

**RUSSIA - Associated Gas Recovery Project for the Komsomolskoye Oil Field****Environment Impact Assessment and Environment Management Plan****SUMMARY**

**Introduction.** Currently, with commissioning of the new oil wells, the output of oil and associated petroleum gas (APG) at the Komsomolsk area is increasing. However, marketable goods output in fact remains at the same level, due to insufficient capacity of the Gubkinsky Gas Processing Complex (GPC). Currently the load of APG at the Gubkinsky GPC is 2,150 million m<sup>3</sup>/year with an indicative capacity of 2,140 million m<sup>3</sup>/year; therefore it cannot accept additional volumes of gas for processing. Thus, there is a need for an alternative solution for usage of APG which could be its collection, processing and delivery to the Gazprom main transportation system. For that purpose, a Booster Compression Plant (BCP) with a pipeline was designed for processing and pressing the Komsomolsk APG and connects it with the Gazprom Unified Gas Transmission System.

**Project goals and objectives.** The project has the following main objectives:

1. Implementation of the Rosneft gas utilization program increasing the APG utilization efficiency up to 95%;
2. Collection of APG at the Komsomolsk oil field, its processing to standard specifications (OST 51.40-93), pressing and transportation into Gazprom Unified Gas Transmission System for retail to end consumers. .
3. Reduction of APG and/or its flaring products emissions into the atmosphere, and improvement of the regional air quality;

The project costs are about RUR 5.43 billion (US\$2.3 billion) and implementation is expected to start at the beginning of 2010.

**Main project activities.** The project includes construction of:

- *Komsomolskaya Booster Compression Plant (BCP)* with pipeline and communications overpasses between the BCP and the dewatering unit, collection sump, access road and fire station adjacent to the BCP;
- *Gas pipeline:* connection from the Komsomolskaya BCP of RN-Purneftegaz Ltd. with the existing pipeline from the Komsomolsk gas fields (KGF) of Noyabrgazdobycha Ltd. of the Gazprom Unified Gas Transmission System;
- *Gas registration unit* of the Komsomolsk gas field of RN-Purneftegaz Ltd. (individual aboveground connection of the gas pipeline into the Gazprom Unified Gas Transmission System with an access road and power supply lines).

The proposed BCP and its connection pipeline will be located near the current flare stack of an existing treatment facility operated by Gazprom.

**EA methodology.** The environmental impact assessment (EIA) is based on existing Russian EIA legal framework, including relevant laws, regulations, guidelines, and national standards (GOSTs).

- Federal Law “*On Environmental Protection*”, #7-FZ of 10.01.2002;
- Federal Law “*On Ecological Expertise*” of 23.11.1995.

- Regulation “*On Assessment of Environmental Impact of Planned Economic and Other Activities in the Russian Federation*” (Order # 372 of the Russian Federation State Committee on Environmental Protection, approved on 16.05.2000);
- Practical Guidelines to SP 11-101-95 on development of the Environmental Impact Assessment section within feasibility study on construction of business structures, buildings, installations (TSENTRINVESTPROEKT Government Enterprise, 1997), etc.

According to SP 11-101-95 the EIA was conducted in following phases:

1. Notification, preliminary assessment and compilation of a relevant scope of work.
2. Research on environmental impact and development of a draft version of EIA.
3. Development of a final version of EIA.

In preparing the EIA study and assessing the current status of the environment of the project area there were used various data and sources of information and in particular: (a) annual and multiannual climatic and hydrological reference books, of the local meteorological centers of the Russian Federation Hydrometeorological Agency; (b) annual reports of the river basin protection departments; (c) data from Nizhneob’rybvod Federal Government Agency with regard to water quality; (d) annual reports of the regional geological agencies of the Russian Ministry of Natural Resources (MNR); (e) field investigations; and, (f) reports on the forest status and data from Forest Management Plans of the MNR Forestry Departments; various land use data of the specialized organizations of the Russian Academy of Sciences, Nizhneob’rybvod FGA, agencies of local farming administrative agencies reports.

**WB EA project category.** The project is a B category project for environmental assessment purposes in accordance with the World Bank OP/BP 4.01 ‘Environmental Assessment’. Project’s Environmental Assessment and Environmental Management Plan (EA/EMP) provides assessment of air emissions, solid waste management, water consumption and wastewater discharge, land use and site contamination, occupational health and safety, environmental, health and safety management system, and environmental monitoring system. It also identifies environmental impacts, mitigation measures and institutional responsibility for mitigating these impacts. The project triggers WB OP on “Environmental Assessment” as well as OP on “Natural Habitats”.

