BARENTS EURO-ARCTIC COUNCIL
WORKING GROUP ON ENVIRONMENT
Norwegian Chairmanship 2016-2017

Meeting on Exclusion of the Environmental Hot Spots of the Murmansk Region from the Barents List
3 March 2017
Murmansk, Russia
Venue: Azimut Hotel

Minutes
1. **Introduction**

Igor Konyukhov opened the meeting and gave the floor to **Elena Kochkurkina**, who welcomed the participants on behalf of the Ministry of Natural Resources and Environment of the Murmansk region. The Minister Elvira Makarova wasn't able to attend the meeting due to tough schedule.

The BEAC WGE Chair **Ingrid Lillehagen** continued the opening session expressing gratitude to the hosts of the meeting for organizing it. She underlined that solving environmental hot spots is among the priorities of the Norwegian Chairmanship for 2016-2017 and a long-standing priority of the Barents Euro-Arctic Council. Seven hot spots have been excluded from the list since 2003; one of them was from the Murmansk region. Norway pay special attention to the nickel producing plants in Nikel and Zapolyarny, situated in the border area; pollution from these plants have been on the top of the political agenda in the Barents context since the late 1980-ies.

Co-Chair of the WGE Subgroup on Hot Spots Exclusion **Hanne Aronsen** added that the aim of the meeting is to get updated information from the hot spot owners and to inform about the hot spots exclusion procedure. Similar meetings were arranged in Komi, Karelia and Arkhangelsk region within the Russian Chairmanship of the WGE. The other co-Chair of the Subgroup, Maria Dronova from the Russian Ministry of Natural Resources and Environment, couldn't participate in the event, but asked Vladimir Chizhov to speak on her behalf.

2. **Hot Spots Exclusion Procedure** by Åke Mikaelsson, **and New BAT legislation in Russia** by Ruslan Butovsky

Åke Mikaelsson informed about the steps of the exclusion procedure adopted by the SHE-group. It was decided that the presentation would be translated into Russian and sent to the Murmansk Ministry of Natural Resources for further distribution among the hot spots owners.

Ruslan Butovsky presented the new Russian BAT legislation (Federal Law #219 on Amendments to the FL on Environmental Protection), which entered into force on 1 January 2015. The law foresees a phased transition to a new system of state regulation of environmentally hazardous industries. In 2015-18, relevant sub laws and 51 BREFs on BAT will be developed in adopted; in 2019-22 complex environmental permits will be granted to 300 pilot enterprisers, as well as opening factories; and starting from 2025 all

big enterprisers will switch to the new system of permit granting. In 2015, criteria for defining enterprisers and other objects that have a negative impact on the environment to as objects of four different categories. Enterprisers of the first category (representing fuel and energy complex, chemical industry, mining and metallurgy, communal service, cement and glass production, as well as various food industries) will be included into the 300 pilot ones.

3. **M1 "Pechenganickel" combined smelter, Nickel, Zapolyarny, and M2 "Severonickel" combined smelter, Monchegorsk** by Alexander Tyukin

Alexander Tyukin talked about the progress achieved by the Kola GMK on both hot spots. In Zapolyarny burning of the nickel ore concentrate was substitute by briquetting. Emissions of SO2 to the air have reduced from 40.000 to 5.000 tons per year. Based on the progress achieved, the plant in Zapolyarny can be excluded from the hot spots list. Smelter in Nikel has also been switched from burning pellets to briquettes. A number of technological measures have increased the percentage of sulfate utilization in sulfuric acid. Emissions to air do not exceed the established limits. One of the kilns has been sealed. The other one is under reconstruction now; and the goal is to reduce the supply of sulfate to the smelting shop.

