PAME II-2020 – Shipping Expert Group Pre-meeting
Agenda item 6.9 (a)

(DRAFT) Project Proposal - Wastewater Discharges from Vessels in the Arctic - A Survey of Current Practices

Submitted by Iceland, WWF, CCU

Context

The impacts from shipping can be severe and the risks real to both marine habitat and Indigenous and community food security in the Arctic. Risks are equally high if essential goods and development do not reach people in the Arctic. The challenge for policy makers is to get the rules right to decrease the impacts and provide opportunity for people in the Arctic. Part of contributing to effective management and regulation of shipping is being on top of emerging social and environmental issues early, to give operators plenty of lead time for adaptive management, which will reduce impacts as soon and as effectively as possible. Wastewater discharge from ships, including grey water, sewage, and exhaust gas cleaning system (scrubber) effluent, is one such issue.

Goal of the Project

Through a survey directed at shipping operators and associations, develop a better understanding of vessel practices related to wastewater discharges in the Arctic. The findings will inform potential future dialogue within the Arctic Council as well as ongoing discussions at the IMO.

Based on survey results, a second phase of the project will be contemplated which could include policy recommendations and best practices and possible further research.

Definitions and Potential Impacts

Grey water - considered drainage from accommodation (e.g. shower, bath), laundry and dishwater and is distinct from drainage from toilets, urinals, hospitals, and cargo spaces.[1] Grey water can contain a variety of environmentally harmful pollutants and contaminants, including microplastics, nutrients, oil and grease, detergent and soap residue, harmful cleaning products, pharmaceutical and personal care products, heavy metals (e.g., copper, lead, mercury), coliform bacteria and pathogens.[2]

Sewage – also known as blackwater, is the general term for drainage and other wastes from toilets and urinals, medical premises, and spaces containing living animals.[3] [4] Sewage discharge can contain pharmaceutical and personal care products, as well as introduce invasive species and produce fecal-contaminated waters, which pose health risks to people who eat fish and other seafood from these areas.[5] [6]The environmental impacts of sewage discharge can be amplified in areas with low temperature and light conditions. For example, sewage

[1] E.g., 2017 Guidelines for implementation of MARPOL Annex V (resolution MEPC.295(71)).
[2] Nowlan, L. and Kwan, I. 2015. Cruise Control – Regulating Cruise Ship Pollution on the Pacific Coast of Canada. West Coast Environmental Law. Retrieved from: https://georgiastrait.org/wp-content/uploads/2015/02/CruiseControl_WCEL.pdf
[3] MARPOL Annex IV, see resolution MEPC.115(51).
[4] Government of Canada. 2012. Vessel Pollution and Dangerous Chemicals Regulations (SOR/2012-69). Retrieved from https://laws-lois.justice.gc.ca/eng/regulations/sor-2012-69/page-1.html
[5] Transport Canada. n.d. Complying with Sewage Discharge Regulations. Retrieved from http://www.bccdc.ca/resource-gallery/Documents/Educational%20Materials/EH/FPS/Fish/SEWAGEDISCHARGE_ENG.pdf
[6] Smith, J.J. and Riddle, M. 2009. Sewage disposal and wildlife health on Antarctica. In: Health of Antarctic Wildlife: A Challenge for Science and Policy, pp 271-315. Springer, Berlin Heidelberg, Germany.

discharge in the Arctic has a slow decomposition rate.[7]

Exhaust Gas Cleaning Systems - also known as scrubbers, are designed to remove sulfur oxides from exhaust gases from fuel burned in marine engines.[8] The process generates scrubber liquid effluent that has low pH and contains heavy metals and polycyclic aromatic hydrocarbons (PAHs) that pose a risk to the marine environment. Coastal communities that rely on healthy marine species for food and livelihood may also be impacted.[9]

Indigenous and Local Community Engagement

Local communities and Indigenous residents in the Arctic have the most to gain by well managed and sustainable shipping practices. They are also the most impacted by pollution and ecosystem decline. Meaningful engagement of Indigenous and local communities during the project is essential, and IK (Indigenous Knowledge) and community perspectives will be included in developing the project scope, survey questions, and finalizing the report.

