Russian Associated Gas Utilization: Problems and Prospects

A. Knizhnikov, N. Pous senkova

Annual Report within the Framework of the Project

Environment and Energy: International Context

Issue 1

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Russian Associated Gas Utilization:

Problems and Prospects

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According to the official data, the regions of the most wide-scale associated gas flaring in the early 21st century were Persian Gulf, West Africa (mostly, Nigeria) and Russia (mostly, West Siberia). Until recently, Nigeria was officially number one in the world in terms of associated gas flaring (24.1 bcm/yr). Russia came second (14.9 bcm/yr). They were followed by Iran (13.3 bcm/yr), Iraq (8.6 bcm/yr) and Angola (5.4 bcm/yr).

**Associated gas** is a by-product of oil separation that precedes oil delivery to pipelines. A ton of oil may contain a quantity of associated gas ranging from 1-2 to several thousand cubic meters. Associated gas is currently utilized as follows. Produced oil is pumped to a separation station where it is separated from associated gas. The separation process has several (three to four) stages. First and second stage gases that are rich in methane and ethane are delivered by pipelines to gas processing plants where they are converted to fuel gas and liquefied gas, gas liquids and natural gasoline. Third and fourth stage gases are used as a fuel on the sites. However, their volumes most often exceed fuel needs, so these gases are flared.

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**Russian Associated Gas Utilization: Problems and Prospects**

The interest of the global energy, environmental and business community in the issue of associated gas utilization has grown dramatically in recent years due to both environmental and financial considerations. On the one hand, associated gas flaring produces ca. 1% of total global emissions of greenhouse carbon dioxide. On the other, associated gas flaring means senseless destruction of valuable nonrenewable natural resources.

The World Bank took the lead in attempting to solve the problem of associated gas flaring and organized Global Gas Flaring Reduction Public-Private Partnership (GGFR) in 2002. GGFR members are major oil producing countries (USA, Canada, Nigeria, Kazakhstan, UK, Norway, etc.), leading energy companies (ExxonMobil, Shell, BP, Chevron, ENI, etc.) and such international organizations as the World Bank, OPEC and European Union. The Russian Federation is revealingly represented in GGFR by Khanty-Mansiyskiy Autonomous District alone.

1. **Russian associated gas flaring volumes**

The actual volumes of associated gas production and flaring in Russia are fairly difficult to estimate. Serious differences are currently observed in the volume evaluations made by different organizations. Thus, 2005 reports indicate production of 55.9 bcm according to the Federal Service for State Statistics, 56.7 bcm according to the Russian Federal Geological Fund, 57.6 bcm according to the Central Dispatch Office of the Russian Fuel and Energy Industry. The associated gas flaring volume amounted to 13.1 bcm according to the Federal Service for State Statistics, 13.4 bcm according to the Russian Federal Geological Fund and 14.9 bcm according to the Central Dispatch Office of the Russian Fuel and Energy Industry.

According to the Federal Service for State Statistics and Central Dispatch Office of the Russian Fuel and Energy Industry, the volume of produced associated gas increased by a factor of 1.5 or by 18 bcm in 2001-06 (from 37.7 bcm in 2001 to 56.6 bcm in 2006). The associated gas utilization trend lags far behind the production rates. The associated gas utilization volumes increased by a factor of just 1.4 over the reviewed period (from 30.4 bcm in 2001 to 42.5 bcm in 2006). In this respect, the volumes of gas flaring keep increasing (from 7.4 bcm in 2001 to 14.1 bcm in 2006, i.e. by a factor of 1.9).

According to the Ministry of Natural Resources, only 26% (14 bcm) of 55 bcm of associated gas produced in Russia each year is supplied for processing. 47% (26 bcm) is consumed for oilfield service needs or written off as in-process losses. 27% (15 bcm) is flared. Therefore, the gas utilization factor is 73% judging by the in-process loss and service consumption data.

The highest level of associated gas utilization (above 90%) is recorded in the

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Southern and Far Eastern Federal Districts. The worst situation is observed in the Northwestern Federal District where associated gas utilization is only slightly above 35%. The Siberian Federal District is another example of unsatisfactory state of affairs (65%)².

According to 2006 data, more than 80% of the total volume of Russian associated gas was produced by five oil companies – Surgutneftegaz, TNK-BP, Rosneft, LUKOIL and Gazprom neft (see Table 1 of the Appendix).

The accuracy of official and unofficial data on associate gas resources and utilization volumes is questionable due to shortcomings in the gas resource metering, recording and estimation methodology and equipment. Therefore, huge inconsistencies are observed in the data, in particular, on the oil companies (see Appendix, Table 1, Table 2 and Table 3).

The official statistics does not rely on precise instruments to measure associated gas production and utilization volumes: most oilfields are not equipped with associated gas meters, and oil company’s reports on associated gas utilization for service needs may not always match the reality. According to the Government of Khanty-Mansiyskiy Autonomous District, only a half of all flare units were equipped with metering devices in 2007. Surgutneftegaz with its 98% of flare units equipped with metering devices largely contributed to this indicator (see Appendix, Table 4).

It is a widespread opinion that much more associated gas is really flared than it is reflected in the statistics. Thus, President Putin admitted in 2007 that the country flares more than 20 bcm/yr (see below). A research sponsored by the World Bank has demonstrated that Russia flares around 38 bcm/yr³.

There are even more radical estimates of Russian gas flaring volumes. Thus, the results of a research conducted by the U.S. National Oceanic and Atmospheric Administration upon request of the World Bank were published before a G8 summit in Germany in 2007. They used data from the military meteorological observation system to evaluate the volumes and trends of associated gas flaring in 1995-2006.

The calibrated results have demonstrated that very substantial differences are observed in the Russian Federation between the official statistics and satellite imagery. According to the NOAA research, Russia has replaced Nigeria as the by far the biggest gas flaring country in the world: according to NOAA, Russia flared 50.7 bcm of associated gas in 2004 whereas the official statistics indicated 14.9 bcm only. In any case, Russia is apparently responsible for a quarter to a third of global associated gas flaring.

The efforts made at the international and national levels resulted in an emerging trend towards decreasing flaring volumes in almost all of the top-20 countries.

Only five countries are exceptions to this rule. Russia is, unfortunately, among them with its still growing associated gas flaring volumes (according to WB data).

This led to a dramatic stepping up of efforts by Russian government authorities (Ministry of Natural Resources, Rostekhnadzor, Ministry of Industry and Energy, etc.) that began urging to take decisive measures to stop associated gas flaring starting from summer 2007.

² Neft Rossii, November 2008
³ Energy Efficiency in Russia: a Hidden Reserve, p. 14

It was concluded on the basis of satellite observations that the total global volume of natural gas flaring remained stable in the last twelve years – within the 150-170 bcm/yr range. This is equivalent to 30% of natural gas consumption by the European Union countries, 25% of US consumption or 75% of Russian natural gas exports. The potential value of associated gas flared in 2006 is USD40 billion. Its flaring resulted in the emission of 400 mln tons of carbon dioxide into the atmosphere.

<table>
<thead>
<tr>
<th>Flaring volume (bcm)</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Russia*</td>
<td>48.8</td>
<td>50.0</td>
</tr>
<tr>
<td>Nigeria</td>
<td>19.3</td>
<td>16.8</td>
</tr>
<tr>
<td>Iran</td>
<td>12.1</td>
<td>10.6</td>
</tr>
<tr>
<td>Iraq</td>
<td>7.4</td>
<td>7.0</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>6.0</td>
<td>5.3</td>
</tr>
<tr>
<td>Algeria</td>
<td>6.2</td>
<td>5.2</td>
</tr>
<tr>
<td>Libya</td>
<td>4.3</td>
<td>3.7</td>
</tr>
<tr>
<td>Angola</td>
<td>4.0</td>
<td>3.5</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>3.3</td>
<td>3.4</td>
</tr>
<tr>
<td>Qatar</td>
<td>2.8</td>
<td>2.9</td>
</tr>
<tr>
<td>China</td>
<td>2.8</td>
<td>2.5</td>
</tr>
<tr>
<td>Indonesia</td>
<td>3.0</td>
<td>2.4</td>
</tr>
<tr>
<td>Kuwait</td>
<td>2.5</td>
<td>2.1</td>
</tr>
<tr>
<td>Venezuela</td>
<td>2.0</td>
<td>2.1</td>
</tr>
<tr>
<td>Uzbekistan</td>
<td>2.8</td>
<td>2.0</td>
</tr>
<tr>
<td>USA</td>
<td>1.9</td>
<td>1.9</td>
</tr>
<tr>
<td>Oman</td>
<td>2.2</td>
<td>1.9</td>
</tr>
<tr>
<td>Mexico</td>
<td>1.2</td>
<td>1.7</td>
</tr>
<tr>
<td>Malaysia</td>
<td>1.8</td>
<td>1.7</td>
</tr>
<tr>
<td>Gabon</td>
<td>1.9</td>
<td>1.6</td>
</tr>
</tbody>
</table>

* highlighted in red are the countries, in which associated gas flaring increased in 2006-07.

Source: http://siteresources.worldbank.org/EXTGGFR/Resources/344690SanitationAndHygiene0at0wb.pdf?resourceurlname=344690SanitationAndHygiene0at0wb.pdf
2. Environmental and climatic implications of large-scale associated gas flaring

Associated gas flaring results in significant emissions of solid pollutants and deteriorating environmental situation in oil producing regions. According to the Ministry of Industry and Energy, 321.8 thousand tons (ca. 12% of total Russian emissions) of solid pollutants was emitted into the atmosphere in oil producing regions in 2004. According to the data of a NGO, Environmental Movement of Direct Action, the volume of atmospheric pollution resulting from associated gas flaring amounted to 12% of the total volume of pollutant emissions in the country in 2006.