Olaug Bjertnæs asked to provide the group with the figures of total emissions of SO2 in Nikel and Zapolyarny and measures taken to reduce them. Mr. Tyukin said that SO2 emissions in Nikel were reduced from more than 200.000 tons in 1997 to about 75.000 tons in 2016. In the period from 1995 to 2016, emissions of heavy metals in Nikel and Zapolyarny were reduced from 10.000 tons per year to 5.500 tones; emissions of nickel - from 300 tons per year in 1990 to 100 tons in 2016. In order to achieve these improvements, the company had installed aspiration shelters and convectors equipped with puffers.

Ingrid Lillehagen wondered whether there were plans to close down the Nikel smelter shop in 2019, and Mr. Tyukin replied that the company would consider this issue very carefully, and probably would follow the plan on modernization of the factory.

Answering to the question raised by Ruslan Butovsky about updating of the Screening and Analysis report, Mr. Tyukin said that ongoing monitoring was carried out by the company to collect necessary data, but in order to follow the exclusion procedure, the hot spot should be divided into two - Nikel and Zapolyarny - and considered separately. Ingrid Lillehagen added that cross-border issues should be taken into consideration, as the production has a negative impact not only on the Russian, but also on the Norwegian environment and health of the population.

Ingrid Lillehagen asked if BREF on nickel had already been developed in Russia and if Kola GMK was preparing for introduction of the new legislation. Mr. Butovsky said that the BREF had been adopted in 2015 (it is available in Russian), and that BAT-regulations could be used as hot spots exclusion criteria whenever possible. BAT-Bureau is planning to arrange a role-play on mining and metallurgical industry on the basis of Kola GMK, which could be interesting to attend. Mr. Mikaelsson mentioned that the role-play could be used for development of HS exclusion criteria; and Mr. Tyukin added that Kola GMK had started to implement European BAT regulations in different processes, such as nickel ore enrichment and cinder production.

Monchegorsk plant (M2) is in the process of modernization. Each investment project, being implemented on the plant, has environmental component. In 1997, emissions of SO2 were up to 140.000

tons; after the smelter shop in Monchegorsk was closed down, emissions were reduced to 37.000 tons per year, and do not exceed the established standards. Monitoring of the sanitary buffer zone shows that the factory has no major negative impact on the environment. Therefore, the Monchegorsk plant is proposed for the exclusion from the hot spots list. Concerning discharges into the water bodies, the company has constructed a site for the utilization of salts and produces tons of commercial salts yearly. The company is carrying out several investment projects, such as a project on isolation of nickel concentrate. Kola GMK is the only factory in Russia that produces electrolyte cobalt. An issue of copper processing is under consideration. After new technologies have been introduced at the smelter, environment in the Monchegorsk area, which had suffered a lot from pollution in the previous years, started to restore.

Olaug Bjertnæs mentioned that according to the published emission monitoring data, SO2 emissions in Nikel and Zapoliarny exceeded the established limits in certain periods of 2016, and asked if Kola GMK could clarify it. Mr. Tyukin explained that such exceeding is, as a rule, a result of bad meteorological conditions in the area, when lack of wind creates higher concentration of SO2 in the air. It is not possible to stop the work of the smelter in such occasions, but Kola GMK react on the situation and coordinate their settlement plans with the regional Ministry of Natural Resources. Igor Konyukhov added that some of the issues are regularly discussed by the bilateral commissions. Åke Mikaelsson suggested that M1 could be considered divided into two hot spots, Nikel and Zapolyarny, and considered separately.

4. **M3 Apatit JSC of FosAgro Group, Kirovsk** by Anton Tyurtanov (Reason for inclusion to the Barents HS list: industrial emissions to air, wastewater discharge)

FosAgro Group is one of the world's largest producer of phosphoric fertilizers. The fertilizers are produced out of high-grade phosphate ore – apatite concentrate. Apatit JSC is developing six deposits in the Khibiny area; the ore is extracted from three mines and is processed at two apatite-nepheline beneficiation plants #2 and #3. Fertilizers of the company preserve arable soil. With the use of fertilizers, organic food is produced. In 2016, FosAgro Group singed and agreement with the Russian Ministry of Natural Resources and Rosprirodnadzor to start building new wastewater treatment plants, upgrading technical facilities and processing wastes of apatite concentrate within the Year of Ecology in Russia.

