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Case study: Sakhalin II

At present, Sakhalin II (phase I) is one of the largest among oil and gas projects supported by MDBs in Russia: it ranks third in the amount of the EBRD oil and gas financing in the country. The present chapter discusses the ambiguous issue of expected social benefits, high environmental risks, unsatisfactory quality of performance (problems of project compliance with national and EBRD environmental requirements) and insufficient oil spill response capacity of the project sponsor.

Project description

The table below contains summary of project objectives, essential practices and standards applied as well as data on implementing companies and financiers.

Table 7. Description of Sakhalin II project

Project	Commercial development of the Astokh feature of the Piltun-Astokhskoye oil and gas field located in the Okhotsk Sea 15 km from the Russian mainland near Sakhalin Island with oil export by pipeline and tankers to the countries of the Asian-Pacific region
Objectives	<ul style="list-style-type: none">• increase Russia's crude oil production and exports;• promote economic development of Sakhalin Island;• introduce modern and environmentally sound offshore oil production techniques; and• provide demonstration effect that would facilitate implementation of production-sharing framework in Russia enhancing fiscal stability for oil and gas companies and facilitating foreign investment.
Involvement	Operator: Sakhalin Energy Investment Company Ltd. (SEIC) - a joint venture comprised of:

	<p>Marathon Petroleum Sakhalin Ltd. (USA - 37.5%);</p> <p>Mitsui Sakhalin Development Company Ltd. (Japan - 25.0%);</p> <p>Shell Sakhalin Holdings BV (USA - 25.0%); and</p> <p>Subsidiary of Mitsubishi Oil Corporation (Japan - 12.5%).</p>
Financing	<p>Sakhalin Energy Investment Company</p> <p>EBRD - USD 116 million (ECU 102 million);</p> <p>Overseas Investment Corporation (OPIC) - USD 116 million; and</p> <p>Export-Import Bank of Japan (JEXIM) – USD 116 million.</p>
Current status and activities under project	<p>Piltun-Astokhskoye field development, Phase I:</p> <p>establishment of a significant new field using a mobile drilling and production unit Molikpaq including drilling of 12 production wells and two wells for accompanying gas re-injection, construction of pipeline and temporary work camp for 100 workers</p> <p>Seismic survey completed, two appraisal and three production wells drilled, seasonal oil recovery</p>
Category	A/0 requiring EIA with associated public consultations
Standards Applied	environmental standards developed on the basis of Alaskan offshore environmental, health and safety guidelines that meet or exceed WB standards
Advanced practices used	<p>Gas separation from oil at the platform, compressing and re-injection of the produced gas into the formation, gas flaring in cameras for emergency use, application of state-of-the-art automatic shut-off valves and periodic break-away safety couplings on the flow-line from the floating storage to the tanker allowing to stop production in the event of the facility damage, use of low-toxicity water-based drilling muds with re-use of up to 70% muds, treatment of formation fluids</p> <p>Prohibition to seismic sounding or explosions in the event of the whales being in proximity and during limited visibility periods</p> <p>EAP with independent audit schedule, oil-spill modelling, coastal sensitivity studies, oil-spill contingency plan</p>

Data source: EBRD. 1997. Sakhalin II. PSD; EBRD. 1997. Sakhalin II. Environmental analysis; Garipov, V. 2000. K voprosu o problemakh realizatsii soglasheniya o razdele productsii [On the implementation of Production Sharing Agreement]. *TEK* (1); Sakhalin Energy investment Company. 1994. Techniko-economiceskoye obosnovanye po projektu Sakhalin

II, nachalni etap osvoyeniya [Feasibility study on Sakhalin II, Phase I]; State Committee on Environmental Protection of the Russian Federation. 1998. *Conclusion of the Expert Commission of the State Ecological Expertise on the feasibility study for Piltun-Astokh licensed area (Phase I - Astokh feature) - Project Sakhalin II*. Report (May)

At first sight, on the basis of the project description, Sakhalin II appears to be beneficial for both the Russian Federation and Sakhalin economy, and harmless to the environment due to a broad set of mitigation measures/best practices being integral part of the operations and designed to comply with the EBRD requirements. However, the offshore Sakhalin operations are likely to have significant negative impact due to high risk and inadequate oil spill response while the problems with the project's environmental documentation and doubtful compliance with all the applicable laws and requirements might enhance this impact.