Associated gas flaring exerts significant impact on the climate. Carbon dioxide and active soot are emitted into the atmosphere due to associated gas ‘in-process losses’ and flaring. Russian gas flaring annually produces almost 100 mln tons of CO2 emissions (provided that the entire gas volume is flared efficiently). However, Russian gas flares are notoriously inefficient, i.e. they do not burn gas completely. Therefore, they emit methane, which is a much more active greenhouse gas than CO2. The volume of soot emissions caused by associated gas flaring is tentatively estimated at 0.5 mln tons/yr. Calls to take measures to reduce soot emissions are becoming ever more active in recent years due to the particular vulnerability of Arctic ecosystems to the global climate change.

Associated gas flaring is accompanied by thermal pollution of the environment: the radius of thermal breakdown of the soil ranges from 10 to 25 meters and the same for vegetation ranges from 50 to 150 meters around the flare. The atmosphere receives both associated gas combustion products including nitrogen oxide, sulfur dioxide, carbon monoxide and various unburned hydrocarbons. Significant concentrations of nitrogen and sulfur oxides are recorded at a distance of 1 to 3 km from the flare, sulfur dioxide 5 to 10 km from the flare, and carbon monoxide and ammonia up to 15 km from the flare. This causes increased incidence of lung and bronchi cancer, damages of liver and gastrointestinal tract, nervous system and eyesight in local communities.

3. Financial implications of large-scale associated gas flaring

Associated gas flaring results in significant losses of valuable chemical feedstock. According to the Ministry of Industry and Energy, the associated gas flared in 2004 included 7.1 mln tons of ethane, 4.1 mln tons of propane, 2.6 mln tons of butane and 13 million cubic meters (mcm) of helium.

In summer 2007, Yury Trutnev, Minister of Natural Resources, said that robust investment activity was observed in virtually all sectors of the Russian economy including oil and gas production whereas the associated gas processing segment was in complete stagnation. Not a single new gas processing plant was commissioned in the country since 1980. According to the Ministry of Natural Resources, Russia loses ca. 139.2 billion rubles (consolidated value of liquid hydrocarbons, propane, butane and dry gas produced by associated gas processing) per annum due to associated gas flaring although the total effect of associated gas processing in the country could amount to 362 billion rubles per annum.

According to the Ministry of Industry and Energy, the budget loses ca. $13 billion annually due to an insufficient associated gas processing. Up to 7.6 bcm of associated gas are flared every year in Khanty-Mansiyskiy Autonomous District alone according to the District Administration, which is comparable to a loss of 6.5 mln tons of oil.

It follows from the results of a research funded by the World Bank that around one third of flared Russian associated gas could be put to good use providing the country with additional annual revenue of $2.3 billion at 2007 prices and reducing CO2 emissions by more than 30 million tons/yr.

4. Potential ways to utilize associated gas

- Reinjecting into the subsoil to increase reservoir pressure thus improving oil production performance. However, this method is almost never used in Russia (unlike several other countries) with very few exceptions since this is an expensive process.
• Using on sites to generate electric power to be consumed for oilfield service needs.
• In case of significant and stable volumes of associated gas – using as a fuel in major power plants or for further processing. It is apparent that the most economic way to utilize associated gas is to process it in gas processing plants producing lean dry gas, natural gas liquids (NGL), liquefied gases (LPG) and stable natural gasoline.

Table 5 and Table 6 show the data on associated gas utilization trends in Russia in 2001-07 based on various indicators, which are also different in different sources (see Appendix, Table 5 and Table 6).

5. Reasons for large-scale associated gas flaring in Russia

5.1. Technical reasons
• Lack of the required production and processing infrastructure in many fields;
• Deficiencies of associated gas resource metering, recording and estimation methodology and equipment and the resulting shortage of data on associated gas flaring and utilization volumes. Most flares have no meters (so far, Surgutneftegaz is the only company that has solved this problem almost completely)\(^{11}\);
• Lack of technology that would allow utilizing third and fourth stage APG. “They are rich in heavy hydrocarbons, they cannot be transported by pipelines, so flaring is the only option”, LUKOIL representatives note in this connection\(^{12}\);
• Existing associated gas gathering and utilization system orientation at centralized delivery arrangements, which makes the system inflexible and predetermines domination of a single gas buyer, i.e. SIBUR;
• Great distances separating potential markets from oil production areas. Construction of gas pipelines to transport associated gas to the plants is characterized by high capital intensity. According to IK FINAM, 1 km of such pipeline costs $1.3-1.5 million. Associated gas transportation from remote fields to gas processing plants increases associated gas cost to $30/thousand cub.m whereas the cost of natural gas production by Gazprom is $4-7/thousand cub.m at the wellhead\(^{13}\).

5.2. Economic reasons
• Natural gas prices regulated by the government and long-drawn gas market liberalization process. The level of natural gas prices is to a great extent determined by the level of Cenomanian gas production costs, which are substantially lower than the costs of associated gas production, gathering and utilization. Therefore, despite the opportunity to sell lean dry gas at market prices, the consumer still orientates oneself at the Cenomanian gas prices.

\(^{10}\) For detail, see V.A. Kryukov, V.Yu. Silkin, A.N. Tokarev, V.V. Shmat. Associated Petroleum Gas Utilization: Oil Companies Need Stable Conditions for Implementing Capital Intensive Projects
\(^{11}\) Neft Rossii, November 2008. For comparison: meters are installed on 98.3% of Surgutneftegaz flare units, 56.7% of TNK-BP flare units, 11% of LUKOIL flare units and 9.7% of Rosneft flare units.
\(^{12}\) http://www.rbcdaily.ru/2007/10/01/tek/295887
\(^{13}\) http://www.rbcdaily.ru/2007/10/01/tek/295887
Until winter 2008, the official associated gas prices were regulated by Order of the Ministry of Economic Development (issued in 2002) “On Wholesale Prices for Petroleum (Associated) Gas Sold to Gas Processing Plants for Subsequent Processing”. They were established by the Federal Tariff Service (FTS) depending on the total content of propane, butane, isobutane, pentane, isopentane and hexane in gas and ranged from 74 rubles to 440 rubles ($3 to $17) for 1 mcm. The Russian average was 256 rubles/mcm. They never factored in any expenses for associated gas gathering, storage and transportation. The gas sales revenue was scarcely sufficient for oil companies to cover their costs associated with associated gas gathering and transportation to gas processing plants, given, furthermore, the condition that the fields had the required infrastructure for that purpose. Besides, unlike the wholesale price for natural gas, which is indexed in the domestic market on an annual basis, the wholesale prices for associated gas remained unchanged from 2002. This deterred development of facilities to gather and treat gas for sale to industrial consumers and, therefore, impeded the development of gas processing facilities.

Each substance that is emitted into the atmospheric air in the course of flaring is assessed separately, and the rates are tiny. A high payment rate was established for methane only – 50 rubles per ton within the established limits and 250 rubles for emissions in excess of limits. For comparison, the same rates for emitting a ton of carbon monoxide (CO) are 0.6 rubles and 3.0 rubles, respectively, and for nitrogen oxide (NOx) are 35 rubles and 175 rubles.

- Low associated gas prices.
- Higher capital intensity of the processes of associated gas gathering and supply for utilization (compared with natural gas). A lot of technical solutions that are currently implemented in associated gas gathering and utilization systems are oriented at application of centralized systems.
- Insignificant penalties for emitting associated gas combustion products; therefore, oil companies preferred ‘to pay to pollute’.

5.3. Organizational/institutional reasons

- Oil companies had no economic interest in the associated gas gathering and utilization.

Despite the fact that the Field Development Rules of 1987, which are still in effect, stipulate that associated gas is subject to gathering, recording and rational use, this provision was never put in actual practice until recently. The provisions of licensing agreements for oil field development specify a mandatory level of associated gas utilization at 95% and field infrastructure designs envisage construction of associated gas gathering, field treatment and transportation facilities. Breaches of these rules threaten subsurface users with license revocation (at least, formally) and emissions of associated gas combustion products are penalized by fines.

The key documents that regulate the use of associated gas at the moment are the industry normative technical documents that determine the requirements for the content of design documents for various phases of field operation. They do not stipulate clear-cut and specific provisions that would obligate subsoil users to perform process and engineering/economic studies to ensure a comprehensive field development. As a result, the vast majority of the design documents that are effective and agreed by the authorities managing the state subsurface fund contain no technical or process solutions for associated gas utilization. Until recently, there was no requirement to include separate sections on gas condensate and associated gas production development into the drafted design documents.

\[\text{Neft i kapital, No. 11, 2007}\]
• Inefficient existing system for state control and monitoring of compliance with licensing agreements in Russia including with regard to associated gas utilization.

• Competition among various government organizations authorized to monitor various aspects of hydrocarbon field development and operation. At the moment, there are ten or so government agencies that control various elements of subsurface user’s activity at the federal level alone.

• When trying to sell associated gas, oil companies have to deal with monopolies, i.e. Gazprom and SIBUR:
  - Limited access of oil companies to the Unified Gas Supply System (UGSS) filled with natural gas owned by Gazprom.
  - Peculiar standpoint of SIBUR in relation to associated gas purchase prices.

