Table 2. The volume of oil and gas condensate production in Russia in 2014–2015, biggest Russian oil companies (Source: Central Dispatch Division of the Fuel and Energy Complex (TsDU TAeK))

<table>
<thead>
<tr>
<th>Company/Year</th>
<th>Production volume, mln tons</th>
<th>Share, %</th>
<th>Production volume, mln tons</th>
<th>Share, %</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Rosneft&quot;</td>
<td>190,898</td>
<td>36.24</td>
<td>189,202</td>
<td>35.43</td>
</tr>
<tr>
<td>&quot;Lukoil&quot;</td>
<td>86,571</td>
<td>16.43</td>
<td>86,654</td>
<td>16.04</td>
</tr>
<tr>
<td>&quot;Surgutneftegaz&quot;</td>
<td>81,425</td>
<td>15.68</td>
<td>81,622</td>
<td>15.54</td>
</tr>
<tr>
<td>&quot;Gazprom Neft&quot;</td>
<td>33,624</td>
<td>6.18</td>
<td>34,326</td>
<td>6.34</td>
</tr>
<tr>
<td>&quot;Tatneft&quot;</td>
<td>26,529</td>
<td>5.04</td>
<td>27,248</td>
<td>5.10</td>
</tr>
<tr>
<td>&quot;Bashneft&quot;</td>
<td>17,799</td>
<td>3.38</td>
<td>19,919</td>
<td>3.73</td>
</tr>
<tr>
<td>&quot;Slavneft&quot;</td>
<td>16,186</td>
<td>3.07</td>
<td>15,475</td>
<td>2.90</td>
</tr>
<tr>
<td>Total of above</td>
<td>433,032</td>
<td>82.21</td>
<td>433,446</td>
<td>81.16</td>
</tr>
<tr>
<td>Total volume of oil Produced in Russia</td>
<td>526,753</td>
<td>100</td>
<td>534,081</td>
<td>100</td>
</tr>
</tbody>
</table>

It is about underinvestment in the maintenance and replacement of wrecked or outdated infield oil pipelines which leads to the occurrence of numerous oil spills.

According to the State Report "On the State and Protection of the Environment in the Russian Federation in 2014", the RF Ministry of Natural Resources, with the reference to the data from the Central Dispatch Division of the Fuel and Energy Complex, provides data on the ruptures of infield oil pipelines in 2011–2014. The data on the 7 oil companies analyzed in the present study, as well as on the Russian oil industry in general, are provided in the Table 9.

For a better visualization the authors of the present study supplied this Table with an additional graphic in which the number of ruptures is given per a million of oil extracted by the oil company in question. Oil companies are listed in descending order of their volumes of oil extracted in 2014 (See Table 2).

2.2. Hidden Support: underinvestment into the prevention of oil spills

Cutting operational expenses on environmental protection lets oil companies save substantial funds. In the first instance
Taking into account that oil companies in Russia invest in the replacement and upgrade of oil pipelines - by a rough estimate of the authors of this Study - about 1/3 of what is really required, their underinvestment can make from 120 to 170 billion Rubles per annum. Judging by the profits gained by the 7 biggest oil companies in Russia in 2013-2014, the underinvestment can reach 10% of their net profit. A more accurate estimate can be obtained through an indepth analysis of the scale, essence, and, most importantly - the amplitude and efficiency of the fulfilment of investment programs of oil companies which requires an additional study. However even if more accurate calculations can be made, it is necessary to consider possible error margins due to the absence of data needed for such analysis.

2.3. Hidden measures of support to the oil industry: avoidance of full financial liability for oil spills

Wreakages of the infiel oil pipelines cause a tremendous damage to the environment. In accordance with the RF legislation, entities that caused damage to the environment are obliged to compensate such a damage to the full extent (according to Article 77 of the Federal Law "On the Protection of the Environment"). Meanwhile the shortcomings of the Russian legislation and the poor work of state bodies leave a loophole oil companies to avoid responsibility for non-complying with the legal requirements. Hereafter we provide some examples of such cases.

Hiding the facts of oil spills


Meanwhile, the official all-Russian data on pipelines’ ruptures is based on the reports from oil companies to the Central Dispatch Division of the Fuel and Energy Complex. As already noted, those figures are often understated, which was admitted by the Minister of Natural Resources S.E.Donskoy: "The comparison of the number of accidental oil spills and ruptures reported by the users of mineral resources to the supervising and controlling bodies (no more than 5,000 per annum) with the number of those recovered in the result of a complex inspection of just one user indicates that the supervising and control bodies do not have trustworthy data on the scale of yearly crises of hydrocarbon resources and contamination of the environment, on the measures taken by the users of natural resources on the cleaning of oil contamination, as well as on the accumulated environmental damage to soils, water bodies and bottom sediments".

