

# Which Country Is the Largest Oil Producer in the World – the USA, Russia or Saudi Arabia: The Question of Measurement – What and How

**Eugene Khartukov**

Department of Management and Marketing, Moscow State Institute, University for International Relations (MGIMO MFA), Moscow, Russia

**Email address:**

[khartukov@gmail.com](mailto:khartukov@gmail.com)

**To cite this article:**

Eugene Khartukov. Which Country Is the Largest Oil Producer in the World – the USA, Russia or Saudi Arabia: The Question of Measurement – What and How. *American Journal of Energy Engineering*. Vol. 9, No. 1, 2021, pp. 8-18. doi: 10.11648/j.ajee.20210901.12

**Received:** January 11, 2021; **Accepted:** February 17, 2021; **Published:** March 26, 2021

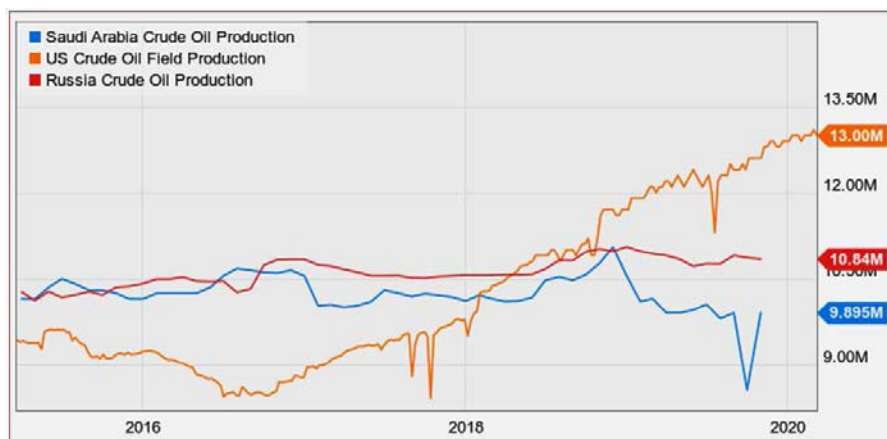
**Abstract:** Current and past statuses and dynamics of oil production and methods of oil measurements in different countries – under different temperatures and pressures – are considered and analyzed. The author uses methods of comparative and systematic analyses, which are implemented for assessing oil production in the USA, Saudi Arabia and Russia – the world's leading oil producers – and globally (in the world's context) in the past, currently and in the foreseeable future (throughout 2050). Crude oil and field (crude + lease NGLs) are considered. Oil developments in the USA, Saudi Arabia and Russia are analyzed separately with their main oil fields being covered. In the past a status of the world's largest oil producer was taken in rotation by Russia and Saudi Arabia. Before 1992 the world supremacy in oil belonged to Russia but afterwards and until 2014 – mainly to Saudi Arabia. The article mainly concludes that now (since 2014) the USA produce more oil (crude oil + field condensate) than any other country of the world, even without accounting for indigenous biofuel liquids and mostly thanks to the massive tight-oil production.

**Keywords:** Crude Oil, Natural Gas Liquids/Condensate, Temperature, Pressure, STP, The USA, Russia, Saudi Arabia

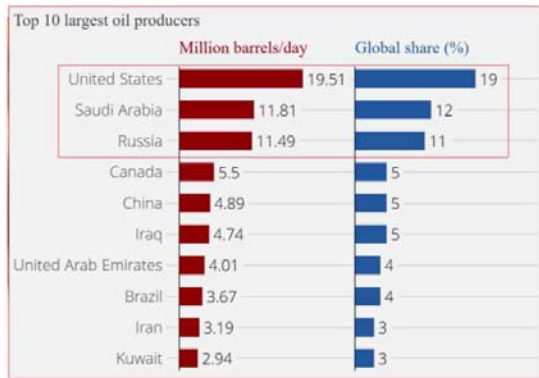
## 1. Introduction

It is widely accepted that the current top oil producers are the USA, Russia and Saudi Arabia, which produced all together in

2019 some two fifths of the world's field production of oil (that is of the global crude oil and lease condensate output) (*Figures 1-3*), but there are some nuances... (*see below*).



**Figure 1.** Monthly Oil Production in Russia, the USA and Saudi Arabia in 2011-2019, in mln b/d [1].

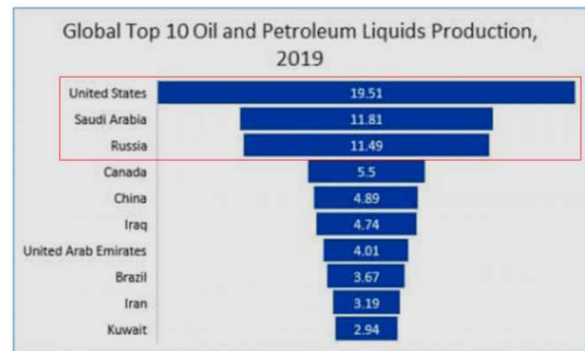


**Figure 2.** Oil Production (in mln b/d) in the USA, Russia and Saudi Arabia and Shares of These Producers in Global Oil Supply (in %) in 2019.

Source: Ten largest oil producers

<https://www.valuwalk.com/2020/06/largest-oil-producers-2020> [2]

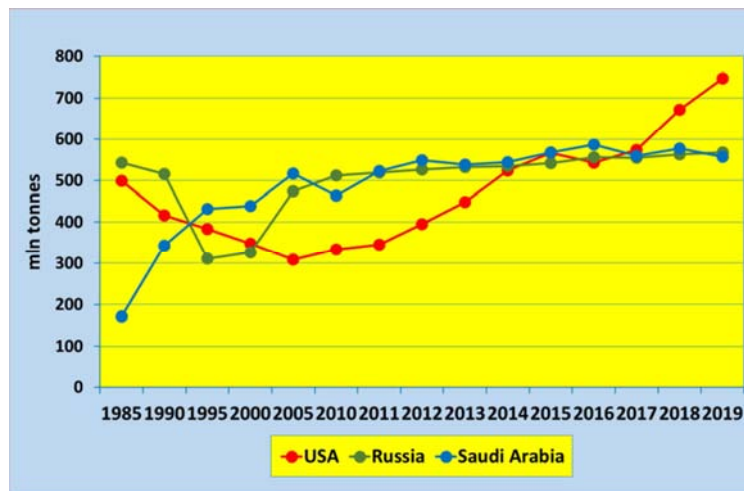
Individually speaking, Saudi Arabia is not king of the oil production hill, for its nemesis – the country that sought to undo every production quota OPEC could come up with, is the United States. On its own, the United States produced 19.51 million barrels of oil (and other petroleum liquids) per day, besting both Saudi Arabia and Russia, and controlling 19% of the world's oil supplies (Figure 3).