6. Russian Government policy towards associated gas utilization

6.1. Standpoints of the Ministry of Natural Resources and Ministry of Industry and Energy

The issue of associated gas utilization has long been discussed at the government level, and sporadic attempts to solve it were already made in the past. Thus, Government Decree No. 858 was adopted in 1997 to provide nondiscriminatory access of independent organizations to the gas transportation system on condition that the quality of their gas meets the system standards. It was also planned to adopt a special law on associated gas initiated by the Russian Gas Society whose President, V. Yazev, presented the draft law to the State Duma in 2001. However, as he says, ‘unfortunately, the draft was not accepted at the then-existing level of understanding of the problems, and the Government opinion on the draft was negative’.

However, a much stronger focus of the Russian Government on the issue of associated gas utilization has been observed starting from 2007 (possibly, due to the publication of new associated gas flaring data that became available to the global community).

In April 2007, Vladimir Putin paid a special attention to associated gas utilization in his Presidential Address to the Russian Federal Assembly noting that ‘the Russian oilfields currently flare more than 20 bcm/yr of associated gas at the lowest estimate. Such wastefulness is unacceptable. Especially given that a system of measures with proven efficiency is known and applied globally for a long time. We should establish an appropriate accounting system, increase environmental penalties and tighten license requirements for subsurface users without further delay’.

In an economic session on August 6, 2007, President Putin ordered the Government to prepare a package of measures to solve the issue of more efficient utilization of associated gas by October 1: to bring the level of associated gas utilization to the average global level of 95% by 2011.

The President’s order was to be fulfilled by the Ministry of Natural Resources and Ministry of Industry and Energy.

Petrochemical companies have long insisted on preserving low regulated purchase prices emphasizing that associated gas is just a by-product of oil refining rather than a specially produced resource. Oil companies objected referring to expensive infrastructure to transport associated gas to processing plants. Until recently, petrochemical companies were winners in this debate.

16 RIA Novosti, February 13, 2008
15 http://www.au92.ru/msg/20080326_8032606.html
17 http://www.klerk.ru/news/?82605
According to the plan developed by the Ministry of Industry and Energy, Rostekhnadzor and the Ministry of Natural Resources should have developed draft Government Decree “On Introducing Amendments to Russian Government Decree dated June 12, 2003 No. 344 “On Rates of Payment for Emissions of Pollutants into the Atmospheric Air from Stationary and Mobile Sources, Discharges of Pollutants into Surface and Underground Water Bodies, and Disposal of Production and Consumption Wastes” by December 2007 to provide for implementation of progressive payments for emissions of associated (petroleum) and natural gas and products of their combustion on flare units starting from January 1, 2011 and increased environmental penalties for emissions in excess of limits resulting from natural gas flaring. By the same deadline, the Federal Tariff Service, Ministry of Economic Development and Trade and Ministry of Industry and Energy should have prepared a draft Government Decree to abolish associated gas price regulation in the domestic market.

By February 2008, they should have developed concepts of draft laws to introduce amendments to federal laws “On Gas Supplies in the Russian Federation” and “On Electric Power Industry” to provide for priority access to the Unified Gas Supply System and the Unified Power Grid.

By November 2008, the Ministry of Industry and Energy should have developed and approved the national standards to regulate the system for associated (petroleum) and natural gas gathering and treatment in oil and gas production organizations and arrangement of associated gas accounting in the process of its production and flaring.

On September 28, 2007, Yury Trutnev, Minister of Natural Resources, sent a draft Plan of Key Actions to Increase Associated Gas Utilization Efficiency developed by the Ministry of Natural Resources to Victor Zubkov, Chairman of the Government.

The document envisages introduction of amendments to the law obliging subsurface users to develop design documentation for the use of associated gas and install associated gas metering instruments in the fields. The action plan also provides for the development of a single associated gas utilization standard, introduction of progressive payments for emissions of associated gas and flaring combustion products.

It is also planned to increase environmental penalties for emissions in excess of limits resulting from natural gas flaring and approve a methodology to calculate the degree of associated gas utilization for a license area taking into account heavy hydrocarbon recovery from associated gas and light hydrocarbon flaring.

The plan suggests developing a package of measures to promote rational use of associated gas, provide priority access to the unified national power grid for suppliers of power generated by gas turbine and gas piston thermal power plants from associated gas or its processing products, priority access to the Unified Gas Supply System for suppliers of lean dry gas produced by associated gas processing, and create tax and customs benefits for the entities implementing projects aimed at rational use of associated gas.

According to Minister Trutnev, the action plan will enable complete fulfillment of the tasks set in the Presidential Address to the Russian Federal Assembly by President Putin with regard to associated gas utilization and ensure fuller recovery of mineral reserves and associated components from the subsurface. ‘By 2011, 95% of the produced associated gas will be fully processed rather than flared’, Minister said18.

Almost at the same time, they sent out for finalization a draft report to the President and a key action plan titled “On Improving Associated (Petroleum) and Natural Gas Utilization Efficiency” drafted by the Ministry of Industry and Energy. The Ministry of Natural Resources responded by presenting its criticisms and suggestions. A new version of the action plan was issued by the Ministry of Industry and Energy and a conciliatory meeting with the Ministry of Natural Resources was scheduled for October 8.

However, the meeting revealed major contradictions between the Ministries. The Ministry of Industry and Energy did not agree to the suggestion of the Ministry of Natural Resources on developing a draft Government Decree “On Prohibiting Operation of Hydrocarbon Fields without Flared Associated or Natural Gas Accounting Instruments”. This was apparently to a large extent due to the lobbying by the oil companies that had referred to a high cost of such instruments.

The Ministry of Natural Resources suggested banning operation of the fields that were not equipped with associated gas accounting instruments starting from July 1, 2008. The Ministry of Industry and Energy believed such restrictions were too tight. Vitaly Karaganov, Deputy Director, Oil and Gas Industry Department, Ministry of Industry and Energy, said that, first, technical amendments would have to be introduced to all designs and there were currently around 1500 fields operated in the country and by no means all companies would be able to complete the re-registration procedure by July 1. So, the Ministry of Industry and Energy standpoint was that in case the existing designs had already been agreed by the supervisory authority without any associated gas utilization requirements and the corresponding licensing agreements had been signed, the state should meet the producers halfway and tighten the requirements without any dramatic shocks for companies.

Second, since any metering device is involved in the process in one way or another, its integration in the system would entail changes to the process. If an oil treatment unit serves hundreds of wells, the subsurface user might incur huge losses if it failed to meet the assigned deadline. So, the Ministry of Industry and Energy suggested giving some time for companies to develop a package of measures that would allow installing accounting instruments without any economic or environmental damage.

It turned out that the Ministries also pursued different approaches to the method of collecting the environmental payments for atmospheric emissions. The Ministry of Natural Resources suggested introducing a single utilization standard of 95% of associated gas for all license areas and establishing progressive payment for emissions of associated gas and flaring combustion products starting from January 1, 2011. The Ministry of Industry and Energy believed the introduction of a single utilization standard could make operation of some oilfields uneconomic.

As a result, the Government received two versions of the action plan and a reconciliation protocol drafted by the two Ministries. A document that reflected the compromise standpoint of both Ministries was ultimately compiled.

6.2. Rostekhnadzor standpoint

In addition to the plans developed by the Ministry of Natural Resources and Ministry of Industry and Energy, the Government also received suggestions from Rostekhnadzor.

According to Rostekhnadzor, Russian subsurface users currently flare 20-30% more associated gas than they report. Therefore, in early October 2007, Rostekhnadzor sent out for agreement a draft Government Decree “On Introducing Amendments to Attachment 1 to Russian Government Decree dated June 12, 2003 No. 344” that suggests changing the procedure for assessing the payment for adverse environmental impact in relation to atmospheric emissions of pollutants generated by associated gas flaring, establishing the rate of payment for atmospheric emissions of gas and increasing the rate of payment for emissions of pollutants generated by associated gas flaring. Rostekhnadzor effectively suggested increasing the rates of payment for emissions of associated gas combustion products by a factor of 350 as early as the beginning of 2008, which would make companies to pay penalties for a total amount of ca. $20 billion. The suggestion provoked objections by other government agencies and was aggressively opposed by oil companies.

With regard to installation of gas meters, oil companies noted that their accuracy is different and depends on the price. The simplest meters may cost 1000 rubles apiece while those that record fuel production and consumption volume with an accuracy of up to 0.5% are 10-15 times more expensive. According to oil companies, expensive instruments will make the process of oil production in Russia as pricey as gold.

Overall, the Ministry of Natural Resources leans towards applying sticks rather than carrots. Thus, a meeting on associated gas issues was convened in Khanty-Mansiysk in June 2007 upon the initiative of the Ministry. Minister Trutnev said in his speech: “We must prepare a package of measures and introduce the required amendments to the law in 2007. I do understand that companies are interested in incentives and benefits but, proceeding from the language of the Presidential Address, and the President talked of tighter requirements, the state will use measures of coercion to a greater extent.

Another idea was voiced in January 2008 by the Ministry of Finance that suggested regarding associated gas as an independent mineral resource that may be levied with mineral production tax rather than a product recovered from the produced oil. The Ministry of Finance suggested levying the associated gas supplied for processing with zero mineral production tax and applying a specially assessed differentiated rate to the gas that is flared.
The introduction of the new procedure for assessing payment for emissions of pollutants generated by associated gas flaring consists of establishing the volume of polluting associated gas flaring products as the leviable base for the payment.

Rostekhnadzor suggested collecting 100 rubles and 500 rubles for a ton of associated gas emission, 3495 rubles and 17475 rubles for a ton of associated gas flaring product emissions without decomposition except for benz(a)pyrene and applying an adjustment factor of 2 in 2010, 2.5 in 2011 and 3 in 2012.