In 2013-2016, Apatit JSC implemented a project on modernization of fuel and energy complex: four boiling houses were closed down, and others switched from fuel oil to natural gas, coal and electricity. Apatite-nepheline beneficiation plant #3 has also been modernized within the frames of an ambitious investment project (9,4 billion rub) in accordance with the BAT requirements. The project was implemented under the supervision of the Kola Research Centre of the Russian Academy of Science. New methods of dust suppression have been introduced, which enabled to reduce significally dust emissions. SO2 emission to air have reduced from 6971 tons per year in 2006 to 2087 tons in 2016; emissions of CO reduced from 1830 tons to 788 tons accordingly. A comprehensive assessment of atmospheric air, made by the Federal Centre of Hygiene and Epidemiology of the Murmansk region in the towns of Apatity and Kirovsk in 2015, showed a low level of pollution.

In 2015, the company started development of the project on innovative methods of wastewater treatment (including reagent purification) in cooperation with the Mining University of St. Petersburg. New wastewater treatment facilities were installed at the joint Kirovsk mine; the sump of mine waters is being cleaned with the use of geotextile containers now. As a result of the taken measures, total discharges of specific contaminants (phosphates, nitrites, fluorine and suspended substances) to water

(the rivers Belaya, Zhemcuzhnaya and Vuonnemyok and the lake Bolshoy Vudyarv) reduced by 51% from 2015 to 2017. In addition, Apatit JSC has launched a pilot project on restoring of Atlantic salmon population. Based on the presented data on dust emissions and wastewater discharge, Apatit JSC propose to exclude the company from the hot spots list.

Igor Konuykhov thanked Mr. Tyurtanov for the presentation and asked the SHE-group to discuss possible exclusion of the hot spot. Åke Mikaelsson acknowledged that Apatit JSC have made major improvements, but noted that no decision on exclusion from the Barents list could be taken at the meeting. The hot spot owner has to update Screening and Analyses report and based on document SHE-group will consider if the hot spot could be excluded by the fast track. Mr. Konyuhkov asked to develop and adopt a plan for coordination of further work with the hot spots of the Murmansk region.

5. **M5 Kovdorskiy GOK, Kovdor** by Mikhail Maryutkin (Reason for inclusion to the Barents HS list: wastewater discharge)

Kovdorskiy GOK JSC is an integrated mining and processing facility, the second biggest producer of apatite concentrate in Russia and the only producer of baddeleyite concentrate in the world. By 2014, Kovdorskiy GOK have been using four units for wastewater discharge: discharge of drainage quarry waters of dewatering wells to the Verhnyaa Kovdora River (units #1 and #2); sewage from the quarry basin into Lake Kovdor (unit #3) and sewage from the secondary settling tank of the tailing dump to the Mosel River (unit #6).

To reduce the volume of water consumption and wastewater discharge, a number of environmental measures were implemented. A pumping station for the use of quarry water in the circulating water supply scheme of the beneficiation complex was constructed and put into operation in October 2015. As a result, permanent discharge of sewage into Lake Kovdor was terminated; at present, the discharge is carried out only during the period of preventive maintenance of the plant for 2-5 days per quarter. Introduction of the recycling water supply system for drainage water in the Eastern range of water drainage of a quarry for the production needs of the combined heat and power plant and the enrichment complex allowed stopping the use of clean water from Kovdor Lake. In March 2016, pumps were stopped at the dewatering wells of the Western series and the discharge unit #1 is completely out of use at present. By 1 January 2017, wastewater discharge units #2 and #6 are operational; the volume of discharged sewage was reduced from 35.981 to 25.473 thousand cubic meters (data from 2016 as compared to 2014), no clean water from Kovdor Lake is used for industrial purposes.