Economic and social benefits

As far as the economic side of Sakhalin II is concerned, it is commonly supposed that Sakhalin II project is to bring Russia fabulous revenues and social benefits. However, this issue is rather disputable. Some economists tend to estimate the role of the project as vitally important for the whole country, since Sakhalin II involves not only long-term participation in expected profits, but also near-term several hundred million USD compensation for subsoil use [lxii]. Nevertheless, the amount of revenue flowing into the Russian Federation and Sakhalin region budgets from Sakhalin II appears to be overestimated. According to Richard Fineberg's calculations [lxiii], during early production phase bonus and royalty payments from Sakhalin will total only USD 75 million per year, which is 30 times smaller than payments produced in Alaska. Moreover, the additional revenue to be received by the Russian Federation and Sakhalin will be paid only after Sakhalin Energy is completely reimbursed for its investment, which is likely to take long years. Thus, any significant revenue promises to start flowing into Russia only in remote future.

Taking into account the current social and economic difficulties faced by the Sakhalin region, the offshore hydrocarbon development is likely to raise the level of welfare of the local population. Since the project is implemented on the terms of production sharing agreement (PSA), it stipulates the involvement of domestic resources. Thus, the boost of oil production activities in the region is theoretically expected to provide new employment opportunities (with all necessary training programs) and demand for application of domestic equipment and materials.

Nevertheless, the share of local materials that could stimulate domestic production in reality is quite limited: autonomous energy supply system used in the project is adjusted to 110 V [lxiv] while in Russia it is 220 V, which leads to application of only imported equipment and subsequent increase in employment in some other countries and not on Sakhalin.

It should be also pointed out that the energy supply in the Sakhalin region is poor, and the population of many villages can use electricity only within certain time periods making several hours per day. The development of local fossil fuel reserves of the Astokh feature is not expected to change this situation, since Sakhalin Energy Company does not intend to provide non-stop safe supply to local settlements prior to production export [\[lxv\]](#).

Also, it should be mentioned that during project implementation certain damage will be caused to the local fishing industry through fishing area take-up, loss and damage to fishing gear, lowered quality of fish catch. Regional fishery currently employs more than 50,000 people while indigenous Nivkh people totally depend on salmon fisheries most sensitive to environmental changes. In these circumstances, any oil spill is likely to have a devastating effect on the well-being of Sakhalin residents. This aspect, together with the other two-sided economic and social benefits resulting from the project, provides grounds for a critical approach to Sakhalin II. The environmental risks and impacts considered below may enhance the doubts arising around extreme profitability and sustainability of the project.

Environmental risks and non-compliance

Theoretically, the EBRD provides financial support to operations consistent with all the existing national environmental legislation/standards and EBRD environmental requirements. Also, the EBRD claims to deal with responsible transparent companies that ensure high quality of operations. However, Sakhalin II project proves that there can be deviations from this policy. The inconsistencies and deficiencies in environmental materials submitted by Sakhalin Energy to Russian Federation and the EBRD may have negative environmental implications and are discussed in the present chapter.

First of all, it should be emphasised that some critical components of environmental assessment remained incomplete. According to the Russian legislation [\[lxvi\]](#), financing and fulfilment of any works on the project on the territory of the Russian Federation is allowed only in the event of positive conclusions of State Ecological Expertise. In case of Sakhalin, in 1993 the Expert Commission of the State Ecological Expertise of the Russian Ministry of Environment gave a negative conclusion for the feasibility studies prepared for Piltun-Astokh and Lunskeye offshore oil and gas field. However, beginning from 1992 SEIC has been actively performing exploration surveys and construction works on Sakhalin shelf without a legal permit for such activities.

Without all necessary domestic environmental assessments (the Russian variant is called OVOS) and Expertise conclusions from the Russian side, no foreign party has the official right to finance and start projects, even in case of conducting their own satisfactory EIA. However, the second EBRD board review of the project took place in late 1997 [\[lxvii\]](#). Already with the EBRD participation, the purchase of drilling and production platform Molikpaq, its transportation and refurbishment in South Korea took place in 1997-early 1998 - before obtaining the positive conclusion of the State Ecological Expertise.