The Ministry of Economic Development and Trade, Ministry of Natural Resources and Ministry of Industry and Energy did not agree to such a sharp increase of the payment.

According to a source from the Ministry of Natural Resources, such a substantial increase could make operation of some fields uneconomic. Pursuant to point 25 of the Package of Measures to Implement the Key Provisions of the 2007 Presidential Address to the Russian Federal Assembly approved by a Russian Government Directive on June 15, 2007, increased environmental payments should not result in demotivation of oil and gas field development and operation.

As a result, Rostekhnadzor announced in February 2008 that it had revised its approach to the collection of payments for associated gas flaring taking into account the suggestions of relevant ministries and agencies and major oil companies including Rosneft, LUKOIL, TNK-BP and Sibur. It suggested a new version of draft Government Decree “On Measures to Reduce Atmospheric Air Pollution with Associated Gas Flaring Products”.

Oil companies note that the authorities should pay special attention to improving economic incentives of associated gas utilization when drafting the law. Increased penalties threaten the companies with production cost growing by ca. $45 per ton. Russian vertically-integrated oil companies, in their turn, will be able to transfer growing production costs onto the end users, i.e. motorists, by increasing their wholesale and retail prices for gasoline.

According to Gazprom experts, the payback period for on-site associated gas utilization units is 12 years. “Pipelines, compressor stations, metering points and gathering systems have to be constructed in each field. All this costs huge money. It is easier to do in the old fields where the infrastructure is already fully set up. But there are new complex areas in very remote regions where it is very difficult to construct the entire associated gas gathering and utilization infrastructure at once. We advocate a differentiated approach so that the companies are given some sort of a transitional period”, LUKOIL representatives say.

Pursuant to the new version, the actual payment for associated gas flaring should have increased by a factor of 46 from 2009 and rise again by a factor of 113 upon introduction of a higher payment for flaring of more than 5% of produced associated gas from 2011. According to Rostekhnadzor draft, the above-limit procedure for assessing the payment with a scale-up factor of 4.5 to the value of maximal atmospheric emissions of pollutants permitted by the standards should have been applied from January 1, 2009 to associated gas flaring in excess of 15% of production and from January 1, 2011 to associated gas flaring in excess of 5%.

However, Government Decree No. 7 dated January 8, 2009 “On Measures to Stimulate Reduction of Atmospheric Air Pollution with Associated Gas Flaring Products” that was drafted by the Ministry of Natural Resources (which includes Rostekhnadzor since May 2008) in 2008 and agreed with the Ministry of Economic Development, Ministry of Finance, Ministry of Energy and Ministry of Public Health and Social Development stipulates more liberal conditions of transition to the system of associated gas flaring penalties for oil companies.

Revealingly, the Ministry of Natural Resources and Ministry of Energy, apparently pressured by oil companies, in December 2008 suggested postponing introduction of the mandatory standard for oil companies to utilize 95% of produced associated gas from 2012 to 2014, as Yury Trutnev said.

“We deliberated, introduced amendments and presented the draft decree to the Government”, Minister said. He also mentioned that the Ministry of Natural Resources suggested increasing the level of utilization gradually whereas the Ministry of Energy stood for a one-off increase starting from 2014.

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26 http://rcnnews.ru/Rus/Refinary/?ID=73257
Key provisions of Decree “On Measures to Stimulate Reduction of Atmospheric Air Pollution with Associated Gas Flaring Products”

In order to prevent pollution of atmospheric air with emissions of harmful (polluting) substances and reduce emission of greenhouse gases generated by associated gas flaring, the Government of the Russian Federation decrees as follows:

1. Establish the target level of associated gas flaring for 2012 and subsequent years in a volume of maximum 5% of produced associated gas (“Target Level”).

2. Establish that, starting from January 1, 2012, the payment for emissions of harmful (polluting) substances generated by associated gas flaring shall be assessed as follows: for the volume within the Target Level value – in accordance with pp. 2-4 of the Procedure for Determining Payment and Limits of Payment for Natural Environment Pollution, Waste Disposal and Other Types of Adverse Impact approved by Decree of the Government of the Russian Federation No. 632 dated August 28, 1992;

for the volume in excess of the Target Level value and calculated as a difference between the volume of flared associated gas and the volume of associated gas within the Target Level value – in accordance with point 5 of the aforesaid Procedure as for above-limit pollution. In that case, an additional factor of 4.5 shall be applied to the payment rates at the time of assessment to motivate economic agents to reduce atmospheric air pollution with products of associated gas flaring. Starting from January 1, 2012, in case there are no metering and recording instruments to confirm the actual volume of associated gas production, utilization and flaring, the aforesaid additional factor shall be assumed to have a value of 6.

Such a suggestion was likely a result of the financial crisis since the current economic environment forces oil companies to curtail their investment programs while trying to preserve exploration and production outlays. The cost-cutting concerns the areas of activity that the oil companies regard as less important including associated gas processing.

However, as we already mentioned, Decree No. 7 was adopted in January 2009 to stipulate transition to 95% associated gas utilization in 2012. A little later, at a meeting dedicated to oil industry issues with participation of Deputy Prime Ministers Sechin and Kudrin, ministers, heads of oil companies and Gazprom that took place in February 2009, Prime Minister Putin responded to the calls of oil companies to postpone the deadlines for transition to new fuel standards and 95% utilization of associated gas by stating quite plainly that oil companies should not nurture any such hopes: “there are other industries apart from the oil sector such as the car-building industry, and the country’s environment on top of that”. In this connection, it is not quite clear to what extent the Russian Government will actually consider environmental issues given the necessity to overcome the crisis in the oil sector and whether the Prime Minister’s words were not just a tribute to the ‘environmental fashion’ and an attempt to provide moral (and material) support to the domestic car-building industry, which is in a very bad shape.

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Rostekhnadzor has reviewed the programs that are developed by subsurface users to ensure associated gas utilization. According to the review, it is possible to achieve utilization of 95% of the total volume of produced associated gas by 2011 on condition that the developed programs are complied with.

According to Rostekhnadzor Division for Supervision of Oil and Gas Production, Processing and Trunk Pipeline Transportation Facilities, it is already possible to ensure the required level of associated gas utilization in 80% of the facilities. They have also identified the key reasons why the required level cannot be achieved in specific fields. These are considerable distances separating the fields from the transportation and processing infrastructure and a high content of nitrogen and other components in the associated gas, which makes its processing uneconomic.

As of today, they have developed action programs to ensure continuous instrumental monitoring and recording of produced associated gas volumes and action plans to ensure associated gas utilization in 60% of oil and gas production facilities.

Rostekhnadzor is currently drafting a register of oil and gas gathering and transfer facilities, which is planned to be completed by April 200927.

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http://www.mnr.gov.ru/part/?act=more&id=5183&pid=11

As mentioned in the materials for the session of the Russian Government on January 31, 2008, the legal/regulatory base that used to exist earlier and allowed circumventing state regulation of associated gas prices in some cases and the changes that occurred in the oil and gas industry, in particular, acquisition of gas processing plants by oil companies, implementation of joint programs to increase associated gas utilization by oil companies and Sibur Holding resulted in that only a very insignificant share of associated gas volumes was sold for processing at the prices established by the state.

In any case, the portion of the Russian currency and budget revenues provided by the fuel and energy complex is so high that the needs of this sector are most likely to be prioritized. In fact, even the already adopted Decree No. 7 may not be implemented given the continuing economic crisis and aggravated problems in the oil industry.

### 6.3. Associated gas price liberalization

In 2008, the Government made a decision to liberalize associated gas prices, which should contribute to making associated gas utilization a profitable business.

The issue of whether it is necessary to liberalize associated gas prices has been debated since 2003, and petrochemical companies have been winning the debate for a long time. However, when the Russian Government declared its intention to substantially increase environmental penalties for associated gas flaring, oil companies began constructing processing facilities of their own. As a result, Sibur, which is Russia’s largest associated gas consumer controlled by Gazprom, faced a potential shortfall of feedstock for its processing facilities that are being constructed. By 2007, the necessity to liberalize associated gas prices was obvious to everyone. The Ministry of Economic Development and Trade planned to raise regulated domestic associated gas prices to 1017 rubles/thousand cub.m (on average) in 2007 but this measure was ultimately rejected, and experts noted that it would not be sufficient in any case since it would still be easier for oil companies to flare their gas.

On February 13, 2008, Prime Minister Zubkov has finally signed a Decree titled “On Introducing Amendments to Several Decrees of the Government of the Russian Federation on Issues of State Regulation of Petroleum (Associated) Gas Prices”, which effectively terminated Sibur monopoly in this area. The matter is that associated gas was removed from the list of products with prices subject to state regulation. The list was approved by Government Decree No. 239 of 1995 and stipulated state regulation of prices for natural, petroleum (associated) and lean dry gas.

Associated gas price liberalization eliminated certain investment risks of this business but did not improve the investment attractiveness of such projects by itself since there are problems with provision of access to the Unified Gas Transportation System operated by Gazprom for oil companies to transport lean dry gas produced from associated gas.

### 6.4. Access to UGSS

Therefore, the Ministry of Industry and Energy suggested legalizing priority access of associated gas to the Unified Gas Supply System in late 2007 providing a condition that when the pipeline system is fully loaded, volumes of natural gas pumped into the system will be temporarily reduced to make space for associated gas.

