007 lately have been reinforced by the clouded predicament for the world's two largest producers, Saudi Arabia and Russia. Should non-OPEC champion Russia stumble, or OPEC pillar Saudi Arabia show signs of falling in step with Simmons's thesis, then Wocap's credibility would be further enhanced.

4. OIL AND GAS RESERVES AND PRODUCTION

Most of Russia's 60 billion barrels of proven oil reserves are located in Western Siberia, between the Ural Mountains and the Central Siberian Plateau (Fig. 2). Roughly 25% of Russia's oil reserves are on Sakhalin island where several consortia have begun producing and exporting oil (mainly to East Asia at present). They also plan to export gas to the United States via pipelines to the Siberian mainland and liquefied natural gas (LNG) terminals [2, 7].



Fig. 2. Sedimentary basins and major oil and gas fields of Europe, Russia Transcaucasia and Central Asia [9]

With about 1,700 trillion cubic feet (tcf), Russia has the world's largest natural gas reserves. (Tab. 1) In 2004, it was the world's largest natural gas producer and the world's largest exporter. However, its natural gas industry has not done as well as its oil industry in recent years, as production has increased only a little and exports only have re-attained their level of the late 1990s.

Potential growth of both oil and natural gas production in Russia is limited by the lack of full introduction of the most modern western oil and gas exploration, development, and production technology.

Table 1
Oil and natural gas reserves and production [2]

Country or Region		Proven Reserves (billions of bbl of oil/trillions of cu. ft. of gas)		Production ^a (mil. Bbl/day of oil/trillion of cu. ft. of gas)
		BP (end of 2004)	O & G Journal (1/1/05)	BP (2004)
Russian Federation		72/1,694	60/1,680	9.3/20.8
Reference Areas	United States	29/187	22/189	7.2/19.2
	North Sea ^b	n.a./n.a.	15/170	5.2 ^c /n.a.
	Saudi Arabia	263/238	259/235	10.5/2.3
	World	1,189/6,337	1,278/6,040	80.3/95.0

n.a. – not available

a – Includes natural gas liquids

b – Includes Denmark, Germany, Netherlands, Norway, and United Kingdom

c – Energy Information Administration estimate

5. EXPORTS

Energy exports have been a major driver of Russia's economic growth over the last five years, as Russian oil production has risen strongly and world oil and gas prices have been relatively high. This type of growth has made the Russian economy very dependent on oil and natural gas exports, and vulnerable to fluctuations in world oil prices.

6. PETROLEUM

- Almost three fourths of Russian crude oil production is exported (the rest is refined in the country, with some refined products being exported).
- About two-thirds of Russia's 6.7 million bbl/d of crude oil exports in 2004 went to Belarus, Ukraine, Germany, Poland, and other destinations in Central and Eastern Europe (Fig. 3).
- The remaining one-third of oil exports went to maritime ports and was sold in world markets.
- Recent high oil prices have enabled as much as 40% of Russia's oil exports to be shipped via more costly railroad and river barge routes.
- Most of Russia's exports of refined petroleum products to Europe are fuel oil and diesel fuel used for heating.

- Russia is exporting about 200,000 bbl/d via rail to the northeast China cities of Harbin and Daqing and to central China via Mongolia.
- A large portion of Russia's oil presently is shipped by tankers from the Black Sea to the Mediterranean and to Asia, mostly from the port of Novorossiysk.
- Deliveries from the Baku-Tbilisi-Ceyhan (BTC) pipeline (expected to start in early 2006) will be mostly oil produced by Azerbaijan and Kazakhstan, posing competition to Russian oil.
- Russia faces competition for China's oil market from Kazakhstan, with China, completed in late 2005 the construction of a pipeline from Atasu in central Kazakhstan to Alaskankou on China's western border. Eventual capacity will be 190,000 bbl/d.