Source: <https://oilprice.com/Energy/ Crude-Oil> [3]

**Figure 3.** Field Oil Production in the USA, Saudi Arabia and Russia in 2019, in mln b/d.

In its turn, the highly reliable statistics of BP (with actual annual data for 2020 being expected only in June-July 2021) tell that the USA, Russia and Saudi Arabia produced in 2019 746.7, 568.1 and 556.6 mln tonnes of crude oil and other oil liquids (NGL) correspondingly (or nearly 42% as a total) (Figure 4).



Source: compiled and drawn by the author based on <https://www.bp.com/content/dam/bp/media-assets/statistical-review-of-world-energy-june-2020> [4]

**Figure 4.** Annual Crude Oil and Field NGLs Production in the USA, Russia and Saudi Arabia in 1985-2019, in mln tonnes.

### 1.1. Russia

At the end of 2016, according to the Russian statistical agency (Roskomstat), the country once again became the world's largest oil producer, having outstripped in December Saudi Arabia (10.509 mln b/d compared with 10.424 mln b/d in November vs. 10.474 and 10.623 mln b/d in Saudi Arabia) [5] (see also Table 3).

#### 1.1.1. Current Status

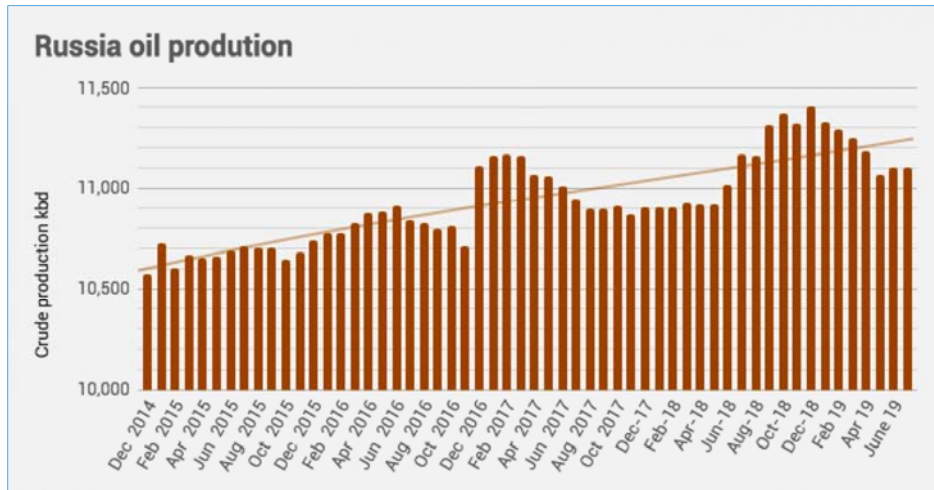
As per the well-informed US Energy Information Administration (EIA/DoE), Russia's production of crude oil + lease condensate was on the average (in kb/d) as follows: in 2015 -10,551, in 2016 – 10,580, in 2017 – 10,759 and in

2018 – 10,847 [6].

**Table 1.** Production of Crude Oil and Lease/Mixed Condensate in Russia in 2016-2020 (according to the CDU/RF Minenergo).

	Mln tonnes	Mln b/d
2016	547.5	10.965
2017	546.8	10.985
2018	555.84	11.166
2019	560.2	11.246
2020	470.22	9.414E
2016-2020	2 680.36	10.755E

Source: compiled and calculated on the basis of Ministerstvo energetiki RF <https://minenergo.gov.ru/activity/statistic> [7]

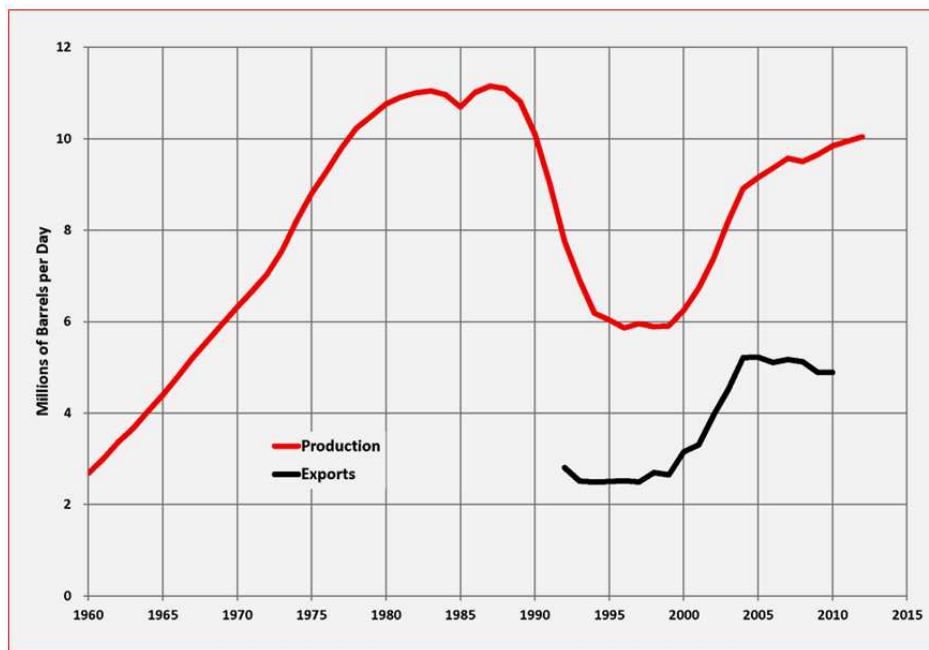


Source: <https://www.themoscowtimes.com/2019/08/07> [6]

**Figure 5.** Monthly Crude Oil and Field Condensate Production in Russia in 2014-2019, in kb/d.

### 1.1.2. A Bit of History

Talking about the history, Russia's oil production reached its peak in 1987 (11,416 mln b/d of field oil, according to BP) before a great dip of the 90s, caused by total disorganization of the industry (and the national economy), – down to less than 6 mln b/d in the second half of the 90s (Figure 6).



Source: Russian crude oil production [https://en.wikipedia.org/wiki/Petroleum\\_industry\\_in\\_Russia#/media/File:Russia\\_Oil\\_Production](https://en.wikipedia.org/wiki/Petroleum_industry_in_Russia#/media/File:Russia_Oil_Production) [9].