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29 Kommersant newspaper, No. 17(3834) dated February 5, 2008
30 Profil, No. 6(562) dated February 18, 2008
31 Decrees dated March 7, 1995 No. 239 ‘On Measures to Streamline State Regulation of Petroleum (Associated) Gas Prices’ and dated April 15, 1995 No. 332 ‘On Measures to Streamline State Regulation of Prices for Gas and Gas Production Feedstock’.
32 Vedomosti, August 20, 2007.
However, the problem is not to let associated gas enter Gazprom gas pipelines (especially since associated gas volumes are relatively insignificant compared with the transferred natural gas volumes) but to subject associated gas to proper prior treatment. Associated gas has a complex composition, and the operating characteristics of the existing pipeline system cannot accommodate it.

Analysts believe the adoption of the amendment will hit independent gas producers since the issue of associated gas access to the pipeline will be resolved by reducing their supplies rather than those delivered by Gazprom. Although Gazprom notes that it 'ensures priority acceptance of lean dry gas from oil companies that has been treated according to industry requirements and technical capabilities,' it should be noted in this connection that, just as in case of accepting natural gas from independent producers into the UGSS, Gazprom itself determines whether spare capacity is available in the system, and it is fairly difficult to verify objectivity and accuracy of this information.

6.5. Draft Law ‘On Associated Gas’

In addition, the Russian Gas Society has developed a draft law to regulate the relations in the area of petroleum (associated) gas utilization. Valery Yazev, Head of RGS, suggests linking penalties for associated petroleum gas flaring to the degree of profitability of associated gas processing and the volume of investment in the required infrastructure. The developers of the law reasonably note that the accent on penalties and coercive measures alone will not help in solving the problem since it will just result in increased corruption and bribery among government officials.

The draft law provides for the Government to have authority to subsidize the costs incurred by oil companies to create associated gas utilization systems. The appropriate imported equipment is expected to be exempt of customs duties. It will also be required to introduce a special factor to calculate depreciation of such equipment and levy it with the property tax at lower rates.

Another tax measure is to collect mineral production tax if the required level of associated gas utilization is not achieved. Besides, the Russian Gas Society also believes it is necessary to provide priority access to the gas transportation system for suppliers and buyers of lean dry gas produced from associated gas and priority connection to power grids for the generating facilities that consume associated gas.

On August 14, 2008, the Expert Board of the Russian Gas Society had a meeting dedicated to the issues of associated gas utilization. The participants discussed the structure of draft Federal Law ‘On Comprehensive Utilization of Petroleum (Associated) Gas in Oil Production’ that was developed upon RGS initiative. The meeting was attended by members of the Federation Council, representatives of Gazprom neft, TNK-BP, Rosneft and others. It is important that, while discussing the draft law, RGS resorted to a very wise and efficient practice of agreeing and bringing together the standpoints of oil and gas companies on various aspects causing disputes among them, which resulted in a consensus between the parties on most issues.

34 http://www.rosbalt.ru/2008/07/29/508547.html
35 Kommersant newspaper, No. 49(3866) dated March 26, 2008
36 http://www.klerk.ru/news/?126097
It was established during the meeting that the package of measures aimed at ensuring rational use of associated gas may be implemented in two ways from the legislative point of view:


The participants have finally chosen the second option, i.e. to develop a package of amendments to particular current laws and regulations since the State Duma is more likely to adopt a package of amendments to laws rather than a separate draft law on associated gas. Draft Law ‘On Introducing Amendments to Particular Laws of the Russian Federation on Issues of Petroleum (Associated) Gas Utilization’ envisages changes to eleven existing laws: ‘On the Subsurface’, Tax Code, ‘On Customs Tariff’, ‘On Gas Supplies in the Russian Federation’ and others.

The draft law was sent to the State Duma in September 2008 and should be considered by the Duma in early 2009.

7. Associated gas utilization policies of Russian oil companies

It is notable that oil companies have long started implementing their own associated gas utilization programs notwithstanding the technical, organizational and financial problems that arise in associated gas utilization and inconsistent and often counterproductive policy that is pursued by the Government in this area. Recently, certain objective circumstances have contributed to the acceleration of this process.

First, Gazprom is facing an ever increasing shortage of its own natural gas to meet its commitments to the consumers in the domestic and export markets. So, it will have to accept third party gas including lean dry gas recovered from the associated gas produced by oil companies into its gas transportation system in the nearest future. Besides, the consumer prices for gas in the domestic market that will mostly accommodate the lean dry gas keep growing and are forecasted to reach the average European level by 2011.

Second, SIBUR gradually understands that fuller loading of the capacity of its gas processing plants in West Siberia and Tobolsk Petrochemical Complex (Tobolsk-Neftekhim) that is directly linked thereto may be more lucrative than establishment of minimal prices for associated gas given the existing situation in the market for deep conversion petrochemicals.

Oil companies are prepared to increase investment in long-term associated gas utilization programs. As of 2007, TNK-BP planned to spend ca. $1.3 billion for that purpose by 2011, Rosneft – $1.8 billion by 2010, LUKOIL - $2 billion in 2008-16. If the domestic gas prices were liberalized by 2011, these investments could pay off. Although it should be noted that as the result of economic crisis in combination with the oil price decline in 2008, most oil companies started curtailing their investment programs, and it is obvious that the objectives of fuller associated gas utilization will not be their top priority in the existing circumstances.

In general, oil companies solve the issues of associated gas utilization in several ways.

7.1. Establishment of JVs with SIBUR

Since 2006, SIBUR started searching for ways to reduce associated gas flaring volumes in cooperation with Gazpromneft, Rosneft and TNK-BP. Their search aimed at restoring the single process chain that used to exist some time ago linking oilfields with gas processing plants (GPP) and transportation systems designed to supply associated gas processing products to consumers. The very idea of establishing joint ventures to utilize associated gas emerged as far back as 2002.

In November 2006, SIBUR and TNK-BP signed an agreement on establishing LLC Yugragazpererabotka – a joint venture to process associated gas based on Belozernyi (with a throughput capacity of 4.3 bcm of associated gas before the fire in May 2007 and ca. 3.3 bcm after the fire) and Nizhnevartovsk (4.28 bcm in 2007) gas processing plants.

Pursuant to the agreement, TNK-BP ensures long-term supplies of associated gas that is processed by the GPPs owned by Yugragazpererabotka. The commercial products are shared between JV participants in proportion to their interests in the company.


TNK-BP subsequently sells its share of liquid products of gas processing to SIBUR whereas SIBUR transfers its share of lean dry gas and a kind of a quota to transport the gas by the trunk pipelines owned by Gazprom to TNK-BP.

As a result, SIBUR gets an opportunity to actually plan capacity development for both the GPPs and its Tobolsk-Neftekhim subsidiary thanks to the long-term contracts for feedstock supply with its JV partner. TNK-BP gets additional volumes of lean dry gas to supply to Nizhnevartovsk Thermal Power Plant and enters the Russian gas market, which the company has long been striving to do.

In addition, a 50:50 JV (Yuzhno-Priobskiy GPP) was established by SIBUR and Gazpromneft in August 2007 to utilize associated gas primarily in the Southern license territory of Priobskoe Field that was recently commissioned by Gazpromneft (so, the field has no facilities to process associated gas). The joint venture plans to construct Yuzhno-Priobskiy GPP with a throughput capacity of 1 bcm and create an infrastructure for subsequent transportation of processing products. Lean dry gas from Yuzhno-Priobskiy GPP will be partially supplied to a gas turbine power plant that is being constructed by Gazpromneft-Khantos in Priobskoe Field and partially delivered to the point of tie-in to the trunk gas pipeline between Demyanovskaya Compressor Station and Khanty-Mansiysk. NGL will be transported by a product pipeline that is planned to be tied-in to the SIBUR pipeline going to Tobolsk.

SIBUR plans to construct yet another GPP in the territory where Gazpromneft is the principal oil producer. Particularly promising resources of associated gas are located in the vicinity of Vyngapurovskaya Compressor Station, which is planned to serve as a base to construct a GPP with a throughput capacity of 3 bcm/yr. Lean dry gas will be supplied to the trunk gas pipeline between Urengoi and Chelyabinsk, and a 100 km product pipeline should be laid to transport NGL to Noyabrsk where they plan to construct a rail loading rack to ship NGL, which are also produced in SIBUR-owned Muravlenkovskiy and Gubkinskiy GPPs, to Tobolsk in rail tank cars.

SIBUR also intended to establish a JV with Rosneft. The companies signed a Memorandum of Understanding on associated gas processing and product sales in June 2007. The MoU provided for possible establishment of a JV based on Yuzhno-Balykskiy GPP. However, its potential configuration is still being negotiated.

The first startup complex of Yuzhno-Balykskiy GPP was commissioned on November 5, 2007, which will allow increasing the volume of associated gas processing from the current 1.1 bcm/yr to 1.6-1.7 bcm/yr. SIBUR upgraded the GPP on its own, although it is this GPP that Rosneft expects to employ in order to implement its gas program. Besides, the agreements with Rosneft on additional supplies of associated gas allowed SIBUR to start constructing the second startup complex of Yuzhno-Balykskiy GPP to make the plant capable of processing more than 3 bcm/yr of associated gas. In parallel, Yuganskneftegaz is implementing its own part of the gas program that envisages construction of Compressor Station 2 upon commissioning of Compressor Station 1 and expanding the pipeline to the gas processing plant. It is also planned to construct a 300 MW gas turbine power plant.

Since Gazprom started accepting third party lean dry gas to its pipelines more readily and the associated gas prices were liberalized, oil companies may no longer have incentives to establish JVs with SIBUR - especially since SIBUR continues to implement its comprehensive program to upgrade its own GPPs. By 2011, they intend to bring the volume of associated gas processing in its West Siberian GPPs to 22 bcm albeit cherishing hopes that it would be possible to accelerate solution of the associated gas utilization issue using state investments and Kyoto Protocol mechanisms.