Åke Mikaelsson thanked Mr. Maryutkin for the update and noted that M5 is a good example of the progress achieved by a hot spot owner, and information about their results should be dissimilated among hot spots owners and other stakeholders.

6. **M6 Water Quality in the Kola River and Bolshoe Lake** by Andrey Vinogradchy (Reason for inclusion to the Barents HS list: more than 6% of drinking water samples in Murmansk do not meet microbiological standards, and 75% - chemical standards)

Murmansk is supplied with water from three sources: the Kola and Tuloma rivers and Bolshoe Lake. Lake Bolshoe used to be polluted by the wastewater discharged from the Murmansk city waste incineration plant; and the Kola River was affected by the Olenegorsk city wastewater treatment plant and agricultural facilities located in the vicinity of the river banks. Murmanskvodokanal, being the hot spot's owner, did not have any instruments to influence those companies. At present, the incineration plant is

not operating full time, reducing amounts of discharged wastewater; the poultry farms that discharged wastewater to the Kola River, have been closed, and the manure collector has passed under the jurisdiction of the Kola settlement administration, which is dealing with the environmental impacts on the water quality. According to Murmansk Vodokanal checks, the water quality in the Kola River meets sanitary standards by the microbiological and chemical indicators, being characterized by low turbidity, low chromaticity and low hardness, and these characteristics do not depend on the season. In addition, several wastewater treatment plants in the settlements along the Kola River are under development. Some of the existing facilities will be reconstructed in 2018. In 2015, within the frames of the regional investment Programme on Water Supply, which envisaged upgrade of the existing equipment, water intake at Bolshoe Lake was modernized, improving significally quality of the drinking water. New purifying measures were also introduced.

Olaug Bjertnæs asked to clarify the situation with the Bolshoe Lake and Murmansk incineration plant. Mr. Vinogradchy replied that according with the program on water supply of Murmansk until 2017, the Bolshoe Lake has to be withdrawn from the water supply sources of the city. The plan cannot be fully fulfilled, as the lake is closed by a platinum, meaning that is does not have a runoff; therefore, water has to be taken to prevent flooding. Åke Mikaelsson agreed that Vodokanal should not be a hot spot owner, and noted the Murmansk incineration plant could be considered by NEFCO as a partner for possible projects. Major improvements have been made, and the hot spot should be discussed further.

7. **Activities of Rosprirodnadzor Department of the Murmansk Region** by Valery Yakush

Valery Yakush made an overview of Rosprirodnadzor activities in relation to the hot spots of the region. He mentioned that no comments were received from the Nordic experts at the Ministerial meeting in Sortavala in 2015. To start with, Rosprirodnadzor carried out regular checks of the Kola GMK in 2010 and 2014, and the results showed that the company had been working within the established sanitary standards. The idea of dividing M1 in two - Zapolyarny and Nikel - would be supported by Rosprirodnadzor. The plant in Zapolyarny can be excluded from the list, not considering the boiling house. The last check in Nikel revealed 20 violations of the established standards, which resulted in fines and administrative instructions to eliminate them. In 2014-2015, there were cases of emissions to air that exceeded the established standards, caused by the switch from burning pellets to briquettes. Those cases were followed by extra checks, necessary administrative procedures and fines. Meteorological conditions in the North can cause higher concentration of SO2 in the air, even though Hydrometeorology centre of the Murmansk region provides the company with the forecast enabling to reduce the power in the operating kilns. In Monchegorsk, concentration of SO2 emissions exceeded the standards only once during 2016, therefore, Rosprirodnadzor is in favour of recommending plants in Monchegorsk and Zapolyarny from the hot spot list and will prepare required statements based on the updated of Screening and Analyses reports.