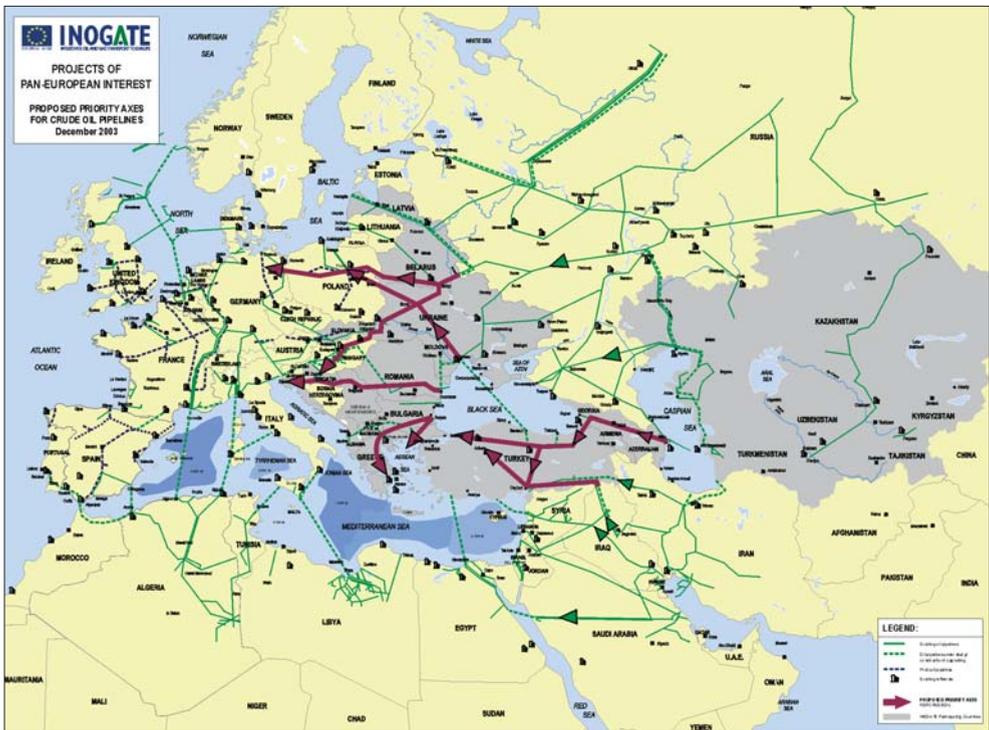


Fig. 3. The priority axes for crude oil pipelines, reflected in the corresponding map [8]

7. NATURAL GAS

Most of Russia's natural gas exports went to Eastern Europe and to customers in countries that previously were part of the Soviet Union (Fig. 4).

Gazprom has shifted some of its exports to meet the rising demand of Turkey, Japan, and other Asian countries.

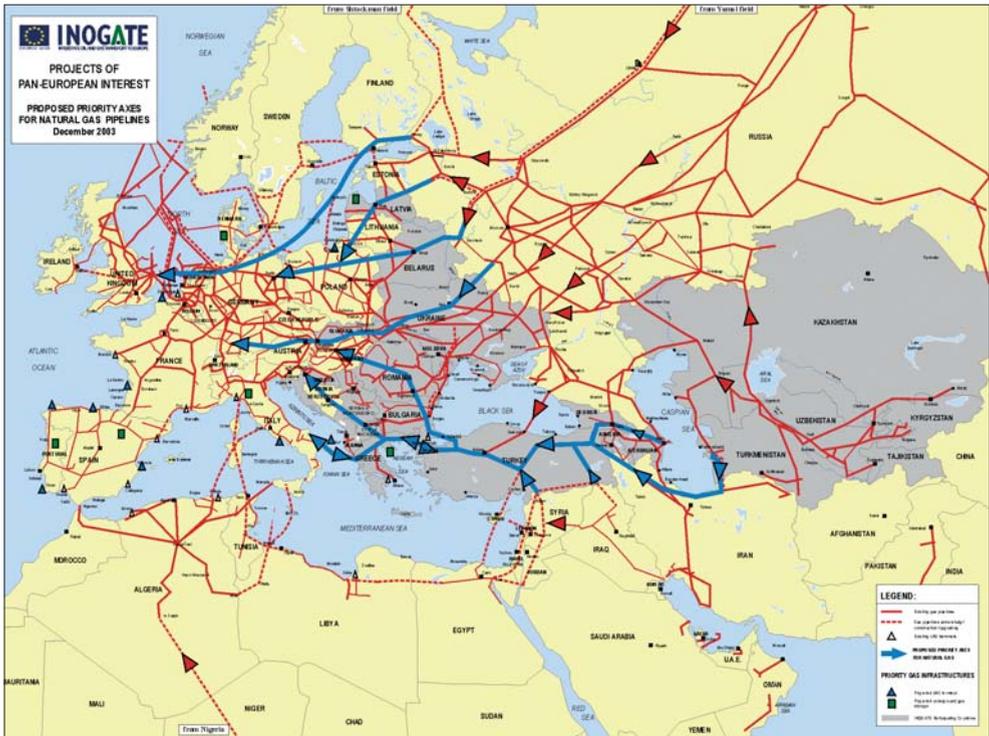


Fig. 4. The priority axes for natural gas pipelines, which involve INOGATE Participating Countries and Russia [8]

If Gazprom is to attain its long-term goal of increasing its European sales, it will have to boost its production, as well as secure more reliable export routes to the region.