Doubts re. the accuracy of the data on oil pipelines ruptures reported by oil companies arise also due to the facts described below. For example, in 2014 "Surgutneftegaz" reported to the Central Dispatch Division of the Fuel and Energy Complex just one (!) rupture of oil pipeline, while the volumes of oil extracted by the company make over 60 mln tons per year (3rd in oil production in Russia). Just to compare, in 2014 "Rosneft" reported over 5,500 ruptures, while "Lukoil" - over 3,000.

According to the conclusions of the Round-table discussions "Ensuring Ecological Safety of the Works on Oil and Oil Products Spills Mitigation" held by the Higher Ecological Council under the RF State Duma Committee for Natural Resources on December 5, 2014, many facts of accidental oil spills are deliberately hidden. It is difficult to assess the number of oil spills hidden by oil companies on a national level. One can only assume that it considerably contributes to the decrease of oil companies spendings on the maintenance and replacement of wrecked oil pipelines, hence - it adds to their commercial efficiency.

Understating of oil spills volumes

As opposed to the numbers of accidental oil spills, data on oil spills’ volume is presented to a more extent and, by analyzing it, one can assess the extent of a company’s “savings” by decreasing its expenditures on oil pipelines maintenance. To do this, one can compare the data of different agencies on the volume of oil lost in the result of pipelines’ ruptures with the data provided by oil companies themselves. According to the data of oil companies reported to the Central Dispatch Division of the Fuel and Energy Complex for the period of 2011-2014, the average number of ruptures per one million of tons of extracted oil usually goes into double digits, which proves that companies to a considerable extent economize on proper maintenance of infiel oil pipelines.

Accuracy of data provided by "Surgutneftegaz" whose reported number of ruptures per 1 mln tons of extracted oil differs by one hundred times from the numbers of ruptures occurring at the oilfields of companies-competitors to "Surgutneftegaz" raises certain doubts.

It is worthwhile mentioning that the given data was provided by oil companies themselves, so these data just partially reveals the reality (See Part 2.1); as the authors of this Study believe, these data covers only large-scale oil spills - substantially exceeding the volume of 1 barrel each. The amount of finances "saved" by oil companies on maintaining a safe operation of infiel oil pipelines can be assumed on the basis of expert data provided by the head of the RF Ministry of Natural Resources in 2012 and 2014. In April 2012 the Minister of Natural Resources Yu.P.Trutnev in his report to the RF Prime Minister Vladmir Putin gave the following evaluation of underinvestment in oil pipelines maintenance in the Khanty-Mansi Autonomous Region using the case of "NK-BP" company as an example: "In order to put things right at one of its most problem-causing oilfields, it will take the company from 5 to 7 years, while investments in the replacement of oil pipelines need to be increased by 3 times."
Dispatch Division of the Fuel and Energy Complex, the losses of oil in the result of pipelines' ruptures make 53,000 tons per year - according to the data reported by oil companies in 2011. This data and its adequacy can be implicitly evaluated by comparing it with the reported by Rosgortransvol volume of crude oil getting into the Arctic Seas with river flows (See infographics above).

According to this data, no less than a few hundred thousand tons of oil are spilled into the environment on a yearly basis in the result of pipelines' ruptures, which is many times more than oil companies report. According to the evaluation of then the Minister of Natural Resources Yu.P.Trutnev made in April 2012, the volume of oil from oilfields getting into the Arctic Seas with river flows can vary between 300,000 and 500,000 tons per annum.14

According to the assessment of the Minister of Natural Resources S.E.Donskoy in 2015, oil spills reach 1.5 mln tons per annum15, i.e. 30 times more than oil companies report. To compare, the value of this volume at $40/barrel makes it about $0.4 bln - or equivalent to about 30 bln Rubles.

At the same time, according to S.E.Donskoy, in 17% of accidents oil contamination impacts water bodies,16 which implicitly confirms the assessment made by Yu.P.Trutnev about 300,000 - 500,000 tons of oil getting into the Arctic Seas.

In 2014 the officially reported damage to the water bodies in Russia recovered by Rosminvodnadzor made 5 bln Rubles.17

Based on the formula for the calculation of payments for oil-the-limit dumping of oil products in the volume of 500,000 tons, one can make a hypothetic calculation of such payments, which can make about 160 bln Rubles (equivalent to

$2.5 bln per annum).18

If we make a similarly hypothetic calculation of the payments for the damage caused to water bodies by the same amount of oil and oil products (500,000 tons), we will come to a sum of 280 bln Rubles (equivalent to $4.6 bln) per annum.19

Obviously, it is not the whole volume of oil reaching the Arctic Seas that comes from the oilfields, thus the above given assessments should be considered as indicative ones. Meanwhile one can assume, that the major part of this volume, as well as the related damage, should be linked to oil spills, which is confirmed by the evaluations of Yu.P.Trutnev.