**Description of the current state of the project area.** The project is located in West Siberia, in the Komsomolsk area of the Purovsky District of the Yamal-Nenets Autonomous Okrug of Tyumen Oblast. The nearest settlement is the Gubkinsky town, placed 17 km south-east of the southern border of the license area. A considerable part of the Purovsky District area (43,900 km<sup>2</sup>) belongs to Verkhne-Purovsky Agricultural Production Cooperative (APC). There is no indigenous population in the proposed project area due to unfavorable landscape and climatic conditions (excessive moistening).

The project area is a very flat plateau with abundant small lakes and rivers, swamps, brush and forests. Outside of oil fields and few small settlements there is very little human activity. The immediate project area lies 10 km west of Gubkinsky in the Komsomolskoye Oil Field which is simultaneously exploited by Gazprom (natural gas) and Rosneft (oil) in different depth levels. There are numerous existing installations, such as drilling pads with towers, service and haulage roads, storage areas, power transmission lines, pipelines, pumping, booster and regulation stations, gas separation and treatment plants. The area of the prospective construction works is dry (i. e. not swampy) mostly covered by loose forest, and the proposed pipeline would have to cross only two minor streams (Voroiaha and Voratarkaiaha) on a very short distance – about 7.0 and 10.0 m.

According to the construction standard SNiP 23-01-99, the facility site is classified as the 1<sup>st</sup> climate district, subdistrict E, and its meteorological characteristics are based on the data of the Tarko-Sale meteorological station. The average annual air temperature is -6.5°C. The longest climatic season in the area is winter. The coldest month of the year is January with an average temperature -25.1°C. In the coldest months the temperature may fall up to -55°C. There are about 158 days of sustainable frost per year.

From geographical point of view the project area is placed in the northern part of taiga sub-zone of the Western Siberian Plain in the Pur-Tazovsky District, and in the Pyaku-Pur river basin –in particular in between its left tributaries - Khekud'yakha, Voratarkayaha and Vorayakha rivers. According to the Russia soil zoning, the project area is classified as northern taiga sub-zone of gley-podzolic soils. The specifics of soil in this area are determined by intensive swamp formation process and overall soil gleying.

In terms of Biodiversity the project area is represented by forest (57% of the project area) and swamps (43%) ecosystems. The forests are composed mostly by pine and birch trees. The swamps vegetation is presented by various types of lichen and green moss, fungus, as well as by various herbs. Additionally on the swamps from place to place it is possible to see limited areas of birch groves and shrubs. Due to the intensive oil explorations in the project area, the flora and fauna from the territories adjacent to oil platforms, pipelines, power transmission lines, roads are severely degraded. On the swamps there are limited number of species (particularly frogs, snakes and lizards) none of which are listed as endangered or threatened.. Among the forest fauna species are a variety of mammals including rodents, canids, bear and deer). While in the project area might be found a few flora species that are considered according to Iamalo-Nenets Red Book rare and endangered, such species are not presented on the proposed sites for BCP and pipeline . In the general area of the project there are some rare and endangered birds and other fauna, that might be seen particularly during the summer time, but the project site does not include any critical habitat for rare, endangered or migratory species.

A special analysis of the current status of environmental pollution of the project site was done by West Siberia Ecological and Engineering Academy. The results of the study show the current level of air pollution is relatively low. It was taken 12 samples around the existing oil and gas facilities (on the distance from 20-400 m) which indicated the level of pollution with various pollutants (NO<sub>2</sub>; NO; SO<sub>2</sub>; CO; dust; soot) is lower than permissible concentrations. Similarly, the analytical data with regard to surface and ground water pollution show the level of pollution (and in particular pollution with oil products and phenols) also lower than permissible concentrations (for example level of pollution with oil products is around 0.02-0.042 mg/m<sup>3</sup> while the permissible level is 0,05 mg/m<sup>3</sup>; level of pollution with phenols is around 0,001, - while permissible level is also around 0,001 mg/m<sup>3</sup>). The water samples were taken at the distance from 0.1 km up to 0.4 km from oil and gas platforms. The Academy also conducted an analysis of riverbed deposits which shows a slight increase of oil products which decrease towards to river downstream (from 250 mg/kg to 151 mg/kg). At the same time the data concerning soil pollution shows higher level of pollution with hydrocarbons as the result of oil spills. The data from that table show “significantly polluted soils” in half of 12 taken samples (with the concentrations of hydrocarbons at the level of 2,000-3,655 mg/kg, while the permissible level is 100 mg/kg) in the immediate surroundings of the oil platforms (at the distance from 50 to 400 m from the oil and gas facilities) and in other half samples – the level of pollution less than 600-700 mg/kg (corresponding mostly to “normal”and/or “increased” level of pollution) in areas outside of oil exploration platforms. Thus the study shows no major contaminations by hydrocarbons, aside from the immediate vicinity of oil platforms.

