



# SUMMARY OF FINDINGS OF THE ADAPTATION PROJECT ENVIRONMENTAL EFFICIENCY ASSESSMENT

Intended for:

**JSC INK-Capital**

Date:

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## INTRODUCTION

The INK-Capital Group (INK-Capital), including its main operating company - Irkutsk Oil Company Limited (INK), is fully aware of the potential environmental consequences of its oil and gas projects, and is committed to develop the most efficient, technically and economically viable solutions to minimize the negative impact on the environment.

INK-Capital confirms its intention to develop and implement projects in the area of sustainable development of the Russian Federation wherever possible in relation to its activities.

As part of its Gas Business Development Programme, INK is gradually developing schemes to manage associated petroleum gas generated during oil production, such as gas processing and reinjection into productive horizons. In 2009 INK initiated its first projects under the Gas Business Development Programme supported inter alia by the special-purpose loan from the shareholder of JSC INK-Capital - the European Bank for Reconstruction and Development.

The development of the Yarakinsky oil, gas and condensate field (YOGCF) provides for construction and operation of several crude oil processing facilities. These facilities generate associated petroleum gas (APG) as a by-product of the commercial oil production process. The Project is divided into several stages and provides for processing and utilization of a part of APG to avoid flaring and recover the valuable components, and two types of gas reinjection: into the oil reservoir and into the gas horizon (the Project). The Project is being developed by INK.

By its intention and scope the Project is recognized an adaptation project in accordance with the Government Decree of September 21, 2021 No. 1587 "On Approval of Criteria for Sustainable (incl. Green) Development Projects in the Russian Federation and Requirements for the Sustainable (incl. Green) Development Projects Verification System of the Russian Federation". In December 2021, the Moscow Exchange registered the first-ever bond issue that complies with the principles of transition bonds and meets the applicable criteria for adaptive financial instruments. The issuer of the securities is JSC INK-Capital, and the bonds are on the Second Level quotation list of the Moscow Exchange<sup>1,2</sup>. The technical placement of the transition bonds of JSC INK-Capital took place on December 17, 2021.

JSC INK-Capital engaged Environ Consult CIS, LLC (formerly Ramboll CIS, LLC) to analyze the environmental effects of the adaptation project. The assessment is based on the review of the Project documentation and the findings of the Project effects analysis in terms of reducing the environmental impact and meeting the requirements for adaptation projects.

This Summary report has been prepared on base of the Adaptation Project Environmental Efficiency Assessment Report prepared by Environ Consult CIS with all reasonable care and diligence, and taking account of the Services and the Terms agreed between Environ Consult CIS and INK-Capital. This Summary report is intended for disclosure of the information of the Adaptation Project characteristics.

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<sup>1</sup> Initially, the bonds were placed on the Third Level quotation list, later the level was raised.

<sup>2</sup> Moscow Exchange registered the first issue of transitional bonds // Vedomosti. Ecology. – December 15, 2021. [https://www.vedomosti.ru/ecology/green\\_finance/news/2021/12/15/900787-birzha-zaregistrovala-pervii-vipusk-perehodnih-obligatsii](https://www.vedomosti.ru/ecology/green_finance/news/2021/12/15/900787-birzha-zaregistrovala-pervii-vipusk-perehodnih-obligatsii)

## PURPOSE OF THE PROJECT

At the global level, the Russian Federation is the leader by the volume of flaring of associated petroleum gas. However, the country is applying consistent efforts to develop legislation and economic tools for carbon regulation, such as encouraging reduction of APG flaring in general. At the level of oil and gas companies, integration programmes are being developed for the oil and gas projects to facilitate more complete processing of the extracted crude.

INK-Capital is fully aware of the potential environmental consequences of its oil and gas projects, and develops the most efficient, technically and economically viable solutions to minimize the negative impact on the environment. INK-Capital is committed to develop and implement projects in the areas of sustainable development of the Russian Federation wherever possible in relation to its activities.

As part of its Gas Business Development Programme, INK is gradually developing schemes to manage associated petroleum gas generated during oil production, such as gas processing and reinjection into productive horizons.

The development of the Yarakinsky oil, gas and condensate field provides for construction and operation of several crude oil processing facilities. These facilities generate APG as a by-product of the commercial oil production process. The Project of INK-Capital at YOGCF provides for several stages of APG processing and utilization instead of flaring, whereas valuable components will be recovered, and two types of gas reinjection will be applied: into the oil and gas horizons (the Project).

The method of developing gas and condensate fields while reservoir pressure is maintained by reinjecting gas into the productive horizon is known as "cycling process". Maintaining reservoir pressure prevents retrograde condensation in the productive horizon and release of high-boiling hydrocarbons from reservoir gas, which constitute gas condensate. Re-injection of APG into the oil reservoir also boosts the pressure and thus contributes to the yield of hard-to-recover oil.

A project for reinjection of associated petroleum gas resulting from separation of reservoir fluid, as well as its products, is currently being implemented. The INK Project facilities also provide for recovery of fractions from the produced gas to be used or sold as a product.

The Project benefits will include a notable decrease in APG flaring, increased reservoir pressure in productive formations and, hence, enhanced extraction rate of natural gas and oil, as well improved recovery of C3+ fraction of gas.

## CONCLUSION ON THE PROJECT ENVIRONMENTAL EFFICIENCY

Environmental effect of the Project over the period from November 2021 to October 2022 has been verified in terms of emissions of both greenhouse gases and pollutants. Comparison of emissions from the adaptation Project and the zero alternative scenario demonstrated the net effect from implementation of the considered Project scope in 2022 of **1.275 M t CO<sub>2</sub>-e**, or a reduction in GHG emissions from unique sources **by 85.65%** over year 2022. The main contribution is made by the reinjection of APG into the oil reservoir (839,000 t CO<sub>2</sub>-e), the second largest contributor is the cycling process (416,000 t CO<sub>2</sub>-e).

The total pollution emissions will decrease by **12.34 thousand tons, or by 94.9%**. Thus, the Project's contribution to the prevention of air pollution and reduction of pollution emissions is significant. The greatest effect of the Project implementation is observed when comparing emissions of carbon monoxide (decrease by **96,9%**) and carbon (char, by **100%**). The Adaptation Project facilities do not create conditions for burning gas with formation of carbon (soot, carbon char); therefore no emissions of this pollutant have been recorded.

Based on the assessment results, it is clearly shown that the Project meets the requirements for adaptation projects and demonstrates good environmental performance.