**Figure 6.** Russian Oil Production and Exports in 1960-2015, in mln b/d.

It is noteworthy that remaining oil reserves of Russia are considered hard-to-recover ones and are located quite unevenly. In 2019, up to 80% of Russia's recoverable oil reserves was associated with operating oil fields while a share of hard-to-recover oil reserves was estimated by Russia's Minprirody at 60% [10]. Most of oil reserves is concentrated at 11 unique ( $\geq 300$  mln tonnes per Russian classification) and 179 large ( $\geq 30$  mln tonnes of recoverable oil) fields of mainly the Khanty-Mansi autonomous okrug

(KhMAO), in the Western Siberia, which contain as a total some 70% of reserves and account for two thirds of oil production in the country [11].

Russian oil production was growing despite Russia participated in the so-called *OPEC + deal*. It is well known that, in December 2016, 24 oil producers (13 OPEC members and 11 non-member countries) had struck a deal to withdraw from the world oil market since the start of 2017 1.8 mln b/d of their combined oil production (compared with October 2016) to buoy

up the declining world oil prices. Russia pledged to cut its oil production by 300 kb/d (but I wonder which Russian profitably oil-producing company was about to do it as it was the promise of the Russian officials who – by law – have no right to regulate an entity's output... Neither it would be possible to command any decrease in national oil production as the oil industry in Russia is currently almost entirely privatized ...) while Saudi Arabia – the leading cutter – obliged to reduce its national oil production by 486 kb/d. The accord was extended several times and its terms were changed depending on the market's status. In particular, it was decided until the end of 2019 to decrease the collective oil production by 1.2 mln b/d (compared with October 2018) while the combined cut in the first quarter of 2020 was set at 1.7 mln b/d.

In December 2019, Russia managed to exclude gas condensate from the agreement's all national pledges to make them in line with the OPEC quotas. As a result, at the end of 2019, the RF should lower its oil output by from a new basic level of 10.626 mln b/d (instead of 11.421 mln b/d of crude and field condensate) while in the 1Q of 2020 – only by 300 kb/d [12]. Moreover, the practical difficulty lies in the fact that neither the Roscomstat, the Russian statistical state agency, nor the CDU TEK, the RF Minenergo's official information service, report Russian oil production excluding condensate...

Furthermore, at least since the beginning of 2020, the RF Minenergo started to falsify Russian oil production data to make them more consistent with the OPEC + pledge.

## 1.2. Saudi Arabia

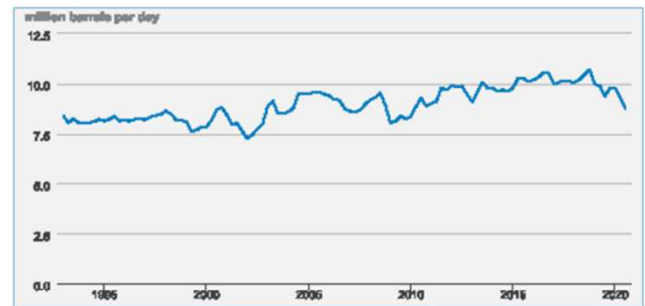
With its some 260+ remaining known oil reserves is the world's largest holder of conventional oil and can keep

production at 12 mln b/d until at least 2033.

### 1.2.1. Current Situation

As for the recent years, the omniscient U.S. Energy Information Administration of the US Minenergo (EIA/DoE) determines it in Saudi Arabia as follows (in kb/d, average): 2015 – 10,168; 2016 – 10,461; 2017 – 10,134; 2018 – 10,425 and 2019 (showing an obvious decrease) – 9,826 [13].

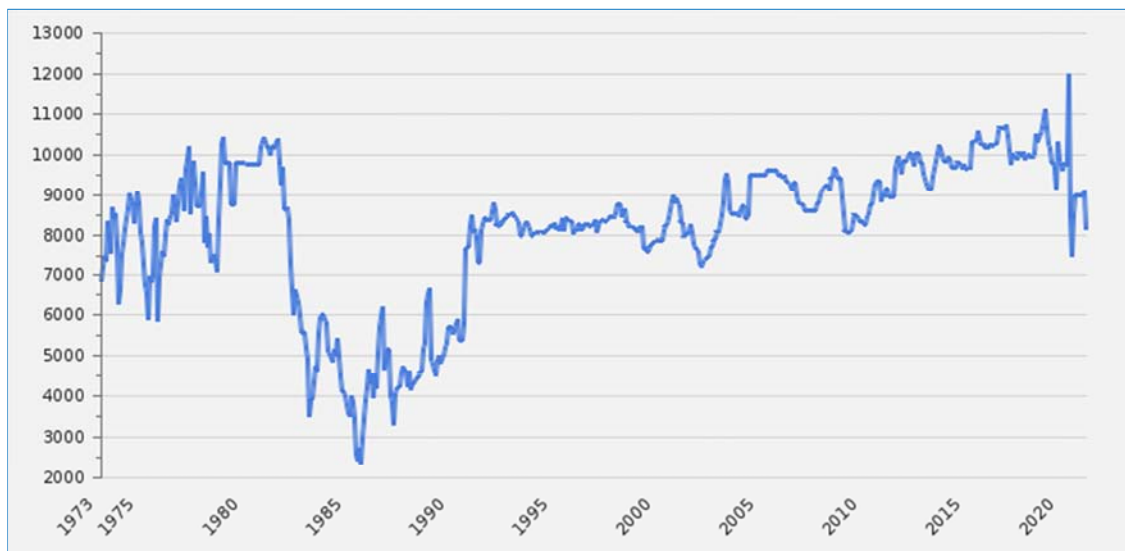
As for the kingdom's *quarterly* field oil production, it, according to the US EIA/DoE, has gone down from 9,884 mln b/d in the last quarter of 2019 to 8,821 mln b/d in the 3Q of 2020 (Figure 7).



**Figure 7.** Quarterly Production of Crude Oil + Field Gas Condensate in Saudi Arabia in 1992-2020 (according to EIA), in mln b/d.

Source: <https://www.eia.gov/international/data/world/petroleum-and-other-liquids/quarterly-petroleum-and-other-liquids-production/SAQ> [14]

According to the London-based CEIC Data services, Saudi Arabia's production of crude oil (that is excluding condensate or other field NGLs) in November 2020 was only 8.963 kb/d (Figure 8).



Source: <https://take-profit.org/en/statistics/crude-oil-production/saudi-arabia> [15]

**Figure 8.** Monthly Production of Crude Oil in Saudi Arabia in 1973-2020 (according to CEIC), in kb/d.

As it is known, Saudi Arabia restricts and curtails its oil output under actually self-imposed national production quotas and as an active participant of the OPEC+ deal (see above).

Saudi oil production peaked in 2016 (at nearly 12.41 mln b/d, according to BP), ranking 2nd in the world, and was annually lowering since.



Figure 9. Location of Saudi Main HC Fields.