**Project alternatives.** The project provides three siting options for the planned BCP and gas registration unit including the connection pipeline from the BCP to the Gazprom Unified Transmission System, allowing the selection of the most environmentally, economically and technically acceptable solutions. The main distinction between the proposed options is the length and location of the connection pipeline. The so-called zero option (no construction of the BCP) was also examined concluding that it is not a preferable option as in addition to lost economic and social benefits it would allow emissions of about 200 tons of flare pollutants annually into the atmosphere which would negatively affect the environment and health of the people living in the Purovsky District.

The comparison of the proposed three alternatives was done based on the potential damage of the environment. The damages were estimated taking into consideration potential impacts on the following: vegetative cover; fauna; land resources; payments for air pollution; payments for generated wastes; and potential damage in the case of pipeline accidents. Based on that it was selected an alternative with the smallest aggregate ecological damage that might be incurred to the environment during construction and exploitation phases of the planned facilities

**Possible environmental and social impacts.** As the project includes medium scale construction and technical installation of BCP and a pipeline of about 5 km length to an existing compressor station, the proposed activities are not expected to have any large scale or irreversible negative impacts on sensitive environmental or social conditions.

The impact on atmospheric air will consist in emission of a series of pollutants at construction (use of special transportation machinery, welding and painting jobs, and earthwork) and exploitation (emission of atmospheric air pollutants from organized and non-organized sources) phases of the planned technological facilities. It is expected about 20 different types of pollutants, such as SO<sub>x</sub>; NO<sub>x</sub>; CO; VOCs; Benzene; etc; with a total amount of 71 tons will be emitted into the atmosphere during both phases - construction and exploitation of the planned facilities. The total amount of waste generation it is expected to be about 480 tons (including packaging wastes polluted with oil, welding wastes, scrap metal, metallic drums, plastic wastes, as well as household wastes). The construction and installation works would also have small scale impacts on the water bodies and their hydrological, regime, mechanical disturbance of soils within the construction areas, and changes of the relief mostly along the proposed pipeline, access roads and around the BCP. There will be no any waste water discharge in the rivers and lakes and thus it is expected no impacts on surface water quality. The project implementation will have a direct impact on a limited area of about 48 hectares, including 37 hectares of forest ecosystems, mostly along the pipeline, roads and around the BCP, causing limited impacts on species of surface vertebrates (mammals, amphibians and birds). The proposed pipeline and BCP will be placed in the area with no important habitats for rare and endangered species and thus there will be no impacts on them. The impacts on the crossing rivers and their ichthyofauna are expected to be minimal as the affected area is very small and the pipeline will be putted below the rivers bed at least at the level of 1.0 m during a relatively short time.

At the same time the project will have large positive environmental impacts that are related to the reduction of GHG emissions (about CO<sub>2e</sub> 2.4 million tones annually). Apart from emission reductions due to the reduction of flaring, the expected benefits from the project include the decrease of other environmental pollutants, such as SO<sub>x</sub>, NO<sub>x</sub> and others. It also decreases considerably thermal (the flare burns at an average temperature of 1700°C), visual (light) and noise pollution to the local environment.

*Impact on the social environment.* There have been no permanent settlements in the areas adjacent to the planned facility; they have never in fact been used for deer grazing and for the needs of the other sectors of the conventional economy. Taking into account the proposed activities, no impact on the social environment is expected, including any direct and indirect adverse impacts on the indigenous peoples.