### 7.2. Electric power generation

Another area of associated gas utilization by oil companies is electric power generation. Considering fast growth of power consumption in Tyumen Oblast including increasing power demand of oil companies (production is starting to decline in West Siberian fields, and additional power is required, in particular, to maintain reservoir pressure), one may expect a shortage of electric power in Tyumen Oblast. Since two power plants in Surgut and the operating units of Nizhnevartovsk plant consume dry associated gas, it is likely that the entire regional power industry will switch to associated gas in the foreseeable future.

As of today, most companies that produce oil in West Siberia have programs to deploy gas turbine power plants (GTPP) in the fields and implemented pilot projects. The experience shows that this approach provides significant economic benefits to the companies.
According to Surgutneftegaz, the power produced by own plants consuming associated gas is currently at least 1.5 times cheaper for oil companies than the power purchased from, for instance, Tyumenenergo. A GTPP payback period is usually 2.5 to 3 years\(^\text{39}\). Since Tyumenenergo intends to partially finance its future development projects by increasing charges for connection to power grids, and the power price keeps growing, construction of own power units in the fields is likely to become an ever more lucrative business\(^\text{40}\).

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**Surgutneftegaz**

Surgutneftegaz is the leader in utilizing associated gas to generate power among oil companies; it provides more than 27% of the total Russian associated gas production ( Appendix 1, Table 1). Having two high-capacity thermal power plants (Surgut GRES-1 and GRES-2) in the immediate vicinity, it has advantages in associated gas utilization over other companies.

In recent years, the company has been making a focus on utilizing associated gas as a fuel for its own power plants (Appendix 1, Table 2). The program to construct gas turbine power plants (GTPP) and upgrade compressor stations (CS) that was launched in 1999 envisaged that Surgutneftegaz would have 11 plants by 2007 (the first plant launched in 2001 was the GTPP in Konitlorskoe Field). However, the company that cooperates with domestic aircraft engine manufacturers has already 13 GTPPs with a total capacity of 343.5 MW. Since Surgutneftegaz consumes ca. 1250 MW (2006) of power annually, the power generated by its own plants operating on associated gas covers more than a quarter of the company requirements.

New gas pipelines are also constructed. Around 120 km were laid in 2007, and 200 km in 2008.

Saturn-Gazovye turbiny will launch two more GTPPs in Zapadno-Chigorinskoe (12 MW) and Verkhnenadymskoe (24 MW) Fields. In addition, SNG starts constructing a 36 MW GTPP on Rogoznikovskiy field and goes on working in Talakanskoe field in Yakutia. A gas piston plant is already completed there, and construction of the first stage of a high-capacity (144 MW) GTPP is started. The GTPP will provide power not only to Talakan operations but also to ESPO oil pipeline pumping stations.

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**Gazpromneft**

Gazpromneft focused on using gas piston power plants (GPPP) that may operate on two fuels (diesel/gas). Such GPPPs are now operating in Ety-Purovskoe and Krapivinskoe fields. GPPP construction is envisaged by the program of Gazpromneft-Khantos, a subsidiary of Gazpromneft that currently utilizes less than 20% of its produced associated gas. The first 10 MW GPPP will be launched in Yuzhno-Priobskoe field. After that, they plan to start constructing a higher capacity 50 MW plant to consume 150-200 mcm of associated gas per year. Its commissioning is likely to be timed to coincide with achievement of 10 mln tons/yr production in Yuzhno-Priobskoe when the field will simultaneously provide ca. 1 bcm of gas.

A GTPP is being constructed in Sugmutskoe field in Yamalo-Nenetskiy Autonomous District, which is the region of operation of the company’s key production subsidiary, Sibneft-Noyabrskneftegaz.

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\(^{39}\) Neft Rossii, No. 11, November 2008

\(^{40}\) For detail, see Neft i kapital, No. 1–2, 2008
"We are exploring opportunities to construct several hundreds of new gas-to-power systems that would allow ensuring reliable supply of power to our fields, increasing associated gas utilization volumes, and placing orders to manufacture the required high-tech equipment with domestic mechanical and power engineering enterprises", Vagit Alekperov, President of LUKOIL, said⁴¹. He touched upon this issue again in his interview to Rossiyskaya gazeta on June 28, 2007 saying that ‘Our company has no gas flaring problems. We make huge investment to utilize 88% of associated gas and will reach the maximal possible level of 95% in one year’⁴².

LUKOIL

LUKOIL is betting on its existing four GPPs (with a total throughput capacity of ca. 2.7 bcm/yr) and plans to use associated gas to develop power generation of its own. LUKOIL subsidiaries currently operate more than 180 power sources of various types with a total capacity of 65 MW.

LUKOIL entered into a contract with Aviadvigatel and Iskra-Energetika to supply six power units for constructing a 72 MW gas turbine power plant in Vatyoganskoe field to operate on the associated gas gathered in Kogalymneftegaz’ fields. The new GTPP will consume ca. 120 mcm/yr and become LUKOIL’s largest power generation facility.

The company is developing an associated gas utilization program for 2007-16. Within the framework of the program, LUKOIL plans active construction of gas piston and gas turbine power plants in its remote fields and regions of company operations that experience shortage of power. The total power plant capacity will be ca. 400 MW. The next projects to be implemented are construction of a GTPP on Tevlinsko-Russkinskiy field in Khanty-Mansiysky Autonomous District and in Yuzhnoe Khylchuyu field in Nenetskiy Autonomous District, where LUKOIL already has an operating GTPP. It is the 24 MW plant in Yuzhno-Shapkinskoe field that was commissioned in 2003.

Rosneft

Rosneft is among the companies with the lowest levels of associated gas utilization (according to H1 2007 report, its level is 64.2%). It has no separate program to construct GTPPs and GPPPs in its fields (Appendix 1, Table 1). They will be constructed within the framework of the overall associated gas utilization program. Field power generation business will be focused on constructing a 315 MW GTPP in Priobskoe field. According to the plans, some power produced by this GTPP will be supplied to the power grid of West Siberia. In the future, they plan to increase plant capacity to 500 MW.

Kynskoe and Kharampurskoe fields developed by Purneftegaz have two operating GPPPs with a capacity of 4.65 MW and 7.75 MW, respectively. In addition, Rosneft inherited the GTPPs installed in YUKOS’ fields upon acquiring the latter’s assets.

⁴² http://www.lukoil.ru/press.asp?id=1108
TNK-BP

TNK-BP that has developed an associated gas utilization strategy in 2007 constructs power plants in Vakhitovskoe field in Orenburg Oblast starting from 2004-05 within the framework of the program to expand associated gas utilization. In 2005, the company launched two GPPPs in this field to be gradually upgraded to a higher capacity and commissioned two GTPPs in 2006. TNK-BP has a GPP of its own (Zaikinskiy GPP) in Orenburg Oblast that has processed more than 1.5 bcm of gas in 2006 (Appendix 1, Table 3).

In East Siberia, TNK-BP started constructing a GTPP in Verkhnechonskoe field in cooperation with Rosneft. The power plant capacity may be subsequently increased to 150 MW, and the plant will be capable of supplying power to third parties on condition that a power transmission line is constructed from Irkutsk Oblast to Yakutia. In the future, the key regions for constructing associated gas-fueled power plants will be southern Tyumen Oblast (where the company is implementing its Uvat Project) and northern Krasnoyarsk Krai (Bolshekhetskiy Project).

As for Khanty-Mansiyskiy Autonomous District, the key TNK-BP field there is Samotlor where the associated gas utilization issue is solved, and more than 95% of produced gas is utilized. So, TNK-BP focuses on developing its agreements with SIBUR on the joint work based on two GPPs and cooperating with OGK-1 to construct Unit 3 of Nizhnevartovsk GRES.

Tatneft

The highest level of associated gas utilization is currently observed in Tatarstan (92% overall and 95% in Tatneft). Oil has been produced in Tatarstan for as long as 65 years and oil production concentrated on a small territory (Appendix 1, Table 1). Regional industrial and social infrastructures are integrated into a single system, and there are no fields that would be located at great distances from settlements and industrial facilities as is the case in Nenetskiy, Khanty-Mansiyskiy or Yamalo-Nenetskiy Autonomous Districts.

Tatneft has managed to reach a high level of associated gas utilization as far back as ten years ago. But as the company recently started to expand oil production in western districts of the republic where gas pipeline networks are underdeveloped, it faced problems with associated gas utilization.

It should be noted that a decision was made to establish the State Pool of Reference Samples for Metrological Support of Crude Oil and Associated Gas Metering in Tatarstan that is unparalleled in Russia. This will help to improve the quality and competitiveness of the national reference sample base.

\[43\] For detail, see Neft Rossii, November 2008
Conclusions, recommendations, actions

Associated gas utilization is a capital intensive and complex process that requires reconciliation of contradictory stakeholder standpoints to be a success. The situation is aggravated by difficulties with marketing of associated gas utilization products. Besides, the problem is further complicated due to the fact that large-scale associated gas flaring also has environmental aspects, concerns the domain of climate change, leads to a senseless and wasteful destruction of valuable natural resources and is a political issue since it pertains to the relations between oil companies and Gazprom. Certain optimism is commanded, though, by the activity of several oil companies, which implement associated gas utilization programs of their own in spite of rather than thanks to the government policy by either establishing JVs with Sibur or using associated gas to generate electric power thus solving the problem of overcoming potential shortage of power in Russia.

The conditions to be created to solve the issue of associated gas utilization in Russia should be oriented at the soonest possible implementation of new investment projects in this area such as equipment of fields with the required metering instruments, construction of gas gathering networks, compressor stations and gas processing plants. At the same time, associated gas utilization may become an economically feasible business, and associated gas price liberalization reflects a certain progress in that direction.