Another legislative problem associated with SEIC performance concerns the applied technologies and practices. Though the EBRD assured that the treatment and disposal of

all drilling wastes would be handled in compliance with good industry practices and the national legislation, meeting or even exceeding WB standards, Sakhalin II reveals the contrary. The feasibility studies compiled by SEIC contained provisions on the controlled discharge of drilling muds and cuttings into the Okhotsk Sea. The proposed technique was obviously in conflict with best available practices and standards of the Russian Federation which provide for re-injecting of the muds/cuttings into the well or shipment ashore for processing and disposal, and prohibit the discharge of any drilling wastes into the open sea [\[lxviii\]](#). Taking into account that the Okhotsk Sea belongs to a special category of water bodies due to its significance for preservation and reproduction of valuable fish, this practice was undoubtedly damaging not only for the environment but also for local fisheries.

To solve this problem, the foreign companies operating in the Far East (Sakhalin I and Sakhalin II projects) urged the government to introduce modifications into the existing Russian law concerning the Far East zone and received a permission to discharge production waters, water-based drilling muds and cuttings into the open sea [\[lxix\]](#). This process of giving legal status to an illegal action was unprecedented and drew public attention. Thanks to the decision of the Supreme Court, which declared the government's regulation contradicting and violating from the Russian legislation, the President Vladimir Putin annulled the discussed regulation [\[lxx\]](#). While this half-a-year struggle between environmentalists and oil companies was taking place, significant environmental damage from drilling discharges was done.

In Sakhalin II numerous problems and non-compliance issues are associated with EIA. Though prepared by independent consultant firm and only compiled by SEIC, the submitted EIA did not meet international standards. According to Dr. Melkov [\[lxxi\]](#), a special consultant to the Russian Parliament, the assessment was “absolutely unconvincing” and provided a general overview without consideration of the specific conditions of the Okhotsk Sea. The EIA did not take into account the significance of general cumulative impacts likely to occur during different phases of the project implementation as well as the impacts resulting from implementation of other oil and gas development projects in the area (at present, there are 6 projects in Sakhalin under implementation or at preliminary stages). This did not allow setting proper limits for acceptable extent of impacts and might result in significant changes in sea ecosystem.

Also, in the Natural Resources Policy the EBRD gives high priority to high-quality consultation process in RF. According to the Russian legislation [\[lxxii\]](#), since Sakhalin II pre-supposes the benefits and impacts at the national scale and involves foreign participation, the EIA hearings and consultations are to be conducted at the federal level. However, the consultations were held only within the Sakhalin region. As one of the bank's officials pointed out, the EBRD is not an implementing agency for the Russian Federation and conducted EIA process in accordance with its own policies. The consultation process on Sakhalin II resulted in non-compliance with the country's requirements, and this issue was obviously left by the bank to be discussed and settled down with the Russian authorities and not the EBRD staff.

According to an independent expert team [\[lxxiii\]](#), SEIC contingency plan contains several over-optimistic statements on sensitivity of birds and mammals to oiling, which results from reliance upon inadequate and outdated data. It should be noted that the issue of data adequacy is critical in some other respects. For example, according to the EBRD consultants' opinion, EIA provides insufficient amount of baseline information for estimation of impacts on fisheries. It should be stressed that the fact of data insufficiency was pointed out with recommendations for further improvement, while PSA on Sakhalin II project requires description of much broader range of issues including full assessment of the project impact on sea bio-resources as well as agreed with the Russian side compensation measures for the damage to fish stocks, which are absent from SEIC documentation.

In spite of obvious EIA non-compliance with the bank's guidelines and Russian legislation, the EBRD agreed to provide support to SEIC and requested only preparation of EAP under condition that several key elements of the projects will be completed later. In other words, the EBRD gave Sakhalin II the green light, though it was aware of the existing cases of inconsistency and non-compliance testifying to the company's unsatisfactory level of performance.

The EBRD declares sustainability the key principle of its operations. Logically, all the projects supported by this bank including Sakhalin II are supposed to be sustainable both in economic and environmental respects. However, the environmental safety of the Sakhalin project appears to be doubtful, since the risks involved are not adequately addressed by the oil spill response measures proposed by SEIC, and their implementation seems unfeasible due to the company's poor capability to organise immediate clean-up.

