

DRAFT SAO report to Ministers 2015 – ACAP

09-02-2015

HoD under silence until COB 10-02-2015

SUMMARY

Arctic Contaminants Action Program (ACAP) has continued to implement demonstration projects to reduce releases of contaminants in the Arctic and areas impacting the Arctic in accordance with the Arctic Council Ministerial Declaration from Kiruna 2013. The Working Group focuses on reduction of black carbon and other short-lived climate forcer contaminants, mercury, obsolete pesticides and polychlorinated dioxins and furans reduction. During the Canadian Chairmanship, ACAP projects have achieved several important results. ACAP successfully completed a project on black carbon emission from wood burning stoves. The report identifies voluntary actions that could be adopted to reduce black carbon emissions from residential wood combustion. The recommended actions may benefit Arctic people through improved local air quality and climate change mitigation. ACAP also completed several activities under its project on reducing black carbon diesel emission in the Russian Federation. An inventory of diesel black carbon emissions in the Murmansk area of Russia was completed, finding that emissions from bus traffic in Murmansk was a significant source of diesel black carbon emissions. A demonstration project upgrading the fleet of a local bus company to Euro V standards was completed, resulting not only in a significant decrease in black carbon emissions, but improved reliability and comfort for bus passengers and significant cost saving to the bus company from reduced fuel and maintenance costs. The demonstration projects on destruction of hazardous waste such as PCSs and POPs in the Russian Federation have not progressed due to lack of environmentally sound destruction capacity in the Russian Federation.

REPORT

Name and Mandate of Working Group.

The objective of the Arctic Contaminants Action Program (ACAP) is to prevent adverse effects, reduce and ultimately eliminate pollution of the Arctic Environment. The mandate of the Working Group is defined through decisions of the Arctic Council Ministers. The main objectives and priorities for ACAP are documented in the “Arctic Council Action Plan to Eliminate Pollution of the Arctic” (2001) as supplemented by Work Plans approved by Ministers every two years.

Relevant Sections of the Kiruna Declaration (and possibly other declarations) and reference to SAO Report.

- Recognize that reduction of short-lived climate forcers, could slow Arctic and global climate change, and have positive effects on health, and welcome the report on short lived climate forcers, and support its recommendations including that national black carbon emission inventories for the Arctic should continue to be developed and reported as a matter of priority,
- Recognize that there are further persistent organic pollutants to be addressed that pose threats to human health and the environment in the Arctic, encourage Arctic States to continue monitoring and assessment activities and enhance their efforts to meet the objectives of the Stockholm convention, and welcome the completion of the successful demonstration project preventing the release of 7000 tons of obsolete pesticides into the Arctic environment, and look forward to further activities in this area,

Summary Report on Achievements in 2013-2015

ACAP has completed a project on *Reduction of Black Carbon Emissions from Residential Wood Combustion* (lead countries: Finland and Norway), and is implementing several other projects. ACAP has also completed several activities under its project on *Reduction of Black Carbon from Diesel Sources in the Russian Arctic* (lead countries USA and Russian Federation).

The ACAP project on *Reduction of Black Carbon Emissions from Residential Wood Combustion* is finalized and the project report has been submitted to Ministers for their consideration. The overall objective of this project is to spur action to reduce emissions of black carbon from residential wood combustion in the Arctic. The project has compiled information on wood burning stove and boiler technologies in the Arctic and analyzed existing approaches to emission inventories, reduction methodologies and mitigation instruments and measures in Canada, Denmark, Finland, Norway, Sweden and USA.

The report findings state that the full potential for reduction cannot be achieved, even with today's or tomorrow's modern stove technologies, without introducing complementary policy instruments, such as emission limits and measures to promote fuel homogeneity, regular training of the users of wood stoves, information campaigns and stove inspections.

The report identifies voluntary actions that could be adopted to reduce black carbon emissions from residential wood combustion on both the national level and pan-Arctic level. The recommended actions may benefit Arctic people through improved local air quality and climate change mitigation.