However, a circumspect long-term government strategy in this area is required to create a lucrative associated gas utilization business that would efficiently combine economic incentives with penalties. The issue of achieving an increase of the level of associated gas utilization without undermining economic positions of oil companies is very acute in this domain especially given the current oil production decline and curtailment of oil companies’ investment programs.

The issue of increased associated gas utilization will apparently be sacrificed by the government to the interests of industry support amidst the evolving economic crisis and declining world oil prices, which is confirmed by the decision to postpone the deadline for 95% associated gas utilization from the initially planned 2011 to 2012 (and subsequent suggestions of the Ministry of Natural Resources and Ministry of Energy on postponing the deadline to 2014). In this connection, one cannot help remembering the situation with implementing Euro-3 and Euro-4 fuel standards when they had initially suggested a fairly aggressive schedule of transition to environmentally friendlier fuels, which turned out to be unrealistic due to the unpreparedness of Russian refineries and was ultimately postponed to a much farther future due to active lobbying by oil companies. The government was also clearly in a hurry about associated gas when it set unrealistic objectives to achieve 95% associated gas utilization by 2011 without considering full complexity of problems in this area. It has subsequently moved the deadlines, perhaps, upon getting a fuller understanding of the situation in this domain, yielding to oil companies’ lobbying, and being forced to consider the new economic reality that shaped up in Russia in the last months of 2008 and early 2009.

WWF-Russia believes such postponement runs contrary to the directives of country leaders on increasing energy efficiency of the economy by 40% by 2020, which are fixed in Decree No. 889 dated June 4, 2008 issued by President Medvedev and does not comply with the global trends of converting economies to the low-carbon scenario. On the other hand, some positive trends are also observed today, in particular, the development of the draft Federal Law ‘On Introducing Amendments to Particular Laws of the Russian Federation on Issues of Efficient Utilization of Petroleum (Associated) Gas’. Its adoption would bring a major improvement to the situation with associated gas utilization in Russia.

WWF-Russia considers it necessary to provide active support to the positive trends in associated gas utilization and conducts a public campaign to accelerate solution of this problem.

In this connection, WWF-Russia has addressed leading Russian oil companies with a proposal to adopt Voluntary Commitments to utilize at least 95% of associated gas when commissioning new fields starting from 2010.
Thus, it is planned to publicize oil companies’ associated gas utilization figures and their annual trends so that the public could evaluate the level of environmental responsibility of various companies including based on these data.

Our negotiations with the oil companies produced the following results. Most companies sent us no confirmation of their readiness to adopt the Voluntary Commitments to utilize at least 95% of associated gas when commissioning new fields starting from 2010 as proposed by WWF-Russia. The only exception was Surgutneftegaz that is already successfully implementing a program to achieve 95% associated gas utilization and adopts the Voluntary Commitments for the entire company with a reservation for separate particularly complex newly commissioned fields where it commits to achieve the same level in the fourth year upon commissioning. The rest of the companies suggest alternative options in the form of implemented programs aimed at increasing the level of associated gas utilization (see Appendix Table 7).

Most companies confirm that the associated gas utilization problem is acute and explain the set of problems they are facing in relation to associated gas utilization and their activity. Thus, for instance, Rosneft that has started implementing its Gas Target Program estimates the volume of funding at more than 100 billion rubles and envisages construction of power plants, gas processing units, temporary underground gas storage, and systems for gas gathering and transportation to Gazprom networks and SIBUR Holding gas processing plants. LUKOIL estimates the required volume of investment to implement the associated gas utilization program in 2009-11 at 26 billion rubles. However, these actions taken by the companies are not sufficient to solve the problem.

Another route to be followed by WWF-Russia and its partners to solve the associated gas problem is assistance in promoting financial instruments, whether financial opportunities within the framework of the Kyoto Protocol and future post-Kyoto agreement or via the ‘sustainable finance’ instruments of environmentally responsible banks, both Russian and international. This may be exemplified by the deal that was struck by Rosneft and Carbon Trade & Finance SICAR S.A. (a joint venture of Dresdner Bank and OJSC Gazprombank) in February 2009 for purchasing Greenhouse Gas Emission Reduction Units (ERU) obtained by implementing associated gas utilization programs in Kharampurskoe and Khasyreiskoe fields in West Siberia from Rosneft, and a loan.

We hope that these and other steps taken by all sectors of the Russian society (government, business and public) and the comprehensive approach will help to resolve the long-standing problem of associated gas utilization in the country as soon as possible.
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6. Vedomosti, February 13, 2009
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19. Materials from web sites:
   http://www.au92.ru/msg/20080326_8032606.html
   http://www.lobbying.ru/content/sections/articleid_2811_linkid_25.html
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   http://www.rbcdaily.ru/2008/02/11/tek/320434;
   http://siteresources.worldbank.org/EXTGGFR/Resources/344690Sanitation0and0hygiene0at0wb.pdf?resourceurlname=344690Sanitation0and0hygiene0at0wb.pdf;
   http://www.mnr.gov.ru/part/?act=more&id=5183&pid=11;
## Table 1
### Associated gas production and flaring volumes in 2006

<table>
<thead>
<tr>
<th>Company</th>
<th>Production bcm</th>
<th>Utilization %</th>
<th>Utilization bcm</th>
<th>Flaring bcm</th>
<th>Flaring %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgutneftegaz</td>
<td>15.6</td>
<td>26.9</td>
<td>14.6</td>
<td>1.0</td>
<td>6.5</td>
</tr>
<tr>
<td>TNK-BP</td>
<td>10.9</td>
<td>18.8</td>
<td>8.6</td>
<td>2.3</td>
<td>21.0</td>
</tr>
<tr>
<td>Rosneft</td>
<td>8.7</td>
<td>15.0</td>
<td>5.1</td>
<td>3.6</td>
<td>41.2</td>
</tr>
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<td>LUKOIL</td>
<td>7.0</td>
<td>12.1</td>
<td>5.1</td>
<td>1.9</td>
<td>27.4</td>
</tr>
<tr>
<td>Gazprom neft</td>
<td>4.4</td>
<td>7.6</td>
<td>2.0</td>
<td>2.4</td>
<td>53.5</td>
</tr>
<tr>
<td>YUKOS</td>
<td>2.4</td>
<td>4.1</td>
<td>1.9</td>
<td>0.5</td>
<td>21.5</td>
</tr>
<tr>
<td>Slavneft</td>
<td>1.5</td>
<td>2.6</td>
<td>0.9</td>
<td>0.6</td>
<td>37.5</td>
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<td>Russneft</td>
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<td>2.8</td>
<td>1.2</td>
<td>0.4</td>
<td>27.2</td>
</tr>
<tr>
<td>Tatneft</td>
<td>0.8</td>
<td>1.4</td>
<td>0.7</td>
<td>0.1</td>
<td>5.0</td>
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<td>Bashneft</td>
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<td>0.7</td>
<td>0.3</td>
<td>0.1</td>
<td>21.8</td>
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<tr>
<td>Others</td>
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<td>7.9</td>
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<td><strong>TOTAL</strong></td>
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<td><strong>100</strong></td>
<td><strong>43.8</strong></td>
<td><strong>14.1</strong></td>
<td><strong>24.4</strong></td>
</tr>
</tbody>
</table>

Source: V. Kryukov, V. Silkin, A. Tokarev, V. Shmat. How to Extinguish Flares in Russian Oilfields, 2008, p. 18

## Table 2
### Volumes of associated gas production by subsurface users in Russia in 2006

<table>
<thead>
<tr>
<th>Company</th>
<th>Statistical reporting, bcm</th>
<th>Level of utilization, %</th>
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</thead>
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<tr>
<td>Surgutneftegaz</td>
<td>14.62</td>
<td>93.5</td>
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<tr>
<td>Rosneft</td>
<td>13.56</td>
<td>59</td>
</tr>
<tr>
<td>YUKOS</td>
<td>1.89</td>
<td>60</td>
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<tr>
<td>LUKOIL</td>
<td>5.07</td>
<td>75.1</td>
</tr>
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<td>TNK-BP</td>
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<td>78.4</td>
</tr>
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<td>Gazprom neft</td>
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<td>55</td>
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<td>Slavneft</td>
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<td>62.5</td>
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<tr>
<td>Tatneft</td>
<td>0.74</td>
<td>98</td>
</tr>
<tr>
<td>Bashneft</td>
<td>0.33</td>
<td>80</td>
</tr>
<tr>
<td>Russneft</td>
<td>1.54</td>
<td>78</td>
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<td><strong>VIOC TOTAL</strong></td>
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<tr>
<td>Gazprom</td>
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<td>Other companies</td>
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<td><strong>Russian total</strong></td>
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<td>74.5</td>
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Table 3
Associated gas production by oil companies; data for nine months of 2005–07, bcm