### 1.2.2. Main Fields

Current Saudi production comes mostly from five giant but

**Table 2.** Oil Production Capacity and Production in Selected Countries (in April 2020 and as of the start of 2020), in kb/d. (1) April production vs recent peak. (2) Assumes 400 kb/d from Saudi-Kuwait Neutral Zone

	Spare capacity, in kb/d	
	Immediately available (1)	Additional available by January 2020 (2)
Saudi Arabia	1,190	200
UAE	270	180
Iraq	120	260
Kuwait	200	0
Russia	220	150
Subtotal	2,000	790
	Production in April, in kb/d	Potential Downside, in kb/d
Iran	2,750	– 650
Venezuela	850	– 500
Subtotal	3,600	– 1,150

Source: Oil Supply Crunch to Test OPEC's Spare Capacity <https://www.oilandgas360.com/oil-supply-crunch-to-test-opecs-spare-capacity> [17]

### 1.2.4. Outlook

The future of the kingdom's oil production is, however, quite gloomy, which is felt even now. Due to natural depletion of discovered oil fields and the recent lack of major discoveries in the country, its oil output goes down, which is especially the case for the foreseeable future. Unsurprisingly,

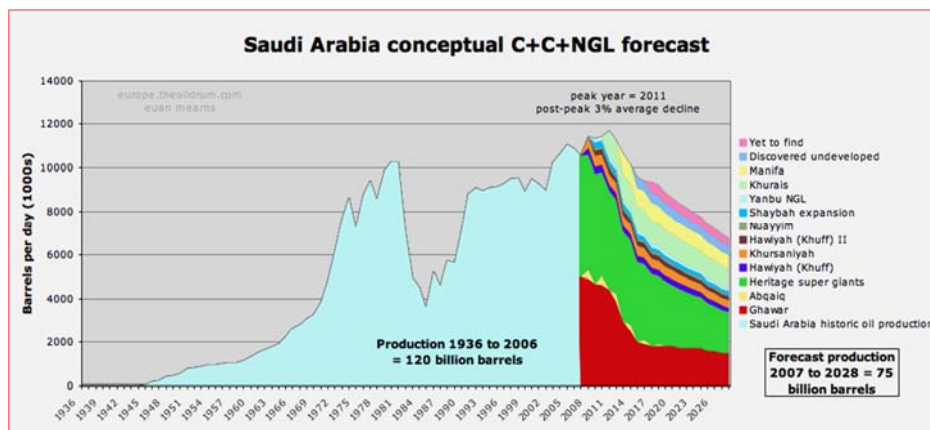
aging and fast-depleting oilfields (Ghawar, Safaniya, Hanifa, Khurais and Zuluf), all of which are more than 70 years old and are being kept producing by a huge injection of water. They have over the years accounted for more than 90% of Saudi oil production with the Ghawar field providing some half of the total [3].

Ghawar, in the Eastern Province, is the largest conventional oil field in the world located at 280 km × 30 km. It was discovered in 1948, started production in 1951, and is owned and operated by Saudi Aramco. Some sources claim that the Ghawar peaked in 2005, though this is denied by the field operators. The field holds estimated 170 billion barrels of original oil in place (OOIP), with some 140 bln bbl being regarded as recoverable [16].

### 1.2.3. Production Capacity

Saudi Arabia has the world's largest spare capacity in oil production and used to utilize it for being a swing oil producer within the OPEC (as well as globally) (Table 2).

already in 2007 some Western oil analysts (particularly, Euan Mearns of the University of Aberdeen) foresaw Saudi Arabia's annual oil output going down to some 6 mln b/d by the end of the 20s from the pre-dicted peak of nearly 12 mln b/d in around 2011 (Figure 8).



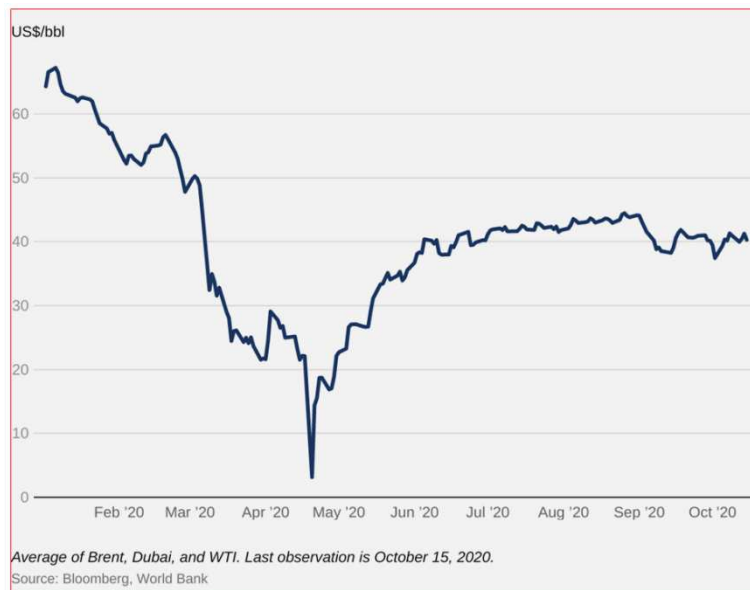
Source: <http://theoil Drum.com/node/9321> [18]

Figure 10. Oil Production in Saudi Arabia in 1936–2028, in kb/d.

Back in the beginning of 2020, there were quite difficult negotiations on production cuts between Saudi Arabia and Russia within the OPEC+ deal (*see above*), which were immediately labeled by Western journalists as the price war. In fact, there was no war as such, simply Russian officials did not agree with initially recommended cuts (and the deal was crucially at stake) but the impasse had ended in April 2020 and the OPEC + agreement was extended further, with the pledged cuts of nearly 10 mln b/d [19]. As a result, average spot price of Brent blend and of Dubai and WTI crudes has gone up from some \$3/bbl at end-April and got stabilized at around \$40/bbl in the 3Q of 2020 (*Figure 12*).



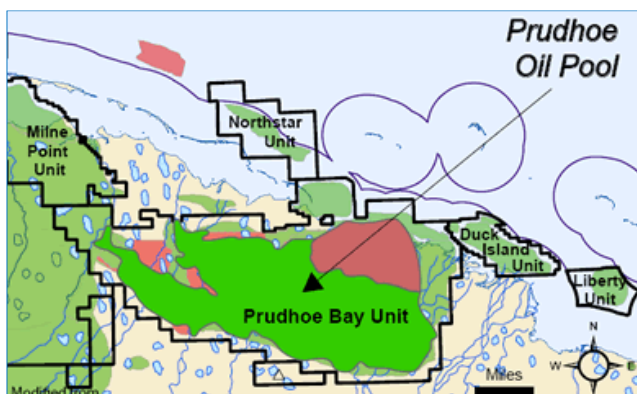
**Figure 11.** Friendly Meeting of Saudi and Russia Leaders in April 2020.