As a result, the damage caused to the northern rivers in monetary equivalent can reach up to 10% of the Russian oil companies' net profit.

However, the cumulative ecological damage exceeds the figures given above, as, apart from the damage caused to the Northern rivers, spilled oil also impacts soils, forests, enclosed water bodies, as well as rivers of other basins. That is why one can presume that the overall ecological damage by far exceeds the noted 280 bln Rubles.

Compensation of the caused ecological damage by factual spendings on the rehabilitation of contaminated areas - as a result of which the ecological damage is not compensated to the full extent

Upon the completion of works on the mitigation of accidental oil spills and rehabilitation of the contaminated areas carried out by oil companies themselves, part of spilled oil remains in the soil - it is the so-called residual contamination. Meanwhile, oil companies usually spend only a small part of the funds necessary to fully clean the soil, but do not compensate to the full extent the above noted residual damage.

The Constitutional Court prescribed to the lower courts to "further on, until the adoption of new regulations, to decrease the amount of damage caused to forests by the amount of costs of rehabilitation works. If, in the result of undertaken works, consequences of contamination were actually removed."

However, the Constitutional Court did not clarify what the "actual removal of the consequences of contamination" meant - and whether it presupposes the clearing away of 100% oil, rehabilitation of forest stand, fulfillment of other recreational works and compensation of residual oil contamination.

According to Paragraph 1 of Article 77 of the Federal Law "On the Protection of Environment" due to which legal entities that caused damage to the environment must compensate it to a full extent.

A similar situation is occurring in the case of water bodies’ contamination. For instance, in the result of a large-scale oil spill next to the Kolva River in the Komi Republic in May-June 2013, the damage to the water bodies was determined at 114 mln Rubles. The company that had caused the damage later on claimed that it compensated the damage by the related rehabilitation works, which it carried out by itself and which cost the company about 99 mln Rubles (i.e. about 87% of the determined ecological damage). Hence, the monetary compensation made about 15 mln Rubles.20 However, judging by the existing international practice, the authors of this study have substantial doubts that the company managed to collect even 50% of oil that had got into the Kolva River.

In 2015 the RF Constitutional Court tried to clarify this collision.21 Nevertheless the issue on the compensation of ecological damage by conducting rehabilitation works remained unresolved.

The amount of ecological damage caused by oil spillings recovered by the state bodies (open data)

<table>
<thead>
<tr>
<th>№</th>
<th>ECOLOGICAL DAMAGE CAUSED BY OIL SPILLS RECOVERED BY THE STATE BODIES (OPEN DATA)</th>
<th>AMOUNT OF DAMAGE CAUSED TO WATER BODIES IN THE RESULT OF DUMPING 500,000 TONS OF OIL INTO THE NORTHERN SEAS</th>
<th>AMOUNT OF UNDERINVESTMENTS IN THE MAINTENANCE AND REPLACEMENT OF INFIELD OIL PIPELINES (AMOUNT OF INVESTMENTS WITHIN 5 YEARS PER 1 TON OF OIL)</th>
<th>NET PROFIT OF TOP-7 COMPANIES IN 2014</th>
<th>PAYMENT FOR AN OIL-DUMPING INCIDENT INTO THE RIVERS OF THE ARCTIC SEAS BASIN (AS OF 500,000 TONE)</th>
<th>FIXING AND REPLACEMENT OF OIL PIPELINES (TOTAL COST ACC. TO THE ASSUMPTION OF THE MINISTER S.E.DONSKOV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10</td>
<td>ECOLOGICAL DAMAGE CAUSED BY OIL SPILLS RECOVERED BY THE STATE BODIES (OPEN DATA)</td>
<td>160</td>
<td>280</td>
<td>1300</td>
<td>170</td>
<td>836</td>
</tr>
</tbody>
</table>

...

47 Ibid, p. 27, Table 32.


49 After the takeover of "TNK-BP" in 2013 by "Rosneft", the infield infrastructure, noted by the former Minister of Natural Resources, became an integral part of the PAO "NK-Rosneft" infield infrastructure.