First, it should be emphasised that the equipment chosen to perform the operations should be given due consideration for risk assessment. Melkov states [\[lxxiv\]](#) that the platform used by the company does not meet the modern technical requirements. The unit Molikpaq was constructed in 1984 and was originally designed not as a drilling and production platform but as a unit for drilling of exploratory wells at the sea level 12m [\[lxxv\]](#). The platform was modified in South Korea to be able to perform not only drilling but also production functions and assembled in the Okhotsk Sea at the depth of 28-30m. Molikpaq was delivered to Sakhalin 20 years after its construction, while the normal period of operation of similar units is 20-25 years [\[lxxvi\]](#). Since this outdated unit will now be operating in the conditions different from the ones it was originally designed for during upcoming 20-30 years, it would be unrealistic to expect that its environmental performance will be significantly higher than in case of other Russian oil companies using old unreliable equipment.

Moreover, seismic considerations should be given due weight in analysing the existing risks. According to the project feasibility study, the Molikpaq's ability to resist seismic activity is quite limited - within 7-8 points at Richter's scale, while the earthquake in Neftegorsk on Sakhalin Island proved that the region has the potential for stronger earthquakes which can lead to numerous ruptures in pipelines and oil spills [\[lxxvii\]](#). Thus, the Molikpaq's relatively weak seismic resistance and high wave force in the

region are the factors adding to the opportunity of the unit's breakdown, which would result in a substantial oil spill.

Also, the attention should be drawn to the fact that SEIC has chosen the most potentially dangerous way of oil transportation - by tankers. According to the world's statistics [lxxviii], tanker transportation accounts for over 50% of accidental oil spills. The Okhotsk Sea is notorious for its storms, tsunamis, sea currents, ice sheers and fog lowering the visibility, therefore, in these weather conditions, the presence of the floating storage with capacity of 140,000 tons and continuous circulation of tankers carrying up to 90,000 tons of oil threatens the environment with collisions and accidents resulting in large oil spills [lxxix]. Moreover, the company does not require the use of double-hull tankers, which would be consistent with the EBRD statement about application of best available and good industry techniques and could decrease the risk of accidents.

Considering the risks of spills from the tanker, we should point out the issue of financial responsibility for the oil spill response and clean up as highly significant. The financial liability of the tankers used by SEIC for oil transport is defined as USD 81 million [lxxx], which is an insignificant sum, insufficient to address a large-scale oil spill. The response to Exxon Valdez spill of 40,000 tons of oil, for instance, cost over USD 2 billion [lxxxii]. Thus, believing that the sum of USD 81 million could cover all the costs of the spill including clean up and compensation for damage in the case of Sakhalin as it is proposed in the event of tanker accident would be just ridiculous. As for the opportunity for the operating company to cover the costs, SEIC has ensured least costs possible for itself: it can have financial responsibility only until the tanker leaves the floating oil storage unit.

Generally, it should be emphasised that SEIC has inadequate financial ability to provide oil spill clean up and compensation. According to the company's management, for oil spill clean up and recovery the most part of expenses is to be covered by insurance agencies or international treaties. However, insurance cannot be paid in certain cases (e.g., force-majeur or accident due to the personnel's error). There exists a risk of non-financing of appropriate response works, since SEIC is a company with a limited responsibility, which means that it is responsible only for the sum of its capital fixed in the Charter, namely, USD 100 million. The companies participating in SEIC also do not seem to be able to pay the necessary costs: Marathon, Shell, Mitsui and Mitsubishi participating in the Sakhalin project are not world-wide recognised giant oil and gas operators as it is commonly believed but their subsidiaries with limited financial responsibility.

SEIC financial responsibility for the oil spill response and compensation for the damage does not ensure elimination of the consequences of the spill. Thus, in this respect, Sakhalin II should be considered as a highly risky project in terms of potential environmental and economic damage to the Russian Federation, since the latter is likely to be a financier and compensatory in case of a large oil spill.

In addition to the issue of financing, due attention should be paid to the oil spill response capacity of the company and existing oil spill contingency plan. Pavlikov [lxxxii] argues that the oil spill contingency plan submitted by SEIC is of declarative nature and is

characterised by lacking important details and exact positions on particular issues (e.g., company's responsibility for environmental damage and response operations, equipment applied for response to oil spills of different levels).