Source: <https://img.datawrapper.de/JDTXk/full> [20]

**Figure 12.** Dynamics of Average Spot Price of Brent, Dubai and WTI Oils in January-October 2020, in US\$/bbl.

Saudi Arabia's economy relies heavily on petroleum. According to the *Forbes* magazine, petroleum accounts for roughly 87 percent of the country's budget revenues, 32 percent of GDP, and 81 percent of export earnings [21]. A look at the distribution of global oil reserves by country shows that only Venezuela possesses a higher share in global oil reserves than this Arab state [22].



**Figure 13.** Location of the Prudhoe Bay Field.

### 1.3. USA

In October 2018, thanks to aggressively growing “shale-oil” (tight-oil) production, the country, which produced in that month as a total 11,554 kb/d of crude oil and lease condensate, according to the EIA [23], has become the world's largest oil producer, having overtaken this world supremacy status from Russia (*see also Table 3*).

#### 1.3.1. Where

The largest oil-producing fields (formations) in the USA include the Permian in Texas and in New Mexico, the Eagle Ford Shale in Texas, and the Bakken formation in North Dakota and Montana, Prudhoe Bay field in northern Alaska (by the way, the largest oil field in both the United States and North America, discovered in 1967 and located at 213,543 acres), the Wattenberg Field in Colorado (producing both gas and oil), the Shenzi field in the Gulf of Mexico, the Kuparuk River field in northern Alaska, west of the Prudhoe Bay, the Midway-Sunset oil field in California, the Atlantis oil field in the Gulf of Mexico, and Sugarkane field in Texas (*Figure 14*).



Source: <https://www.britannica.com/science/petroleum> [24]

**Figure 14.** Main Petroleum Sedimentary Basins and Fields of North America.

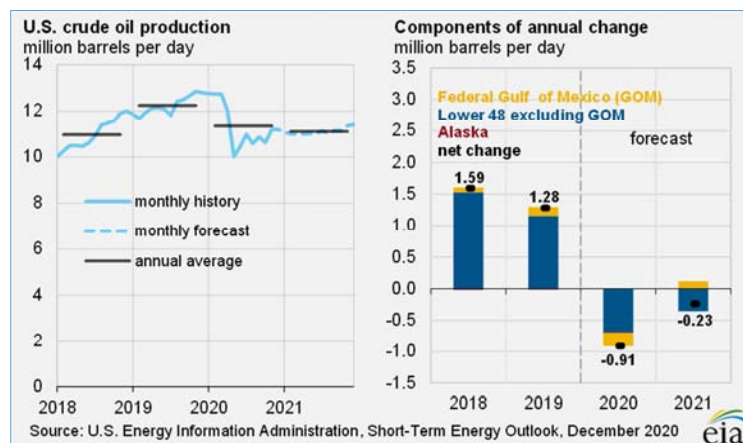
All in all, 100 top oil fields/formations account for over 55% of the country's proved oil reserves (more than 26.5 bln bbl out of 47.1 bln bbl at the end of 2018) and nearly half of its oil production [23].

### 1.3.2. Prospects

As per the EIA, average field oil production in the USA actually was (in kb/d) 12,781 in 2015, 8,852 in 2016, 9,371 in 2017, 10,964 in 2018 and 12,248 in 2019 [25] and was

predicted at the very end of 2020 – under a reference scenario – to go slightly down by 2050 to 11.96 mln b/d. Included was the tight-oil production, which was 7.99 mln b/d (65% of the total) in 2019 and 8.74 mln b/d (73%) in 2050 [26].

Within its near-term forecast, EIA expects U.S. field crude oil production to fall from the average 12.25 million b/d in 2019 to 11.3 million b/d in 2020 and 11.1 mln b/d in 2021 (*Figure 15*) [27, 28].

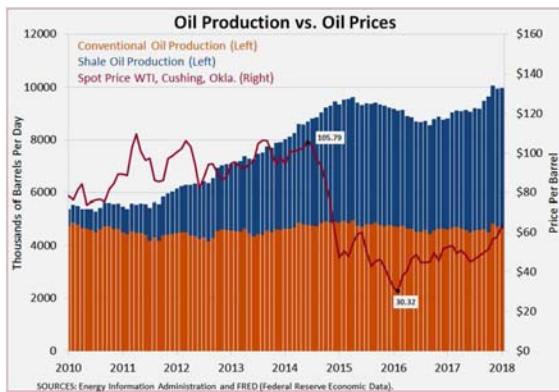


Source: [https://www.eia.gov/outlooks/steo/report/us\\_oil](https://www.eia.gov/outlooks/steo/report/us_oil) [27]

**Figure 15.** Forecast Field Oil Production in the USA during 2020-2021, in mln b/d.

Moreover, the estimated pandemic-driven 0.8 million bpd year-over-year out-put fall in 2021 is the largest annual decline in US crude oil production on record, the EIA says [28].

At any rate, “shale-oil” (tight-oil) production was instrumental in rising US total oil output up to and over 10 mln b/d – while conventional oil production was roughly stable – at around 4,000-5,000 kb/d, – tight-oil one was dramatically increasing with only inconsiderable decrease during an obvious fall of domestic oil prices in 2014-2016 (*Figure 16*).



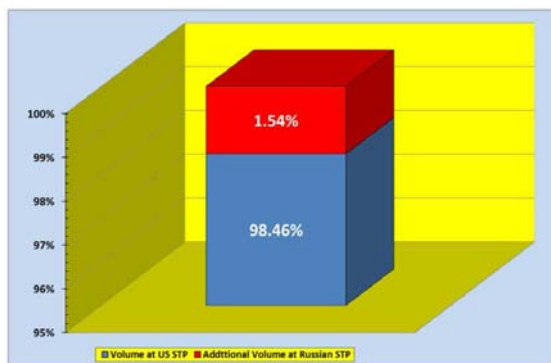
Source: <https://www.stlouisfed.org/on-the-economy/2018/may/rise-shale-oil> [29]

**Figure 16.** US Oil Production in 2010-2018, in kb/d.

## 2. What Should Be Noted

It is important not to overlook the fact that available oil production data usually relate to the production of crude oil + lease (or mixed/field) condensate.

Bearing in mind the differences in measuring oil volumes at standard temperature and pressure (or, shortly, STP), which are currently accepted in Russia and the USA (and actually worldwide, excluding Russia and some major buyers of Russian crude), it noteworthy that in order of bringing the Russian oil volumes (traditionally and officially measured at 20°C and 760 mmHg) to the US conditions (60°F and 14.696 psia) one needs to decrease the Russian volume by 1.54% (*Figure 17*) [30].