Russia is a major supplier of natural gas to European countries (in 2003, Russian gas accounted for 100% of Slovakia's gas consumption, 97% of Bulgaria's consumption, 79% of the Czech Republic's consumption, and 68% of Hungary's consumption).

As with oil, Russia faces potential competition for Asian gas markets from Kazakhstan, which, with China, is working on a feasibility study for building a pipeline from the former to the latter to ship Kazakh gas to China.

Given the proximity of natural gas producers Turkmenistan and Uzbekistan to Kazakhstan, it is possible that their gas also would go to China via that route.

8. ENERGY POLICY

The Russian government has moved to take control of the country's energy supplies.

In Central Europe, Russian firms with close links to the Russian government have used leverage to buy energy companies to gain control over energy supply. For example, Yukos obtained majority control of a Lithuanian refinery by slowing oil supply to it, and

buying it at a reduced price. Another example of Russian steps to have maximum control over energy supplies is routing of new and planned export pipelines. For example, it has agreed with Germany, with the support of the United Kingdom (UK), to supply Germany and, eventually, the UK directly by building a natural gas pipeline under the Baltic Sea, thus bypassing Poland.

A large share of Russia's gas exports to Western Europe pass through Ukraine. Gazprom wants to raise Ukraine's price to the market level.

Central Asian countries have extensive energy ties to Russia stemming from the numerous transportation routes that go through Russia. Russia initially opposed western investment in Caspian Sea energy projects, insisted that oil from the region be transported through Russian territory to Black Sea ports, and argued for equal sharing of Caspian Sea oil and gas. But it has become more agreeable, and even cooperative with, western projects; and it has signed an agreement with Azerbaijan and Kazakhstan on Caspian seabed borders essentially based upon shore mileage.

In East Asia, China, Japan, and South Korea, are trying to gain access to the largely undeveloped energy resources of eastern Siberia, as those countries strive to meet their increasing energy needs while reducing dependence on the Middle East. China and Japan appear to be engaged in a bidding war over Russian projects and are contesting access to Russian rival oil pipeline routes.

9. SUMMARY: HOW MUCH RUSSIAN ENERGY IS GOOD FOR EUROPE?

The situation between Europe and Russia is different. 60% of Russian export revenue comes from energy. About half of that is exports to the EU. So Russia may be more dependent on the EU than the EU is on Russia. European energy dependence will increase over the foreseeable future as North Sea production declines. According to official forecasts the EU will import 70% of its energy by 2030. It is extremely risky mainly for countries depending only on one supplier – there belongs Slovakia as well.

The need of diversification of energy sources underlined even decision of Russia to interrupt of the oil supply through Družba pipeline, and in January 2006 Russia interrupted the gas supply via the Ukraine. EU realised its dependence on that “energy giant”, which supplies 25% of the oil and gas to EU [5].

Since then, EU has tried to conclude an agreement about energy cooperation with Russia, which would include even some guaranties of supply. According to the European Commission, EU must strengthen the relationships with conterminous African countries exporting oil and gas.

The European Commission says in the Resolution about a new energy policy (10th January 2007) that the initiation of “a general African-European energy relationship” should be one of the priorities of EU in international energy policy together with energy relationship with Russia. “Importance of Africa, as a energy supplier, in last few years, has increased significantly. Its potential is however bigger.”, says report. It also says that one part of the dialogue should be the questions about a safety of supply, sustainable using of the resources, and respect of the good management principles.

The European Commission proposes institutionalization of regional energy market, which would be a part of its neighbourhood policy to the Western Balkans, as well as, to the countries as Moldavia, Turkey, Ukraine and Norway. The European Commission also requires for strengthen of energy relationships with the northern Africa suppliers and the transit countries as Algeria, Egypt and Libya [3, 4].

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