50 The calculation was made according to the following formula:

\[ S = V \times N \times K(e.f.) \]

where:
- \( S \) - payment for over-the-limit dumping of oil and oil products;
- \( V \) - volume of oil and oil products that got into the Northern rivers equal to 500,000 tons;
- \( N \) - normative standard of payments for dumping oil and oil products into surface and ground water bodies; according to Supplement 1 to the RF Government Resolution \# 344, dated June 12, 2003, it is equal to 27,550 Roubles per 1 dumped ton of oil and oil products;
- \( K(e.f.) \) - coefficient that accounts for ecological factors (state of water bodies) in the basins of the Arctic Seas and Rivers according to Supplement 2 to the RF Government Resolution \# 344, dated June 12, 2003. Due to the fact that the value of this coefficient varies depending on the region, we use the coefficient for Khanty-Mansiysk Region which is 1.04;
- \( C(o.l.e.) \) - 5-fold increasing coefficient for an over-the-limit contamination of the environment in accordance with Paragraph 5 of the Order of Calculating Payments and Their Maximum Values for the Contamination of the Environment, Waste Disposal and Other Types of Harmful Impact (adopted by the RF Government Resolution \# 632 on August 28, 1992);
- \( C(sy) \) - coefficient accounting for nature and climatic conditions depending on the season of the year; it is determined according to Table 1 of Supplement 1 to the Methodology and in the present formula it is equal to 1.05 standing for high waters and floods; \( K(w) \) - coefficient accounting for ecological factors (state of water objects); it is determined according to Table 2 of the Methodology to the present formula and is equal to 1.05 standing for high waters and floods;
- \( C(ind) \) - coefficient of indexation (readjustment) which accounts for the inflationary component of economic development; it is determined according to Paragraph 11.1 of the Methodology and is equal to 1 in the present formula (as of 2007);
- \( C(d) \) - coefficient accounting for the duration of negative impact by contaminants on water objects when no measures on eliminating this impact are being taken; it is determined according to Table 4 of the Methodology to the present formula and it is equal to 1.1 - the minimal coefficient taken with an assumption that the duration of the period when no measures to eliminate the negative impact are taken makes up to 6 hours;
- \( O \) - rate scale to calculate the amount of damage occurred in the result accidental contamination of water bodies with oil and oil products; it is determined on the basis of 500,000 tons and the value of 0.4 mln Roubles per ton of oil products; Thus the overall calculation makes the total of 281,820 bln Roubles.

51 The calculation is made on the basis of the overall cost of the Program, which is 1.3 trillion Roubles, and the period of the Program’s implementation - from 5 to 7 years. Thus, the average yearly expenditures would make from 0.186 to 0.26 trillion Roubles. Basing on the assertion that investments into fixing and replacement of oil pipelines need to be increased by 3 times (as it happened with "TNK-BP") one can assume that additional investments during the period from 5 to 7 years can be between: 0.186 – 0.186/3 = 0.124 trillion Roubles and 0.26 – 0.26/3 = 0.17 trillion Roubles.


53 The recommendations of the Round-table discussions "Ensuring ecological safety of the mitigation and elimination of oil and oil products' spills" of the Higher Ecological Council under the Committee for Natural Resources, Natural Resources' Management and Ecology of the RF State Duma held on December 5 2014.


58 The calculation was made according to the following formula:

\[ D = C(sy) \times C(o.l.e) \times C(ind) \times C(d) \times O, \]

where:
- \( D \) - monetary value of the amount of damage, in mln Roubles;
- \( C(sy) \) - coefficient accounting for nature and climatic conditions depending on the season of the year; it is determined according to Table 1 of Supplement 1 to the Methodology and in the present formula is equivalent to the minimal value of 1.05 standing for high waters and floods;
- \( C(o.l.e) \) - coefficient accounting for ecological factors (state of water objects); it is determined according to Table 2 of the Methodology to the present formula and is equal to 1.05 standing for high waters and floods;
- \( C(ind) \) - coefficient of indexation (readjustment) which accounts for the inflationary component of economic development; it is determined according to Paragraph 11.1 of the Methodology and is equal to 1 in the present formula (as of 2007);
- \( C(d) \) - coefficient accounting for the duration of negative impact by contaminants on water objects when no measures on eliminating this impact are being taken; it is determined according to Table 4 of the Methodology to the present formula and it is equal to 1.1 - the minimal coefficient taken with an assumption that the duration of the period when no measures to eliminate the negative impact are taken makes up to 6 hours;
- \( O \) - rate scale to calculate the amount of damage occurred in the result accidental contamination of water bodies with oil and oil products; it is determined on the basis of 500,000 tons and the value of 0.4 mln Roubles per ton of oil products; Thus the overall calculation makes the total of 281,820 bln Roubles.

59 "Allowable Residual Containment of Oil in the Soil" (DOSNP) - put in force by the Order \# 574 of the RF Ministry of Natural Resources on 12.09.2002.

60 The letter \# 01-42/148 dated April 28, 2014., from the Ministry of Natural Resources of the Komi Republic.