**Figure 17.** Oil Volumes under the U.S. and Russian Current STP, in %.

Source: Khartukov, E. and Novak, A. Measuring Oil and Gas Volumes in Different Countries: The USA and Russian Cases. – Oilman, January-February 2021, pp. 28-30 [30]

## 3. Who Is the Leader

All in all, if we consider a period since the middle of the 80s, when oil production data for Russia started to be published, and typical field oil production data (that of crude oil + lease condensate), the world's largest oil producer varied as follows: until 1992 it was Russia, then until 2009 a status of the biggest oil-producing country was surely held by Saudi Arabia, then again – for a short time, until 2011 – it was overtaken by Russia, in 2011 Saudi Arabia anew though shortly has acquired the status of the world's oil leader, in 2016 this status has moved from the USA for two years only back to Russia and finally since 2018 the USA have become the world's largest oil producer – thanks to their fast-growing tight-oil production – for how long?... (*Table 3*).

**Table 3.** Annual Field Oil Production by the World's Largest Oil-Producing Countries in 1985-2020, in kb/d.

Year	USA	Russia	Saudi Arabia
1985	10,580	10,863	3,601
1986	10,231	11,247	5,208
1987	9,944	11,416	4,450
1988	9,765	11,373	5,656
1989	9,159	11,070	5,636
1990	8,914	10,342	7,106
1991	9,076	9,264	8,820
1992	8,868	7,978	9,092
1993	8,583	7,119	8,893
1994	8,389	6,371	8,983
1995	8,322	6,236	8,974
1996	8,295	6,062	9,087
1997	8,269	6,171	9,005
1998	8,011	6,110	9,267
1999	7,731	6,119	8,524
2000	7,733	6,583	9,121
2001	7,670	7,106	8,935
2002	7,624	7,755	8,207
2003	7,368	8,602	9,628
2004	7,250	9,335	10,306
2005	6,901	9,598	10,839
2006	6,825	9,834	10,671
2007	6,857	10,057	10,269
2008	6,783	9,965	10,655
2009	7,267	10,152	9,709
2010	7,558	10,379	9,865
2011	7,883	10,533	11,079
2012	8,926	10,656	11,622
2013	10,099	10,807	11,393
2014	11,801	10,860	11,519
2015	12,781	11,007	11,998
2016	8,852	10,551	10,461
2017	9,371	10,580	10,134
2018	10,964	10,759	10,425
2019	12,248	10,847	10,145
2020	11,100F	9,414E	9,140E

Note: 1985-1999 – production of crude oil + field NGLs, according to BP; from 2000 – field production (crude oil + lease/field condensate), according to the EIA

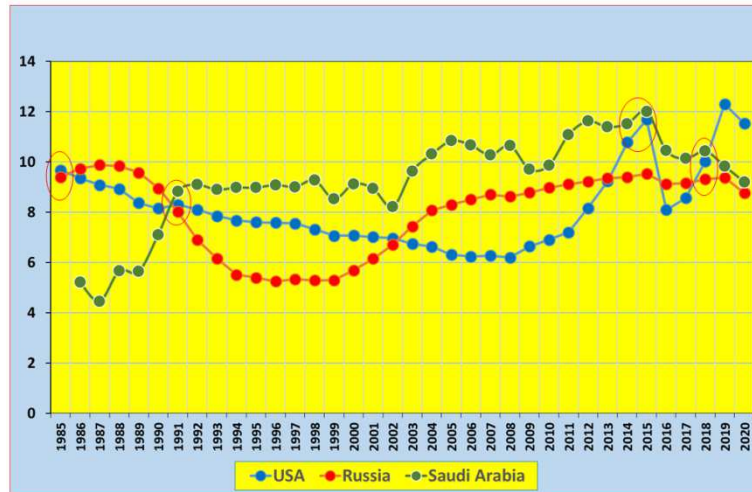
Source: compiled by the author based mainly on <https://www.bp.com/statisticalreview> [4] and <https://www.eia.gov/international/data> [6]

## 4. No NGL

However, if we consider only crude oil (that is exclude lease/field condensate or any other NGLs, a lot of which is produced in Russia – on the average, some 0.75 mb/d in the recent years or around 7% of its total oil output – and in the USA – 5.4 mb/d (0.44%) in 2019) [23], some differences in the world's supremacy in 1985, 1991, 2014-2015 and 2018 occur but they, though important for those years, do not considerably change the general picture (*Figure 19*).



**Figure 18.** It is how NGLs look.

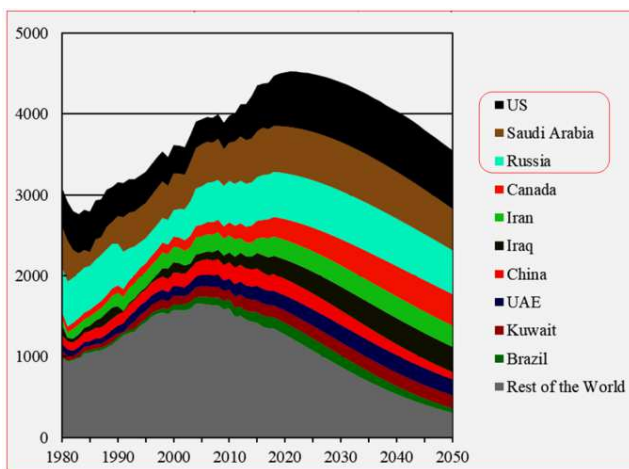


**Figure 19.** Annual Production of Field Oil by the World's Largest Oil-Producing Countries in 1985-2020, in kb/d.

Source: estimated and drawn by the author mainly based on Table 3, <https://take-profit.org/en/statistics/crude-oil-production/saudi-arabia> [15], <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS1/2&f> [23]

## 5. Outlooks Throughout 2050

In line with the last annual report of the international peak-oil organization (ASPO), the 3 top oil producing countries will produce by 2050 slightly less of their oil (*Figure 20*).

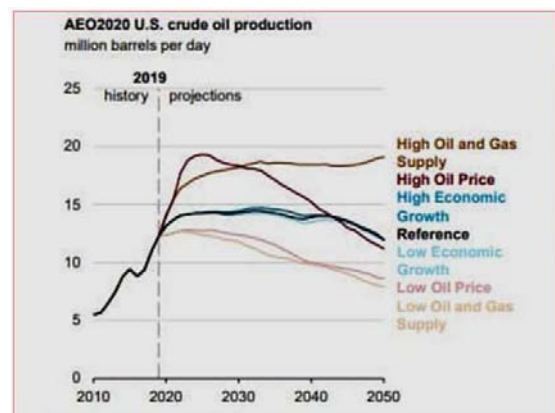


Source: <http://peakoilbarrel.com/world-oil-2018-2050> [31]

**Figure 20.** Actual and Projected Field Oil Production in 1980-2050, in mln tonnes.

### 5.1. USA

According to the last long-term forecast (the beginning of 2021) of the Energy Information Administration of the US Department of Energy (EIA/ DoE), field oil production in the country must decrease by 2050, under a reference scenario, from a maximum of more than 14 mln b/d in 2027-2035 to a bit less than 12 mln b/d (*Figure 21*).