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<tr>
<th>Company</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
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<tr>
<td>LUKOIL (including:</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Kogalymneftegaz</td>
<td>1.2</td>
<td>1.2</td>
<td>1.32</td>
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<tr>
<td>LUKOIL-Komi</td>
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<td>0.6</td>
<td>0.6</td>
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<tr>
<td>Rosneft</td>
<td>3.94</td>
<td>3.64</td>
<td>4.48</td>
</tr>
<tr>
<td>(Including:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Purneftegaz</td>
<td>1.73</td>
<td>1.53</td>
<td>1.7</td>
</tr>
<tr>
<td>- Yuganskeftegaz</td>
<td>1.03</td>
<td>1.1</td>
<td>1.1</td>
</tr>
<tr>
<td>YUKOS</td>
<td>1.44</td>
<td>1.31</td>
<td>0.83</td>
</tr>
<tr>
<td>Gazprom neft (including:</td>
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<td></td>
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<tr>
<td>Noyabrskneftegaz</td>
<td>0.63</td>
<td>0.57</td>
<td>0.49</td>
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<tr>
<td>Zapolyarnaya</td>
<td>0.79</td>
<td>0.89</td>
<td>0.73</td>
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<td>Surgutneftegaz</td>
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<td>10.6</td>
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<td>TNK-BP</td>
<td>5.99</td>
<td>6.16</td>
<td>6.37</td>
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<td>(Including:</td>
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<td></td>
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<tr>
<td>- Sidanco</td>
<td>1.34</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Varyogannetgaz</td>
<td>0.68</td>
<td>0.76</td>
<td>0.8</td>
</tr>
<tr>
<td>- Samotlorneftegaz</td>
<td>2.26</td>
<td>2.74</td>
<td>2.74</td>
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<td>- TNK-Nyagan</td>
<td>0.64</td>
<td>0.72</td>
<td>0.78</td>
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<tr>
<td>- Orenburgneft</td>
<td>1.6</td>
<td>1.22</td>
<td>1.2</td>
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<tr>
<td>Tatneft</td>
<td>0.56</td>
<td>0.55</td>
<td>0.56</td>
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<td>Bashneft</td>
<td>0.25</td>
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<tr>
<td>Slavneft (including:</td>
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<td>- Megionneftegaz</td>
<td>0.72</td>
<td>0.67</td>
<td>0.66</td>
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<tr>
<td>RussNeft (including:</td>
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<td></td>
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<tr>
<td>- Varyogannetgaz</td>
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<td>0.56</td>
<td>0.52</td>
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<td>OIL COMPANIES TOTAL</td>
<td>29.2</td>
<td>29.5</td>
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</table>

Source: Neftyanaya torgovlya

Table 4
Equipment of flare systems owned by Khanty-Mansiyskiy Autonomous District subsurface users with metering units

<table>
<thead>
<tr>
<th>Company</th>
<th>Total actual flares</th>
<th>Flares equipped with metering units</th>
</tr>
</thead>
<tbody>
<tr>
<td>LUKOIL</td>
<td>117</td>
<td>13</td>
</tr>
<tr>
<td>Surgutneftegaz</td>
<td>123</td>
<td>121</td>
</tr>
<tr>
<td>Rosneft</td>
<td>62</td>
<td>6</td>
</tr>
<tr>
<td>YUKOS</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>TNK-BP</td>
<td>120</td>
<td>68</td>
</tr>
<tr>
<td>Slavneft</td>
<td>30</td>
<td>21</td>
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<tr>
<td>Sibneft</td>
<td>10</td>
<td>3</td>
</tr>
<tr>
<td>Russneft</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>Bashneft</td>
<td>5</td>
<td>4</td>
</tr>
<tr>
<td>Others</td>
<td>17</td>
<td>9</td>
</tr>
</tbody>
</table>

Source: V. Kryukov, V. Silkin, A. Tokarev, V. Shmat. How to Extinguish Flares in Russian Oilfields, 2008, p. 25

Table 5
Russian associated petroleum gas use history, bcm

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
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<tbody>
<tr>
<td>Flaring</td>
<td>7.2</td>
<td>11.1</td>
<td>11.1</td>
<td>14.76</td>
<td>15.0</td>
<td>14.1</td>
</tr>
<tr>
<td>Processing at GPP and compression stations</td>
<td>22.7</td>
<td>23.0</td>
<td>27.4</td>
<td>29.2</td>
<td>32.0</td>
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<tr>
<td>Use for in-house and other needs</td>
<td>6.0</td>
<td>8.5</td>
<td>10.0</td>
<td>11.0</td>
<td>10.6</td>
<td>11.2</td>
</tr>
</tbody>
</table>

Source: Ministry of Industry and Energy
### Table 6
Key Russian associated gas use figures for 2001-07

<table>
<thead>
<tr>
<th>Parameter</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td>Associated gas production, bcm</td>
<td>35.9</td>
<td>42.6</td>
<td>48.5</td>
<td>54.9</td>
<td>57.6</td>
<td>57.9</td>
<td>61.2</td>
</tr>
<tr>
<td>Flaring, bcm</td>
<td>7.1</td>
<td>11.1</td>
<td>11.1</td>
<td>14.7</td>
<td>15.0</td>
<td>14.1</td>
<td>16.7</td>
</tr>
<tr>
<td>Associated gas supplies to and processing by GPP, bcm</td>
<td>23.7</td>
<td>26.0</td>
<td>31.6</td>
<td>34.0</td>
<td>34.9</td>
<td>35.5</td>
<td>34.8</td>
</tr>
<tr>
<td>Used for in-house needs, bcm</td>
<td>5.1</td>
<td>5.5</td>
<td>5.8</td>
<td>6.2</td>
<td>7.7</td>
<td>8.3</td>
<td>9.7</td>
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<tr>
<td>Utilization level, %</td>
<td>80.1</td>
<td>73.8</td>
<td>77.2</td>
<td>73.3</td>
<td>74.0</td>
<td>75.6</td>
<td>72.6</td>
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</table>

Source: data of the Central Dispatch Office of the Russian Fuel and Energy Industry

### Table 7
Adoption of Voluntary Commitments and associated gas production and utilization figures

Source: oil company data

<table>
<thead>
<tr>
<th>Company</th>
<th>Adoption of Voluntary Commitments</th>
<th>Program implemented to solve the problem</th>
<th>Associated gas production volume, bcm</th>
<th>Level of utilization, %</th>
<th>Flaring, bcm</th>
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</thead>
<tbody>
<tr>
<td>Surgutneftegaz</td>
<td>Adopts with certain reservations (from now on for the entire company, 4 years upon commissioning for remote and particularly complex fields).</td>
<td>Program of Action to Utilize (Use) Associated Gas in Subsurface License Areas of Surgutneftegaz for 2006-10</td>
<td>14.02</td>
<td>93.5</td>
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<td>Program of Action to Utilize Associated Gas in Company Facilities for 2009-13</td>
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<td>Ca. 95%</td>
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<td>0.762</td>
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<td></td>
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<td></td>
<td></td>
<td>70.4</td>
<td></td>
</tr>
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<td>TNK-BP</td>
<td>Programs aimed to increase associated gas utilization levels in regions of operations</td>
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<td>8.72</td>
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<td>2.06</td>
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<td>8.3</td>
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<td></td>
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<td></td>
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<td>LUKOIL</td>
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<td>Slavneft</td>
<td>Program to Bring Associated Gas Utilization Level to 95% by End of 2011</td>
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<td>0.92</td>
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</tr>
<tr>
<td>Gazprom neft</td>
<td>Medium-Term Program titled 'Associated Gas Utilization and Associated Gas Use Efficiency Improvement'</td>
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<td>2.06</td>
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<tr>
<td>Rosneft</td>
<td>Does not adopt</td>
<td>Program to Achieve 95% Gas Utilization in Operated Fields by 2012</td>
<td>13.56</td>
<td>59</td>
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<tr>
<td>Irkutsk Oil Company</td>
<td>Does not adopt</td>
<td>Program to Bring Associated Gas Utilization Level in Yarakhtinskoe Oil and Gas Condensate Field to 95% by End of 2011</td>
<td>0.02</td>
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<td>Russneft</td>
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<td>Salym Petroleum Development N.V.</td>
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<td>Sakhalin Energy</td>
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<td>Total Russia</td>
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Empty cells mean the company provided no data.
WE ARE TOGETHER!

5,000,000 people already support WWF! What about you?

WWF is a public charitable professional organization. Our mission is to harmonize people with nature. Our goal is to conserve nature for people and together with people. 5 million global supporters back WWF with their contributions. WWF supporters are very different people but they are brought together by their common understanding of importance of conservation. Our supporters participate in WWF campaigns – they act when it is necessary to display one’s citizenship.

It does not take to be very rich to become a WWF supporter and help to conserve the Russian nature. A WWF supporter makes a contribution starting from 500 rubles each year. Upon entering the organization, he or she gets an ID, a Panda badge, and subscription for Panda newspaper and other information materials. Your entire family may become supporters – the contribution starts from 1000 rubles per year. Everyone can make a significant contribution to conservation of the Russian nature by making transfers starting from 5000 rubles per year to the WWF account. Such supporters get an honorary status of Earth Keepers, a named certificate and a Silver Panda.

More than 8,000 people in Russia have already supported WWF with their contributions. We are certain that our big country is home to many more people who are ready to help the nature. We invite you to support WWF. You can make your supporter contribution in our Moscow office, by transferring money using a bank or an Internet card on the web site, by making a money transfer from any branch of Sberbank or by opening a write-off account in your own bank. WWF invests all of the raised funds in professional conservation of nature. We need your help to keep our work going.

Join us! Send SMS saying VMESTE to 7050*, and we will answer your questions and tell you how to become a WWF supporter. Please, visit our web site www.wwf.ru to learn more about our programs.

* SMS cost is 15 rubles

Together for nature!
WWF is one of the largest independent international environmental organizations bringing together some 5 million permanent supporters and operating in more than 100 countries.

WWF mission is to stop degradation of the Planet environment in order to harmonize people and nature.

The strategic areas of WWF activity are:

• conserving biological diversity of the Planet
• ensuring sustainable use of renewable natural resources
• promoting action to mitigate environmental pollution and wasteful use of natural resources.

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