Rosprirodnadzor last checked Apatit JSC in April-May 2016, revealing 15 violations regarding emissions to air; the company has eliminated 14 of them, and the last one is still on the agenda. Wastewater discharge to the Zhemzhuzhnaya River does not meet the standards, therefore, the issue of possible exclusion should be considered very carefully. Kovdorsky GOK JSC have made a significant progress, but there are still some violations, e.g. at the wastewater discharge unit #1. Murmansk Vodokanal discharge insufficiently treated wastewater into the Kola Bay, and the facilities need additional upgrade. Murmansk city incineration plant is also under regular control of the Rosprirodnadzor. In 2016, the plant

worked 4,5 months altogether, as the city companies do not provide the plant with enough waste due to the worsened economic situation (it's more affordable to submit the waste to the landfill). Despite this fact, dioxins emissions in 2016 exceeded 300 tons.

8. **M9 Sunken and abandoned ships in the Kola Bay; M6 Water Quality in the Kola River and Bolshoe Lake and M10 Oil containing waste management** by Igor Konyukhov

Igor Konyukhov reported about the situation with M9. The project on elimination of sunken ship dumps in the Kola Bay got federal support with the total budget of 50 million rub, and in 2015, an agreement between the Russian Federal Ministry of Nature Protection, Ministry of the Murmansk region and VNII "Ecology" was signed. The first part of the project is to clean the Northwestern bank of the Kola Bay in the area of Retinskoe settlement, which started in April 2016; it is planned to start practical implementation in May 2017. The second part is to develop a programme for further activities in the water area of the bay, including comprehensive examination of the territory, making an inventory of the sunken and abandoned ships, elaboration of the action plan and applying for funding. Based on the fieldwork that was carried out in summer and autumn of 2016; the detailed action plan has been developed. It is estimated, that lifting on one ship (including the preparatory work) will take up to one year; the budget may vary from 9.4 million to 115 million rub.

In addition, Mr. Konyukhov mentioned M6, Water Quality in the Kola River and Bolshoe Lake, another hot spot where the owner had not been defined. As underlined earlier by Mr. Vinogradchy, the manure collector had passed under the jurisdiction of the Kola settlement administration, which will take necessary measures to secure environmental safety of the object. M10, Oil containing waste management, also requires more attention, as there is no common approach to solving the hot spot; although some of the enterprisers are processing oil sludge.

Åke Mikaelsson thanked for the report and said that M9 would not be excluded by the fast track; but as the action plan is already in place, and it would be easier to follow the full exclusion procedure. A possibility to apply for funding for each vessel separately should make the process smoother.

Henrik Forsström wondered whether the Environmental Harmony Fund that was involved in the work on the Kola Bay several years ago still existed, and if the ships Liberty and Teriberka, which caused problems for the navigation, had been removed from the bay. NEFCO allocated 140.000 Euro for activities on M9; the funding can be used by the regional administration. NEFCO projects on Franz Josef Land (including a pilot on inventory of the hazardous substances on the island and funding to eliminate of pollutants such as PCB and POPs) and an Icelandic project in Tiksi (Sakha Republic) could be used as a model for cooperation on M9. Mr. Konuykhov agreed that coordination of activities would be needed, but mentioned that the project is being implemented by the federal authorities, thus, the regional Ministry of Natural Resources has limited possibilities to be fully involved. Environmental Harmony Fund has nothing to do with the on-going project; Teriberka ship (1st class of danger) is still in the Kola Bay.

Referring to the situation with M10, Valery Yakush (Rosprirodnadzor) added that there are two-three organizations in the Murmansk region that operate with the oil-containing waste, it should be analyzed if the hot spot could be excluded from the list. Mr. Mikaelsson said that there was not enough information on the status of M10, and criteria of defining the hot spots were not always clear; it should be carefully considered in close cooperation with the regional authorities.

9. **NEFCO. Funding of the environmental activities of the hot spots** by Henrik G Forsström

Henrik G Forsström presented to the hot spots owners possibilities to get support for their environmental initiatives. NEFCO current project portfolio includes more than 150 projects in Russia on energy efficiency, renewable energy, sewage treatment, waste management and cleaner production. Investment Fund, Cleaner Production Facility, Barents Hot Spots Facility (BHSF), Arctic Council Project Support Instrument (PSI) are among the funding instruments, established within NEFCO to provide loans, grants and project support. BHSF is specifically targeted at solving hot spots by giving grants for pre-feasibility and feasibility studies, business and financing plans.