The *Reduction of Black Carbon from Diesel Sources in the Russian Arctic* completed an emissions inventory of black carbon from diesel sources in the Murmansk Region of Russia, which showed that the top two sources of black carbon from diesel sources were off-road vehicles at mines and on-road vehicles such as trucks and buses. It also completed a pilot mitigation project to upgrade the bus fleet at a Murmansk bus company which resulted in a 90 percent decrease in black carbon emissions from the fleet, as well as significant reductions in other pollutants. A brochure, available in English and Russian, describing the results from this highly successful project have been prepared. ACAP has submitted the English version to Ministers for endorsement.

The *Reduction of Black Carbon from Diesel Sources in the Russian Arctic* project is in the process of developing additional deliverables for the 2015-2017 Chairmanship cycle including: 1) guidelines for off-road vehicle upgrades at mines and identification of sites for possible demonstration projects, 2) an energy system upgrade to wind-diesel at the Tundra Cooperative Saami reindeer farm in Murmansk, 3) a feasibility study for energy supply conversion from diesel in Dolgoshcheliye, Mezenskiy District and 4) a feasibility study mapping substituting solutions for diesel power plants in Arctic and North-West Russia. Activities numbered two, three and four sought and received funding from the PSI. The diesel project also completed policy and financing recommendations for reducing black carbon emissions in Russia and the Arctic more broadly. These recommendations will be written in a report for delivery during the next Chairmanship cycle.

ACAP has also approved a project to reduce black carbon emissions through energy upgrades to off-grid Cluster settlements in Valday, Karelia (led by the U.S., Russian Federation and NEFCO). This project sought and received funding from the PSI and is expected to begin implementation in mid-2015.

The last black carbon project approved by ACAP between 2013-2015 is the *Arctic Black Carbon Case Studies and Platform* project (led by U.S.). The first phase of this project to develop an initial set of six concise case studies on black carbon reduction activities or best practices, is completed. These case studies are hosted on the ACAP website. The next phase for this project, to be completed during the U.S. Chairmanship, is to develop a searchable platform, maintained by the ACS, to house the case studies and to create a user-friendly interactive map interface for the general public to find information on black carbon activities in the Arctic. The project leads will also compile additional case studies during this time.

[ACAP anticipates that the inventory data, technical and policy findings of these black carbon projects will provide key information on how the Arctic Council “enhanced collective action” as called for in the recently negotiated *Framework for Enhanced Action on Black Carbon and Methane* (Framework) and serve as a basis for the “Summary of Progress and Recommendations” report to Ministers on arctic black carbon and methane.

ACAP further anticipate that information provided by Arctic Council members, observers and other under the Framework can be uploaded by the ACS to the ACAP Black Carbon Platform and has the potential to become a “one-stop-shop” for those looking for information on action on SFCF’s in the Arctic.]

- ACAP project on black carbon from residential wood stoves recommends actions that can reduce emissions in the Arctic and improve local air quality.
- Arctic Council ACAP project results in 90% reduction of blackcarbon emission in Murmansk bus company in just 1 year. @Murmanskavtotrans @epa

ACAP is working towards implementation of two projects to reduce mercury releases.

Reduction of mercury releases from non-ferrous metals smelters in the Russian Federation (Co-leads: the United States, Russia and NEFCO) will include cleaner production approaches as well as the application of one or more mercury reduction technologies, which also address mercury waste. The project will result in mitigation and management of mercury releases (to air, water and waste) at a Russian smelter, which will serve as a demonstration for others in Russia and elsewhere. The *Mercury Emissions Reduction Technology Workshop* (Co-leads: The United States and Russia) will assist the Russian Federation in determining options for implementing emissions control provisions of the Minamata Convention, complementing the Russian Federation’s work to develop an improved emissions inventory and an Action Plan for implementation of the Minamata Convention.