It is widely acknowledged [\[lxxxiii\]](#) that oil spill response industry on Sakhalin Island is practically non-existent. The Russian government does not have any equipment in case of an oil spill (by the beginning of 1999, on Sakhalin only one vessel belonging to Ecoshelf was properly equipped with pumps and booms), no offshore or onshore infrastructure is available while sea safety service does not operate due to the absence of modern equipment [\[lxxxiv\]](#). The contingency plan suggests oil collecting in groups of 3 or more vessels with all necessary equipment in place and the well-trained crew, but this does not correspond with the available on Sakhalin resources. In the rough climatic conditions of Sakhalin it would be possible to organise this with 5-10 days' delay with involvement of vessels from other regions. Taking into account that the company can respond to a large-scale oil spill only with involvement of external agents (Sakhalin has contract with oil spill response firms in the UK and Singapore), we can state that due to delay needed for goods delivery from these countries, customs clearing and their installation on the vessels, the effectiveness of the response measures would be dramatically lowered.

The oil spill of any scale has significant negative consequences for the environment, and in the Sakhalin II case the situation would be complicated by transboundary nature of pollution (Sakhalin Island is located in the proximity of Japan) and slow bio-degradation of hydrocarbons in the environment due to low temperatures [\[lxxxv\]](#). Therefore, the thorough planning of oil spill response with clear issues of responsibility, exact measures and clean-up organisation would be essential for addressing the risk and ensuring a certain level of environmental safety in the region. However, this is not relevant to the company operating Sakhalin II project that is supported by the EBRD.

Considering overall potential implications of the project, in addition to the high risk of an oil spill and doubtful company's ability to provide proper response and compensation, there are several violations from the country's and EBRD environmental requirements regarding the quality of EIA (oil spill contingency plan, cumulative impacts assessment, consultation process). However, despite the inconsistencies and problems related to SEIC environmental documentation and performance, the EBRD is considering a new loan to start another oil and gas extraction project on Sakhalin, which could magnify the existing impact.

[\[lxxii\]](#) RF Ministry of Environment. 1994. Ministerial regulation 222 Ob otsenke vozdeistviya na okruzhayuschuyu sredu [On environmental impact assessment]. Passed July 2

[\[lxxiii\]](#) Lawn, D., Steiner, R., and Wills, J. 1999. Sakhalin's oil: doing it right. Applying global standards to public participation, environmental monitoring, prevention, response and liability standards in the Sakhalin Oblast of the Russian Federation. USA: Pacific Environmental Resources Center

[[lxxiv](#)] Melkov, G. 1998. *Expertnaya otsenka projekta Sakhalin II* [Expert assessment of Sakhalin II project]. Report to the State Duma Committee on geopolitical issues (August)

[[lxxv](#)] Dazhunts, E. 1997. *Khozhdeniye za tri morya* [Travel across three seas]. Sovetsky Sakhalin (October)

[[lxxvi](#)] Gorokhov, V. Environmental expert in oil production, Ecojuris. Informal interview. Moscow, 17 May 2000

[[lxxvii](#)] The earthquake in Neftegorsk resulted in rupturing oil pipelines in over 50 places and around 100 tons of oil spilled

[[lxxviii](#)] Popova, E. 1998. *Okhotomorsky treugolnik* [The Okhotsk Sea triangular]. *Novye izvestiya* (February)

[[lxxix](#)] Konstantinov, F. 1999. *Otsenka plana likvidatsii nefterazlivov* [Assessment of Sakhalin Energy Investment Company oil spill contingency plan]. Report

[[lxxx](#)] For comparison: in the USA the minimum financial liability required for oil tankers is USD 750 million.

[[lxxxii](#)] Lawn, D., Steiner, R., and Wills, J. 1999. *Sakhalin's oil: doing it right. Applying global standards to public participation, environmental monitoring, prevention, response and liability standards in the Sakhalin Oblast of the Russian Federation*. USA: Pacific Environmental Resources Center

[[lxxxiii](#)] Pavlikov, A. 1999. *Otsenka vozmozhnykh posledstvy nefterazliva v khode realizatsii projekta* [Assessment of potential impacts of oil spills]. Report

[[lxxxiii](#)] Pacific Russia. 1998. Oil and gas report 8 [on line]. URL:<http://www.russianfareast.com>

[[lxxxiv](#)] Konstantinov, F. 1999. *Otsenka plana likvidatsii nefterazlivov* [Assessment of Sakhalin Energy Investment Company oil spill contingency plan]. Report

[[lxxxv](#)] see Pavlikov, A. 1999