

## Conclusion.

This report by **Bellona** has focused on analysing the latest developments in Russia's oil and gas industry in the European north of the Arctic shelf, which includes the Barents, Pechora and Kara seas.

Today, the Arctic ecosystem is being subjected to a severe technogenic change bringing with it shifts in climate patterns, a global spread of pollutants, radioactive contamination etc. An active growth of oil and gas exploration in the region may become a death sentence for its environment. The natural world of these northern seas is so sensitive and so vulnerable that even a slightest breach in its structure can lead to consequences one will be unable to reverse. Furthermore, these consequences will be difficult to prognosticate as the ecosystems of northern seas today have yet to be fully studied.

It seems obvious that when the Arctic shelf is concerned, the risks brought about by exploring oil and gas reserves there are higher than anywhere else, as that is the necessary result of advancing the industry in the difficult conditions of the northern environment and climate – which calls for the application of unique technologies and equipment – while both infrastructure and the legislative norms of safety remain underdeveloped.

**Bellona** believes that the oil and gas industry – in Russia as well as abroad – is yet unprepared to explore the hydrocarbon reserves of the northern seas for the following reasons.

### **The study of the marine ecosystems of the Arctic shelf must first receive the attention it is due.**

In the specific conditions of the Arctic, a negative impact of the oil and gas complex on the various constituents of the environment will prove especially harsh. Both the quantity and quality of studies undertaken into the flora and fauna of Russia's northern seas are so far insufficient to yield any predictions as to what environmental consequences would follow from the offshore exploration of oil and gas fields in the region.

The high biological productivity and the diversity of species in the seas of the Arctic shelf are determined by these seas' ecological peculiarities: small depths, the various currents, the glaciers, and the instability of the environment. At the same time, this northern ecosystem is very perceptible to the effects of pollutants, while recovery of the destroyed areas would require prolonged periods of time. The penetration of oil products into the marine environment is the most dangerous of impact factors. The icy waters of the Arctic, the short winter day length, and a limited influx of oxygen all ensure a slowed natural purification in the environment. After penetrating into cracks and crevices in the ice, oil can remain there for a long time and travel, as the ice is moved by wind, away from the place of the spill. If it "drowns," it will not only poison the species that dwell on the sea bottom, but can give rise to secondary pollution if the waves lift it back to sea surface. Pollution by oil threatens to kill individual organisms as well as change their natural habitats: destroy migration routes for fish and marine mammals and make whole sea areas unfit for aquatic life. For the various communities of marine organisms living in the icy Arctic waters, a severe stress of surviving an oil spill can result in decades' worth of a recovery period. For a long time, the species composition and the food webs of such communities would differ from the original. Oil accumulated in the bottom sediment will remain a source of chronic pollution for another twenty to thirty years.

Before any projects go into their implementation phase – or before licences are issued to entitle a company to use the subsurface – the responsibility to monitor the state of the environment is borne by the state, namely, the Ministry of Natural Resources. However, at present, no system of state ecological monitoring in the Arctic is effectively in existence. The lack of data on the natural communities of Russia's northern seas and the anthropogenic impact they are sustaining precludes any objective assessments or forecasts of any ecological changes in the region.

In **Bellona's** opinion, a special Centre has to be created in the region that would have the responsibility of monitoring the state of the environment and maintaining a database on the ecological condition of the region. Most important, it has to be able to forecast the likely scenarios of emergency oil spills and keep the first-response Emergency and Rescue services duly informed of any developments in the situation that may result from the highly changeable weather conditions.

**Russia's oil and gas companies are notorious for their ineffective use of the subsurface, which manifests itself in the low coefficients of oil extraction from the deposits and of reprocessing the oil-well gas.**

At present, the operation of oil companies is focused on stepping up oil and gas recovery while curbing the costs. In Russia, the recovery ratio is on average 35 percent – compared to 45 percent in Norway, for instance, or 50 percent in Saudi Arabia and the United States. The absence of economic benefits, such as tax incentives, combined with weak legal oversight from the state leads to oil companies opting to pursue selectively the most productive fields, to a lower extraction coefficient overall and a irrevocable loss of some of the reserves. This, by extension, leads to an unjustified exploration of new deposits and, as a result, to a more severe stress on the environment.