- Arctic Council ACAP mercury projects helping to implement the Minamata Convention in the Russian Federation. @UNEP @GEF

ACAP has conducted preparatory activities for a *pilot action project to address dioxin emissions at the Vorkutinskiy Cement Plant* in the Komi Republic, funded by the Swedish EPA and NEFCO. A sampling and analysis in 2014, mapped emissions of dioxins and furans as well as dust, black carbon and heavy metals from the facility. A feasibility study identified relevant emission reduction actions and drafted an Action Plan. A seminar on “Environmental

Commented [PB1]: Propose to leave the square brackets for now, until the path forward on the TFBCM Framework is clearer. This will be discussed at the SAO/Whitehorse.

requirements on the use of waste as alternative fuel in the cement industry” was held in Syktyvkar, linking the need for waste destruction on the one hand and the interest of the plant owner to use waste as alternative fuel on the other. The outcomes of the seminar included further capacity building on dioxin and waste combustion issues in the Russian Arctic, as well as promoting the implementation of the Stockholm Convention on Persistent Organic Pollutants

- Arctic Council ACAP dioxin/furans project: Reducing risks for hormone related diseases in humans and biota in Vorkuta and other parts of the Russian Arctic.

ACAP is developing a project proposal on implementing a *Rapid Environmental Assessment* of three obsolete pesticides contaminated sites in Arkhangelsk, Komi Republic and Krasnoyarsk Krai. The project will, if approved by ACAP, demonstrate a cost-effective and rapid technique to screen levels and scope of contamination at old pesticide storage sites using a methodology that the Blacksmith Institute developed for the UN Food and Agriculture Organization (FAO). The method can help to assess the environmental and health risks caused by hundreds of old pesticides storages in Northern Russia. The project closely follows on Russian implementation of Stockholm Convention on POPs.

ACAP began development of three projects for implementation through its Indigenous Peoples Contaminant Action Program. An initiative by AIA will focus on assessing and developing tools for black carbon reduction in indigenous communities, a Russia-RAIPON project aimed at organizing an information exchange conference on best practices on contaminant reduction in indigenous communities in 2016, and a US led project expanding an existing monitoring tool, the Local Environmental Observer (LEO) network, that links traditional ecological knowledge (TK) and western science across the Arctic to create a Circumpolar Local Environmental Observer (CLEO) network.

- ACAP and Indigenous Peoples’ organizations work together to reduce exposure to contaminants at the community level in the Arctic.

ACAP has continued to seek possibilities to implement two demonstration projects on Persistent Organic Pollutants (POPs): emptying and cleaning of PCB containing transformers/equipment, and destruction of the extracted PCB in Russia. The project closely follows on Russian implementation of Stockholm Convention on POPs. The project Management of PCBs and other Hazardous Waste in the Russian Federation, received an Expression of Interest from the PSI.

ACAP Working Group Plan 2015-2017

Summary of Work Plans

ACAP addresses Arctic pollution sources and acts as a strengthening and supporting mechanism to encourage national actions to reduce emissions and other releases of pollutants that are relevant in the Arctic. Cooperative actions make an important and significant contribution to the overall international effort to reduce environmental damage on a global level. ACAP will develop concrete project proposals within this mandate for approval as Arctic Council projects, taking into account the needs of indigenous populations in the Arctic. The projects identified in this work plan consist of both projects that have already been approved by the ACAP Working Group and projects that are under development for future ACAP review and possible approval. Additional project proposals may be developed within the scope of this work plan between 2015 and 2017. Implementation of the projects is subject to availability of funds. ACAP advances approved projects and funding, including, as appropriate, from the Arctic Council Project Support Instrument (PSI) and other funding sources.

Arctic Council Chair Priorities 2015-2017

Addressing the Impacts of Climate Change and Further Work on SLCFs

Black Carbon Mitigation and Sector Based Activities

Transport and Diesel Generator Sectors

Murmansk Diesel Black Carbon Project focusses primarily on the transport sector. In the first phase, the project completed an Emissions Inventory of black carbon from diesel sources in the Murmansk Region of Russia and a pilot mitigation projects of a Murmansk bus company energy efficient fleet upgrade. In the second phase the project aims to assess primary sources of black carbon in the Russian Arctic, develop a targeted baseline emission inventory for black carbon from diesel sources in key areas, implement targeted, on-the-ground demonstration projects for reducing black carbon from diesel, and establish policy recommendations and financing options for reducing black carbon diesel sources.