**Mitigation of the expected environmental impacts.** A set of engineering, technological and institutional measures will be implemented in order to avoid and minimize the expected environmental impacts during both construction works (pipelines, motor roads and area development) and operational activities. RN-Purneftegaz Ltd. approved a special action plan to improve environmental protection and enhancement of the state of environment in the site of the planned facilities construction. The proposed mitigation measures include: full insulation of the technological processes and flare systems, tests of pipeline and engineering equipment for durability and insulation, periodic control measurements of maximum permissible emissions on the Komsomolskaya BCP compound in general, and in the most potentially dangerous spots, wastes collection and their transportation to Gubkinsky landfill (the metallic wastes will be recycled by a specialized company “Polimertrans”), creation of a local water supply and sanitation system with the collection of waste waters and their biological treatment, hydro insulation of places for technical equipment, etc. (the details of the proposed mitigation measures are presented in section 2.1 of the EIA Report). A special attention is given to rehabilitation of degraded lands and natural habitats as the result of construction activities. In this regard it is proposed to conduct cleaning up the affected lands, their leveling and restoration of the vegetative cover, including replanting trees.

**Monitoring activities.** The environmental monitoring measures are described in details in Chapter 2.2 of the EIA report. The report stipulates all aspects of the monitoring activities, including: (a) legal framework and existing standards and guidelines for environmental monitoring; (b) procedures and indicators for monitoring of air quality and of snow cover; water (both surface and ground) pollution; state of the soil; level of pollution of river mud; (c) approved methodologies for monitoring of environmental components; (d) institutional responsibilities; and (e) reporting arrangements. Furthermore the monitoring plan contains very precisely the GPS coordinates of the places for investigations and for sampling. All monitoring activities will be implemented by Purneftegaz Department for Environmental Protection. Furthermore, the EIA study stipulates needed resources for monitoring plan implementation. The results of the monitoring plan will be submitted to the Department of the Russian Federal Nature Use Control Service (RFNUCS) for the Yamal-Nenets Autonomous Okrug (YNAO), to the Department of the Russian Federal Technological and Ecological Control Service (RFTECS) for the YNAO as well as to the WB team.

**EMP implementing arrangements.** To ensure ecological safety and appropriate environmental monitoring, RN-Purneftegaz Ltd. established a Department of Environmental Protection with a number of well trained engineers who are actively engaged in due diligence and quality control in the company’s production processes. The RN-Purneftegaz Ltd. system of ecological management is certified in accordance with the ISO 14000 international standards. The Department of Environmental Protection is governed by the applicable Russian federal legislation, internally by orders and instructions of the company’s management, by Rosneft standards, ISO and OHSAS international standards, , and by job instructions and other regulatory documents which provide guidance for the functioning of the ecological management system of the department (environmental protection agenda, department work plan, etc.). For conducting analytical activities the Department of Environmental Protection will use the Department of Labor and Industrial Safety of RN-Purneftegaz Ltd. which comprises an accredited eco-analytical

and technological research laboratory (E&TRL) thus ensuring high quality monitoring and control of the state of environmental components (quality of underground and surface water, concentration of emissions and discharges of pollutants into the environment, control over the work air zone, gas content, etc).

**Information disclosure and public consultations.** Based on the RF Law “*On Environmental Protection*” # 7-FZ of 10.01.2002, and in accordance with the Order of the Russian Federation State Committee for Environmental Protection # 372 of 16.05.2000 “*On Approval of the Regulation on Assessment of Environmental Impacts of Planned Economic and Other Activities in the Russian Federation*” and SP 11-101-95 “*Procedure of Development, Coordination, Approval and Content of Justification of Investments into Construction of Business Structures, Buildings and Installations*”, RN-Purneftegaz Ltd published in the Neftyanik Pripolyarya newspaper (# 48 (948) of 30.11.2007) an announcement of the project and EA&EMP report public consultations and invited all interested parties to participate. These consultations were organized and conducted by RN-Purneftegaz Ltd. jointly with the Purovsky District Administration on 15.12.2007 in the Geolog Center of the town of Tarko-Sale. They were attended by officials of the Oil Company, local self-government agencies, and design institutions, representatives of the indigenous peoples of the North and of other interested parties. The consultations participants expressed their support for the project and for the EA&EMP report. The full EIA Report was made publicly available on April 23, 2008 in Russian language at the Rosneft web site: [www.rosneft.ru](http://www.rosneft.ru) as well as its English Executive Summary in the WB Infoshop on July 16, 2008.