Survey of Current Practices

To understand current practices of Arctic shipping operators in dealing with discharges of grey water, sewage and scrubber effluent, a survey approach is proposed.

A third-party contractor will be hired to conduct the confidential survey. Non-attributed results will be summarized, and a report written and shared with PAME members for comment, review and finalization.

By collaborating with industry associations like AECO (Arctic Expedition Cruise Operators), the consultant will conduct outreach and request interviews of current shipping operators, including cruise and tourism, pleasure craft, ferries, bulk carriers, fishing, research, tankers, and community and development project re-supply.

Examples of possible survey questions:

1. What is your policy on wastewater (greywater, sewage, and scrubber effluent) discharges? (Where, how and when is it discharged, any special considerations for the Arctic or special areas?)
2. Do you have monitoring and recordkeeping in place for wastewater (greywater, sewage, and scrubber effluent) discharges? If so, what are they? Do you have a sampling program and are logbooks kept and updated?
3. Holding – do you have dedicated holding tanks for wastewater (greywater, sewage, and scrubber effluent)? What is the capacity for each?
4. Do you have a practice of shoreside discharges for wastewater (greywater, sewage, and scrubber effluent)? If so, what is the procedure?
5. Do you have treatment equipment for wastewater (greywater, sewage, and scrubber effluent)? Any pre-screening of solids? And, do you separate out the various wastewater streams? Is there any shared equipment or tanks with ballast water systems, or can wastewater be used as ballast?

[7] International Maritime Organization (IMO). 2010. Additional MARPOL provisions for the Polar Code. Retrieved from https://1bps6437gg8c169i0y1drtgz-wpengine.netdna-ssl.com/wp-content/uploads/2017/webiva_fs_2/DE_54-13-8_-_Additional_MARPOL_provisions_for_the_Polar_Code_FOEI_IFAW_WWF_Pacific...1.pdf

[8] Lange, I. B., Markus, T. and Helfst, L. P. 2015. Impacts of scrubbers on the environmental situation in ports and coastal waters. Umweltbundesamt. Retrieved from http://www.umweltbundesamt.de/publikationen/impacts-of-scrubbers-on-the-environmental-situation

[9] Winnes, H. et al. 2018. Scrubbers: Closing the loop – Activity 3: Summary environmental analysis of marine exhaust gas scrubbers on two Stena Line ships. IVL Swedish Environmental Research Institute. Retrieved from https://www.ivl.se/download/18.20b707b7169f355daa775fc/1561358335876/B2317.pdf

6. What are the volumes, estimated or measured, for wastewater (greywater, sewage, and scrubber effluent) discharge? if so, how is this done or how is it estimated? What is the daily amount of water used onboard?
7. Food wastes - how is it handled? Are there any discharges of water from food?
8. What is the chemical use onboard and how does that use relate to wastewater discharges? Is it handled separately?
9. Are there cleaning or personal hygiene products (e.g.,ecofriendly shampoo) that are recommended for crew and passengers? Is there an education program for crew and passengers on wastewater?
10. Is any treated wastewater recycled for use such as cleaning or other uses such as toilet flushing?

Synergies within PAME

The survey findings may contribute to, and inform on, any further work on Arctic Marine Tourism, including the ongoing tourism project at PAME . Also, the survey data will be a valuable addition to the Arctic Shipping Best Practices Information Forum under Polar Code Part IIA, Chapter 4.

Workplan and Timeline

Workplan and timelines to be determined by project team and co-sponsors after approval at PAME II – 2020. Hiring a research/polling company and developing the survey will likely be the first step if the project is approved. It is anticipated that by PAME II 2021 a final report will be submitted to PAME.

Budget

A contract with a research/polling firm will be most of the project budget. $37,000 CAD has been secured to date which is anticipated to cover the contract along with other project costs.

Co-sponsors

Iceland, CCU and WWF. There is an open invitation from the current co-sponsors for PAME member states, Permanent Participants, and observers to join the project as official co-sponsors or to collaborate on the project.

Contacts

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Actions requested by PAME

Review and provide comments with the aim to update accordingly for inclusion into the PAME 2021-2023 Work Plan.