By 2017, the project will 1) publish the black carbon inventory, 2) develop guidelines for off-road vehicle upgrades at mines and potentially identify and implement a pilot project at an open pit mine in Murmansk 3) complete an energy system upgrade to wind-diesel at the Tundra Cooperative Saami reindeer farm in Murmansk, 4) complete a feasibility study for energy supply conversion from diesel in Dolgoshcheliye, Mezenskiy District and 5) complete a feasibility study mapping substituting solutions for diesel power plants in Arctic and North-West Russia. The project will also complete a report with policy and financing recommendations for Russia and the Arctic more broadly.

Co-Leads: USA, Russian Federation, NEFCO

Timeline: 2011-2017

Budget: 2.5 million USD

PSI Funding:

- *Wind-diesel project at Tundra Collective* – PSI commitment up to 95 000 EUR
- *Feasibility Project on energy supply conversion from diesel in Dolgoshcheliye, Mezenskiy District* - PSI commitment up to 70 000 EUR
- *Feasibility Study on mapping substituting solutions for diesel power plants in Arctic and North-West Russia* - PSI commitment up to 30 000 EUR

- Arctic Council ACAP work in Saami settlement will reduce blackcarbon emissions and human health risk in indigenous communities during @USChairmanship. @epa @CCAC

The Valday Project seeks to reduce diesel black carbon emissions through implementing a range of alternatives, including use of renewable fuel, for providing energy upgrades to off-grid Cluster settlements in Valday, Karelia. This ACAP project received funding from the PSI (EUR 1.12 million) and began implementation in late 2014.

Co-Leads: USA, Russian Federation, NEFCO

Timeline: 2014-2017

Budget: 4.2 million EUR, PSI commitment of up to 1.2 million EUR

Arctic-Barents Region Short-lived Climate Pollutants Mitigation Project(s)

NEFCO is working on the development of three SLCP initiatives with a number of respective sub-projects in reduction of methane emissions (including flaring) reduction of Black Carbon Emissions, and mitigation of HFC (including ODS) Emissions (End-of-Life Equipment). Some of the sub-projects are also on the NEFCO-AMAP Barents Hotspot list, (as Project Kr 14 & Kr16). ACAP approval will be needed.

Co-leads: TBD

Budget: Unknown

Black Carbon Inventories

Through the **Establishment of the System for Impact Management of Black Carbon Emissions from sources located in the Russian Arctic** project, Russia developed components of a national Black Carbon Emissions Inventory, assessing the impact of black carbon emissions on the Arctic, developing recommendations on black carbon emissions reductions and establishing the regulatory and policy framework for effective application and follow-up. ACAP approval needed.

Co-Leads: Russia

Timeline: 2015-2017

Budget: Unknown

- ACAP cooperates with Russian Federation in developing their first national blackcarbon inventory. @LRTAP

Black Carbon Communications and Outreach Activities

Arctic Case Studies Platform

The first phase of this project to develop an initial set of six concise case studies on black carbon reduction activities or best practices was completed during the Canadian Chairmanship. The next phase is to develop a searchable web-based platform that can be easily maintained by the ACS, to house the case studies and to create a user-friendly interactive map for the general public to find information on black carbon activities in the Arctic. The project leads will also compile additional case studies during this time. Information provided by Arctic Council members, observers and others under the proposed Arctic Council Framework for Enhanced Action on Black Carbon and Methane could be uploaded by the ACS in to the ACAP Black Carbon Platform and has the potential to become a "one-stop shop" for those looking for information on action on SLCFs in the Arctic.

Co-leads: USA

Timeline: 2015-2017

Budget: less than 250k USD

- Share your experience! Upload info on your efforts to reduce blackcarbon on the ACS Platform (insert tiny URL)

Improving Economic and Living Conditions in Indigenous Communities

Indigenous Community Based Black Carbon Assessment Tools

AIA is co-leading a project that will focus on assessing and developing community-level tools for black carbon reduction in indigenous communities, to mitigate health and environmental effects from black carbon sources. The project is expected to take place in Alaskan, Russian and Sami communities. [Proposal received, ACAP approval is required.]