NEFCO recent initiatives are the project on water and wastewater treatment in Petrozavodsk (K4), waste solutions in Kenozero National Park of the Arkhangelsk region, waste landfill in the Komi Republic. NEFCO continues working on some of the initiatives started by NDEP, EBRD and NIB, which have put their activities on hold because of the sanctions.

Programme for Environmental and Climate Cooperation between the Nordic countries and Northwest Russia, funded by the NCM and BHSF, will be launched soon by NEFCO; non-commercial entities (including regional and municipal authorities, educational and research institutions etc.) are invited to participate in the first call for proposals.

To support hot spots activities, NEFCO is planning to establish a pool of experts – specialists in BAT, cleaner production, climate planning and other relevant issues.

10. **Conclusions**

Concluding the meeting, **Hanne Aronsen** thanked the hot spots owners and representatives of the authorities for the encouraging presentations and reports and significant progress they had made. She noted that decision on excluding of the hot spots are made by the BEAC Working Group on Environment, and then by the ministers of the environment of the Barents Region (their next meeting will be arranged in November 2017). The decision is made based on the following documents:

- Screening and Analyses report, which has to be up-to-date: the earlier the report is submitted to the SHE-group by a hot spot owner, the more chances the hot spot will be considered for exclusion; if data on emissions can be compared with the BAT standards, it will be easier for the Nordic experts to assess the report;
- Application for Exclusion;
- Statement from Rosprirodnadzor;
- Technical Expert Committee (TEC) Review.

If required, meetings between the hot spots owners and regional authorities could be arranged to decide whether a hot spot should follow short-track or long-track exclusion procedure.
Igor Konyukhov suggested that an action plan for further work with the Murmansk region's hot spots should be developed. Åke Mikaelsson added that the deadline for submission of the updated Screening and Analyses reports is the end of May.

LIST OF PARTICIPANTS 03.03.2017

1. Ingrid Lillehagen, WGE Chair, Ministry of Climate and Environment (NO)
2. Hanne Aronsen, Norwegian Environment Agency (NO)
3. Olaug Bjertnæs, Norwegian Environment Agency (NO)
4. Åke Mikaelsson, Swedish Environmental Protection Agency (SE)
5. Sari Pöyhönen, Consulate General of Finland in St. Petersburg, Murmansk Office (FI)
6. Kaisa Vainio, Consulate General of Finland in St. Petersburg, Murmansk Office (FI)
7. Ivan Popov, Ministry of Natural Resources and Timber Industry Complex of the Arkhangelsk Region (RU)
8. Igor Konyukhov, Ministry of Natural Resources and Environment of the Murmansk Region (RU)
9. Elena Konchurkina, Ministry of Natural Resources and Environment of the Murmansk Region (RU)
10. Valery Yakush, Rosprirodnadzor Department of the Murmansk Region (RU)
11. Andrey Vinogradchy, Murmansk Vodokanal (RU)
12. Alexander Tyukin, Kola GMK JSC (RU)
13. Vladimir Zadvorny, Kola GMK JSC (RU)
14. Evgeny Kurbatov, Kola GMK JSC (RU)
15. Mikhail Maryutkin, Kovdorsky GOK JSC (RU)
16. Anton Tyurtanov, FosAgro-Cherepovets JSC (RU)
17. Vladimir Chizhov, Pasvik Nature Reserve (RU)
18. Anatoly Glushkov, Chamber of Commerce of the Murmansk Region (RU)
19. Anastasia Ivanovskaya, Ekoservice (RU)
20. Roman Movchan, Pechenga NGO “Ecocentre” (RU)
21. Ruslan Butovsky, VNII Ecology, NEFCO Consultant
22. Henrik G Forsström, NEFCO
23. Maria Dianova, IBS