**Figure 21.** The USA's Field Annual Oil Production in 2010-2050 (according to EIA).

Source: Saudi Arabia Eyes Total Dominance In Oil  
<https://oilprice.com/Energy/Crude-Oil> [3]

### 5.2. Russia

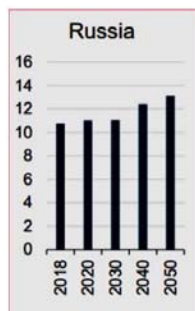
As for Russia's long-term prospects, the Moscow-based Energy Research Institute of The Russian Academy of Sciences (ERI RAS) predicts oil production by 2040 in its basic scenario the following way (Figure 22):

	2010	2015	2020	2025	2030	2035	2040
N. America	12,727	16,233	17,169	18,942	19,161	19,041	19,041
Canada	3,187	3,804	3,864	5,597	6,832	7,111	7,170
Mexico	2,908	2,689	2,131	1,992	1,593	1,593	1,574
USA	6,633	9,720	11,194	11,353	10,736	10,337	10,278
S & C America	7,529	8,565	9,381	10,258	10,397	10,616	10,776
Venezuela	2,908	3,107	3,107	3,207	3,286	3,306	3,326
Brazil	2,211	3,207	4,242	4,940	5,059	5,159	5,238
Ecuador	518	339	319	299	319	478	578
Others	1,892	1,912	1,713	1,813	1,753	1,693	1,613
Europe	3,904	2,908	3,247	3,087	2,788	2,649	2,629
Norway	1,972	1,613	1,952	1,912	1,653	1,593	1,574
Great Britain	1,255	817	757	717	717	657	637
Others	697	478	558	438	398	398	418
FSU	13,245	13,564	13,405	13,385	13,604	13,903	14,181
Russia	10,058	10,397	10,218	10,058	9,780	9,481	9,322
Kazakhstan	1,633	1,633	1,633	1,892	2,350	2,908	3,326
Azerbaijan	1,016	1,016	1,036	996	1,036	1,036	1,056
Others	558	498	518	438	458	458	498
Asia	8,007	7,131	7,708	7,589	7,230	6,832	6,792
China	4,043	3,784	4,402	4,083	3,864	3,506	3,525
India	817	856	817	737	717	617	598
Aus. & NZ	498	478	478	538	558	617	677
Others	2,649	2,012	2,012	2,251	2,091	2,111	1,992
Middle East	24,240	26,869	29,200	30,255	32,725	34,159	34,956
Iran	4,163	3,286	3,486	3,585	3,585	3,705	3,864
Iraq	2,430	4,920	5,756	5,896	7,350	7,748	7,788
Saudi Arabia	9,441	10,078	10,616	10,377	10,457	10,716	11,074
UAE	2,649	3,207	3,386	3,326	3,446	3,386	3,227
Others	5,577	5,378	5,975	7,071	7,907	8,585	9,003
Africa	9,580	9,680	9,262	10,278	10,377	10,815	10,497
Egypt	697	637	598	617	657	617	617
Libya	1,554	1,733	1,773	1,693	1,992	2,211	2,390
Nigeria	2,410	2,649	2,271	2,211	1,673	1,773	1,673
Angola	1,813	1,434	1,394	1,872	1,992	1,872	1,793
Others	3,107	3,227	3,207	3,864	4,063	4,342	4,043
OPEC	33,203	36,709	38,641	40,095	42,684	44,656	44,715
Non-OPEC	46,030	48,221	50,731	53,678	53,599	53,360	54,157
World	79,233	84,930	89,371	93,773	96,283	98,016	98,872

Source: <http://peakoilbarrel.com/russias-take> [32]

**Figure 22.** Oil + Lease Condensate Production in 2010-2040, in mln b/d (originally converted from tonnes using 7.27 barrels per tonne).

In its turn, the all-knowing EIA predicts, however, that Russian annual field oil production must go up by 2050 from less than 11 mb/d to more than 13 mb/d and Russia must overtake the USA in this respect (Figure 23).

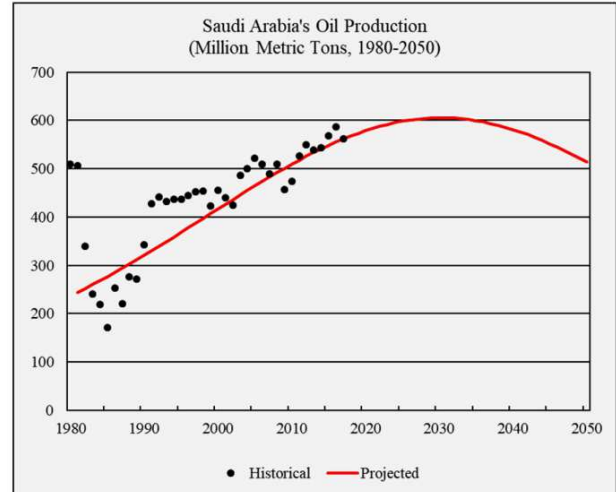


**Figure 23.** The EIA's Ffrecast of Russia's Annual Field Oil Output till 2050, in mln b/d.

Source: <https://www.rt.com/business/469653-russia-overtakes-us-oil-production> [33]

### 5.3. Saudi Arabia

Based on the ASPO estimates, the Saudi oil production is projected to peak in 2030 at 606 million tonnes and to lessen to around 500 mln t per year by the middle of this century (Figure 24).



Source: <http://peakoilbarrel.com/world-oil-2018-2050> [31]

**Figure 24.** Actual and Projected Annual Field Oil Production in Saudi Arabia in 1980-2050, in mln tonnes per year.

## 6. Conclusion

So, based on the above considerations, and if all field NGLs are included, currently, since 2019, the world's largest oil producer is the USA, followed by Saudi Arabia and Russia, and this is unlikely to change in near future.