Co-Leads: AIA, other TBD

Timeline: 2015-2017

Budget: estimated at 750k -1 million USD

- AIA and co-leads are working on a project to developing community-level actions to mitigate and assess releases and exposure to black carbon.

The Circumpolar Local Environmental Observers (CLEO) Network

Recognizing the need for better approaches on the use of traditional knowledge (TK), ACAP is proposing, through its Indigenous Peoples Contaminants Action Program (IPCAP) to expand the coverage of an existing monitoring tool, the Local Environmental Observer (LEO) network that links traditional knowledge (TK) and western science, across the Arctic to create a Circumpolar Local Environmental Observer (CLEO) network. This tool can help indigenous arctic communities to identify and prioritize their environmental needs, by collecting critical observational data. ACAP hopes to obtain better information on sources of contaminants that may be impacting indigenous arctic communities as well as data on changes in the local environment which may result in releasing contaminants in storage or frozen in the environment. During Phase I of the project, ACAP will create a North America chapter of the CLEO, including indigenous communities in the Alaskan and Canadian Arctic, and will develop a framework for expansion of the CLEO to the Nordic and Russian regions. Phase II of the project is to establish CLEO Chapters in the Nordic and Russian regions. Phase III of the project will link the CLEO Chapters together. Phase I of the project has been funded by the Commission for Environmental Cooperation (CEC) and the US EPA and is targeted for completion by 2017. Funding application will be submitted to the Nordic Council of Ministers. Implementation of Phases II and III of the project will take place during the Finnish Chairmanship Cycle. [ACAP approval is required.]

Co-Leads: USA, others TBD

Timing: 2015- 2017 for Phase I

Budget: 300k USD for Phase I

- ACAP working to expand @LEO across the Arctic! ArcticCouncil

Conference on best practices on contaminant reduction in indigenous communities

The project aims at organizing an information conference on best practices on contaminant reduction in indigenous communities in 2016. ACAP approval is required.

Co-leads: Russian Federation, RAIPON

Timeline: 2015-2017

Budget: Unknown

- Circumpolar information exchange conference on best practices to reduce contaminants in indigenous communities is being planned for 2016.

Other Working Group Priorities

Non-ferrous/Zinc Smelter Mercury Reduction

The project aims to appropriately identify, further develop and apply pollution reduction technologies at a non-ferrous/zinc smelter in Russia, including related monitoring. A stakeholder workshop is planned with the aim of securing commitment from the project facility.

Co-Leads: USA, the Russian Federation and NEFCO

Timeline: 2015-2018

Budget: Unknown (tentatively 2-5 million USD).

Mercury Emissions Control Technology Workshop

The project is focused on disseminating results of successful demonstration projects in the Russian Federation, including a demonstration of how standard activated carbon and brominated carbon injections at coal-fired power plants can be used to remove mercury emissions. . The workshop will discuss information on mercury emissions control technologies and approaches to assist in the development of the Russian Federation's action plan for implementation of the Minamata Convention.

Co-leads: USA and the Russian Federation

Timeline: 2015

Budget: Unknown (tentatively 250 k USD)

Demonstration of environmentally sound destruction of obsolete pesticides

The project will work together with Russian experts and the Ministry of Natural Resources and Ecology, to assess technologies for environmentally sound destruction of obsolete pesticides in northern Russia, when such capacity becomes available. Pending the approval of such technologies, the project will demonstrate destruction of 100 tonnes of obsolete pesticides in an environmentally sound manner. The project will seek synergies with the Russian Federation implementation of Stockholm Convention on POPs, as well as the PCB destruction project for management of PCBs in transformers in Russia. A progress report and possible results from the assessment and demonstration project is anticipated at the Arctic Council Ministerial meeting in 2017.

Co-leads: Finland and Russian Federation

Timeline: 2015-2017

Budget: Unknown. Dependent on the available technology.