According to the Ministry of Natural Resources of the Russian Federation, only 26 percent of the 55 billion cubic metres of petroleum gas extracted annually ends up reprocessed, while some 27 percent is burnt in gas flares. This does not only result in the loss of a valuable commodity but also increases emissions of harmful pollutants into the atmosphere. Gas flares are responsible for as much as 12 percent in emissions of solid pollutants out of the overall amount of such emissions in Russia.

The transport development strategy of the Russian Federation up to the year 2020 includes programmes that envisage building new oil terminals at ports and upgrading the existing ones, as well as expanding the pipeline transport system. At the same time, certain questions persist that concern the already explored deposits of oil and gas in Russia's European North: How large are they? Should one count on a significant rise in production volumes and is the construction of new transport systems really warranted? Will there be enough supply to fill them?

In **Bellona's** opinion, the Russian oil and gas complex must operate based on a principle of stability coupled with intelligent use and not because of promises of a short-term economic gain. Namely, the transport capacities in existence – pipelines and terminals – must only be expanded with confidence in the fact-proven availability of the necessary resources to keep them loaded. Furthermore, new technologies must be introduced and higher ecological standards upheld when operating the existing oil and gas fields, in order to enhance the efficiency of extraction and ensure a rational application of the oil-well gas.

Additionally, in view of the necessity to improve the use of the subsurface and slow down global climate change, **Bellona** suggests that CO<sub>2</sub> disposal technologies be introduced that imply pumping carbon dioxide into oil wells. Burying carbon dioxide – a greenhouse gas that is generated and emitted into the atmosphere when burning mineral fuels – in geological underground formations solves several problems at a time. For one, this process helps reduce atmospheric pollution, which benefits the efforts to achieve goals agreed in the Kyoto Protocol; secondly, it provides economic motivation as pumping carbon dioxide into oil wells can bolster supply.

**Russia's obsolete and technologically imperfect equipment makes its hydrocarbon transport system extremely prone to accidents, which heightens significantly the associated environmental risks.**

As a result of an intensified burden carried by Russia's main pipelines, the better part of the infrastructure is severely overworn and requires major reconstruction, which is evident from the recent increases in the number of pipeline accidents. When new pipelines are designed, no regulations are applied to establish their operational lifespans. That enables operating companies to use oil pipelines indefinitely and resort to minimal upgrades only. Furthermore, main pipelines are among those rare engineering structures that are not subjected to real-life operational load simulations under industrial tests, which aggravates the risk of accidents they will sustain, especially during the first years of operation.

In tanker deliveries, the high environmental hazards of hydrocarbon transport are the result of the deplorable state of the tankers and the absence of an efficient regulatory system or control over their operation. There has been a significant increase in the number of single-hull tankers operated in Russia, which – since they have been phased out on international routes – are used on Russian inland waterways, exacerbating considerably the risk of oil spills. There exists at present no distinct system to apply when

determining routes for tankers carrying oil products. Their routes are chosen based on available water depths and natural climatic conditions, i.e. weather patterns. These factors all contribute to a more substantial risk of water pollution in the regions open to oil transport traffic.

**Bellona** believes that fixed hydrocarbon transport routes must be determined and enforced for universal use by tankers operated in the Arctic seas. These routes have to be established at a considerable distance from the shore so as to prevent the negative impact of an accident on the shoreline territories – the most invaluable and most susceptible to harm from the point of view of biodiversity, as these are areas of fish spawning and bird nesting. Keeping oil tanker traffic away from the shore will help avoid the immediate pollution of the shoreline with oil and oil products if an accident takes place and ensure the advantage of a head start for first-response services when they arrive to tackle the spill.

An improved monitoring system and a reinforced control over the technical condition of the pipelines are also required.

**The anticipated boost in oil transport operations will inevitably outpace the development of regional oil-spill first-response networks.**

Today, the system of response to oil transport accidents is represented by vessels and equipment that are morally and physically aged, personnel and technological emergency resources that are deployed too far away, means of shoreline territory protection and clean-up that are in short supply, and up-to-date equipment to detect, control and prognosticate emergency oil spills that is simply missing.

First response services that are created to handle an emergency oil spill do not, as a rule, have sufficient technological equipment and lack funding, which leads to a low quality of works undertaken when containing and cleaning up spills. Furthermore, the specialised marine inspection units that used to have the responsibility of protecting the marine environment, have been disbanded, and their functions relegated to the Russian Navy, which has never demonstrated a particular concern for the environment in any of its activities.