## References

- [1] The United States has become the world's biggest crude oil producer ahead of Russia and Saudi Arabia [Available in the Internet at: <http://fingfx.thomsonreuters.com/gfx/editorcharts/OIL-PRODUCTION>] (Accessed 20 December 2020).
- [2] Ten largest oil producers [Available in the Internet at: <https://www.valuwalk.com/2020/06/largest-oil-producers-2020/>] (Accessed: 13 January 2021).
- [3] Saudi Arabia Eyes Total Dominance In Oil [Available in the Internet at: <https://oilprice.com/Crude-Oil/>] (Accessed: 13 January 2021).
- [4] Oil Production [Available in the Internet at: <https://BP-Statistical-Review-of-World-Energy-June-2020/>] (Accessed: 3 January 2021).
- [5] Russia and Saudia have crossed hoses [Available in the Internet at: [http://sr.fondedin.ru/new/fullnews\\_arch\\_to.php?subaction=showfull&id=14913074](http://sr.fondedin.ru/new/fullnews_arch_to.php?subaction=showfull&id=14913074)] (Accessed: 31 December 2020).
- [6] International - U.S. Energy Information Administration [Available in the Internet at: <https://www.eia.gov/international/data/>] (Accessed: 31 December 2020).

- [7] Russian Oil and Gas Output Continues Rising Despite Setbacks [Available in the Internet at: <https://www.themoscowtimes.com/2019/08/07>] (Accessed: 31 December 2020).
- [8] Ministerstvo energetiki RF [Available in the Internet at: <https://minenergo.gov.ru/activity/statistic>] (Accessed: 1 January 2021).
- [9] Russian crude oil production [Available in the Internet at: [https://en.wikipedia.org/wiki/Petroleum\\_industry\\_in\\_Russia#/media/File:Rus-sia\\_Oil\\_Production](https://en.wikipedia.org/wiki/Petroleum_industry_in_Russia#/media/File:Rus-sia_Oil_Production)] (Accessed: 1 January 2021).
- [10] Hard-to-recover oil reserves are estimated in the Minprirody [Available in the Internet at: <https://www.dp.ru/a/2019/08/27>] (Accessed: 1 January 2021).
- [11] Where there is more oil? [Available in the Internet at: [https://www.cdu.ru/tek\\_russia/issue/2019/5](https://www.cdu.ru/tek_russia/issue/2019/5)] (Accessed: 1 January 2021).
- [12] Rossiya postavila postsovetitskiy record po dobyche nefti v 2019 g. [Available in the Internet at: <https://neftegaz.ru/news/dobycha/516403>] (Accessed: 1 January 2021).
- [13] International - U.S. Energy Information Administration [Available in the Internet at: <https://www.eia.gov/international/data>] (Accessed: 1 January 2021).
- [14] International - U.S. Energy Information Administration (EIA) [Available in the Internet at: <https://www.eia.gov/international/data/world/petroleum-and-other-liquids/quarterly-petroleum-and-other-liquids-production/SAQ>] (Accessed: 1 January 2021).
- [15] Saudi Arabia Crude Oil: Production [Available in the Internet at: <https://take-profit.org/en/statistics/crude-oil-production/saudi-arabia>] (Accessed: 1 January 2021).
- [16] Ghawar Field [Available in the Internet at: [https://en.wikipedia.org/wiki/Ghawar\\_Field](https://en.wikipedia.org/wiki/Ghawar_Field)] (Accessed: 1 January 2021).
- [17] Oil Supply Crunch to Test OPEC's Spare Capacity [Available in the Internet at: <https://www.oilandgas360.com/oil-supply-crunch-to-test-opecs-spare-capacity>] (Accessed: 1 January 2021).
- [18] Tech Talk - The "Best of the Rest" in Saudi Arabia [Available in the Internet at: <http://theoildrum.com/node/9321>] (Accessed: 1 January 2021).
- [19] OPEC + reaches deal to cut oil production by 9.7 million barrels per day [Available in the Internet at: <https://edition.cnn.com/2020/04/12/energy/opec-deal-production-cut>] (Accessed: 1 January 2021).
- [20] Crude oil price rising [Available in the Internet at: <https://img.data-wrapper.de/JDTXk/full>] (Accessed: 1 January 2021).
- [21] Saudi Arabia - Market Overview [Available in the Internet at: [https://www.export.gov/article?series=Country\\_Commercial\\_kav](https://www.export.gov/article?series=Country_Commercial_kav)] (Accessed: 3 January 2021).
- [22] Inflation in Saudi Arabia since 1985 [Available in the Internet at: <https://www.statista.com/statistics/268062>] (Accessed: 3 January 2021).
- [23] Petroleum & other liquids [Available in the Internet at: <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS1/2&f>] (Accessed: 1 January 2021).
- [24] Major-oil-producing-countries [Available in the Internet at: <https://www.britannica.com/science/petroleum>] (Accessed: 1 January 2021).
- [25] U.S. Field Production of Crude Oil [Available in the Internet at: <https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPUS-2&f>] (Accessed: 1 January 2021).
- [26] Annual Energy Outlook (AEO): Evaluation of AEO2020 Reference Case Projections Oil and Gas Supply [Available in the Internet at: <https://www.eia.gov/petroleum/supply>] (Accessed: 1 January 2021).
- [27] Short-Term Energy Outlook [Available in the Internet at: [https://www.eia.gov/outlooks/steo/report/us\\_oil](https://www.eia.gov/outlooks/steo/report/us_oil)] (Accessed: 26 December 2020).
- [28] US crude oil production forecast to fall in 2020, 2021 [Available in the Internet at: <https://www.aacom.tr/en/energy/stock-market>] (Accessed: 26 December 2020).
- [29] The Rise of Shale Oil 2021 [Available in the Internet at: <https://www.stlouisfed.org/on-the-economy/2018/may/rise-shale-oil>] (Accessed: 3 January 2021).
- [30] Khartukov, E. and Novak, A. *Measuring Oil and Gas Volumes in Different Countries: The USA and Russian Cases.* – *Oilman*, January-February 2021, pp. 28-30.
- [31] World Oil 2018-2050: World Energy Annual Report (Part 2) [Available in the Internet at: <http://peakoilbarrel.com/world-oil-2018-2050>] (Accessed: 13 January 2021).
- [32] Global and Russian Energy Outlook to 2040 [Available in the Internet at: <http://peakoilbarrel.com/russias-take>] (Accessed: 13 January 2021).
- [33] Russia will eclipse American oil production by 2050 – US energy agency <https://www.rt.com/business/469653-russia-overtakes-us-oil-production>] (Accessed: 13 January 2021).

## Biography



**Eugene Khartukov**, Professor of the Moscow State Institute/University for International Relations (MGIMO MFA), Head of the World Analyses and Forecasting Group (GAPMER) and of the Center for Petroleum Business Studies (CPBS) and Vice President (for Eurasia) of the Geneva-based Petro-Logistics SA. Author of more than 360 publications oil, gas and energy forecasting and speaker at over 170 international energy and economic fora