- The lack of capacity for environmentally sound destruction of hazardous waste in Russia leads to environmental contamination and use of techniques that are not internationally accepted.

Demonstration of Rapid Environmental Assessment of Pesticides Contaminated Sites

The project will assess contamination of three old pesticides storages/burial sites using a Rapid Environmental Assessment developed for UN Food and Agriculture Organization

(FAO) to assess the risk to local population and the Arctic Environment. ACAP approval is required.

Co-leads: Finland and Russian Federation

Timeline: 2015

Budget: 50 k EUR

- Hundreds of pesticides storage facilities, and the surrounding soils and waters, in the Arctic have been contaminated due to improper storage conditions in the past decades.

Demonstration of clean-up of a contaminated pesticide storage/burial site in Northern Russia

Depending on the results of the Rapid Environmental Assessment (REA), the project will demonstrate environmentally sound clean-up of an old pesticide storage site/burial site, including destruction of the hazardous waste. The project will contribute to the Russian implementation of Stockholm Convention and the work of the Basel Convention Regional Centre. Depending on the outcome, a progress report is anticipated to the Ministerial meeting in 2017. ACAP approval is required.

Co-leads: Finland and Russian Federation

Timeline: 2016-2018

Budget: Unknown

- Cleaning up pesticide contaminated sites near Arctic villages will prevent contamination of drinking water and food chain and transport within the Arctic.

Implementation of the Action Plan for dioxins and dust emissions reduction at the Vorkutinskiy Cement Plant (VCP)

The project aims to determine actual dioxin emissions at Vorkutinskiy Cement Plant and take measures to reduce dioxin emission.

The project is likely to seek funding from PSI

Lead: Sweden, Co-leads: Russia, Norway

Timeline: 2013-2017

Budget: 2-5 Million EUR

- Reduced exposure to dioxin and furans for populations in Vorkuta as well as other part of the Arctic, including indigenous people

Inventory Programs, Control Technologies and other Support to Russia's Compliance with International Convention Requirements

The project aims to extend the previous ACAP dioxin inventory activities to other regions of the Russian Federation. It will also promote pilot projects on dioxin emission reduction and nationwide dioxin and furan inventory organised by Russian authorities. The overall objective is to increase capacity for Russian authorities and industry to comply in practice with the requirements of international conventions such as Stockholm, Basel and Rotterdam. Further pilot projects to reduce releases of dioxins and furans in the Russian Federation may be developed.

Lead: Sweden assisted by Russia, Norway and NEFCO

Timeline: 2015-2018

Budget: 0.7 – 1.6 million EUR

- Reduced exposure to dioxins and furans for populations in the Arctic including indigenous people

Regional integrated hazardous waste management strategy pilot project

Develop an Integrated Hazardous Waste Management Strategy (IHWMS) focusing on 1-2 Northern pilot regions of the Russian Federation that will address, among other items, disposition and destruction of collected contaminants, mercury containing wastes, brominated flame retardants containing waste, POPs including PCBs, dioxins and furans, perfluorinated chemicals and obsolete pesticides. ACAP approval is required.

Lead: Russian Federation

Timeline: 2015-2017

Budget: Unknown

Demonstration of management and destruction of 250 tonnes of PCB in transformers in Russian Federation

This project is currently on hold, awaiting permits for construction of an environmentally sound destruction facility. The project will closely follow the development of hazardous waste management capacity in the Russian Federation.

Co-leads: Russian Federation, USA and NEFCO

Timeline: Unknown.

Budget: Unknown (tentatively 3 Million EUR).

Eliminating PCBs on Franz Joseph Land Islands

The project aims at identification of PCB-containing waste on Graham Bell, Heiss and Hoffman Islands, their collection and analysis, elimination of liquid waste using a SKGO-10 mobile facility, technical and biological remediation and monitoring of contaminated areas and development of proposals for improving the system to identify, gather, store and dispose of PCB in the Arctic zone of the Russian Federation. The project requires ACAP approval.

Co-leads: Russian Federation, NEFCO

Budget: 2 Million EUR