**Bellona** believes that the Russian government and oil and gas companies must introduce better planning into the work aimed at preventing and responding to emergency oil spills or gas leaks in hydrocarbon production and transport on the Arctic shelf.

The country's strategy of protecting the environment from oil pollution must be prioritised toward measures of prevention against spills of oil and oil products. A comprehensive database needs to be created that will collect information on oil tankers and gas carriers operating in the seas of the Arctic shelf. This will help build an efficient alert and response system to ensure timely emergency actions during an accident. The option of towing a vessel immediately if its engines shut down has to be provided everywhere along the established tanker transport routes.

**The legislative system responsible for regulating the use of the subsurface and ecological safety on the Arctic shelf is in want of improvement.**

The framework of norms comprising the regulatory system is inconsistent, cumbersome and insufficient at the same time. This precludes establishing an efficient legal control over the activities of oil and gas companies and allows them to avoid being held liable for environmental violations.

**Bellona** holds it necessary to restore the functions of a specially mandated – self-reliant and independent from any agency that engages in the use of natural resources – federal governmental body that would dedicate itself to protecting the environment.

At present, certain measures are being taken to improve the legislative system in order to facilitate procedures involved in the exploration of shelf deposits. In our view, however, they are inadequate. Reforming the system is done predominantly where it concerns the economic aspects of the industry's operations. Meanwhile, those legislative norms that regulate the state and oil and gas companies' activities aimed at protecting the environment – as well as establish the scope of the industry's environmental responsibility – are either oversimplified or altogether abolished. There is an obvious shortage of regulatory acts that are needed to control the system of hydrocarbon cargo transport.

The emergency first-response action plans drawn up to cope with oil spills and developed each for a particular oil and gas project are only a display of a perfunctory effort to conform to the legislative wording, and the requirements they contain are often physically impossible to follow.

**Bellona** believes that the multi-level oil-spill emergency action plans need to be improved and adjusted to correspond to the actual conditions existing in each region. Further upgrades on these plans have to be done on a regular basis to satisfy the changing conditions of production and transport of oil and oil products.

The jurisdiction of international agreements that prescribe using only double-hull tankers during the transport of hydrocarbon cargoes by sea does not apply to the activities of transport companies in Russia, where single-hull and obsolete vessels continue to be in operation.

**Bellona** deems it critical to stop the emerging tendency to modify the Russian legislation toward enforcing laxer environmental regulations and limiting opportunities for the public to exercise control over the operations of oil and gas companies. Russia must also ratify the 1990 International Convention on Oil Pollution Preparedness, Response and Cooperation, developed by the International Maritime Organization, and the 1991 Espoo Convention on Environmental Impact Assessment in a Transboundary Context.

**The public is becoming more restricted in its right to take part in evaluating the environmental impact risks of oil and gas projects.**

The public's right to participate in environmentally critical decision-making is provided for by the legislation of the Russian Federation, and, first and foremost, by the Constitution of the Russian Federation. However, Russia today is consistently – and in defiance of the legislation in force – pushing the limits of exceptions reserved for the so-called confidential and even secret information, including environmentally significant data. Oil and gas companies are using any means available to evade pursuing policies of ecological concern and transparency. Norms and regulative acts are being repealed that allowed the public to influence the state and its oil and gas industry's ecological policies. On November 22, 2006, the State Duma passed a number of amendments to the City Planning Code of the Russian Federation that abolished the procedure of environmental impact studies for construction projects. Under the pretext of “removing administrative barriers and creating the premises for the growth of urban development,” this law effectively annihilates the ecological risk assessment procedure as such for any construction sites, including nuclear power plants, metal works and oil pipelines. As the state ecological risk evaluation has become obsolete, so has the need in any other methods of ensuring environmental safety of a project. Public ecological evaluations have lost their legal standing, too, and as for public hearings to discuss new projects, those have been completely disposed of as well.

It is **Bellona's** belief that at every stage of planning and implementation, oil and gas companies must inform the public and all interested parties of their project's development and carry out public hearings on the project. This will ensure that the public has the ability to influence the activities of a company and can prevent the realisation of a socially, economically, or ecologically questionable project. The industry and relevant governmental authorities must guarantee that the public will have open and readily available reports on the results of an environmental impact assessment of a company's operation, data received from environmental monitoring, plans of first-response actions during emergency oil spills and any other ecologically significant information.