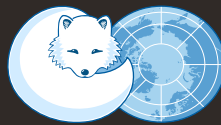


# REPORT: EPPR Arctic Oil Spill Research and Development Workshop

ARCTIC EMERGENCY  
MANAGEMENT CONFERENCE  
BODØ, NORWAY

20TH OF MARCH  
2025



ARCTIC COUNCIL



EMERGENCY PREVENTION,  
PREPAREDNESS AND RESPONSE



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## Reference

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# 1. INTRODUCTION

## 1.1. BACKGROUND

On behalf of the program committee for the Arctic Emergency Management Conference, in Bodø, Norway, 18th – 20th of March 2025, the EPPR Arctic Oil Spill Research and Development Initiative (R&D Initiative) co-chairs planned and facilitated an Oil Spill R&D Workshop. The workshop was an arena for updates, discussion and dialogue related to oil spill response research and development in Arctic and sub-Arctic environments. The workshop brought together stakeholders from member states of the Arctic Council, academia, industry, and research institutions to discuss the current state of oil spill R&D, share updates, and identify future priorities. The workshop also served to explore opportunities for collaboration between the R&D Initiative and the NORDLAB facilities located at Nord University.

The 2025 workshop built on the successful workshop also conducted in Bodø in 2019 titled “Arctic Oil Pollution Research and Development Workshop.”

The R&D initiative, a sub-group of the Marine Environmental Response – Expert Group, planned and facilitated the workshop on behalf of the program committee.

## 1.2. PURPOSE

The purpose of the oil Spill R&D workshop was to facilitate discussion on:

- Current oil spill R&D projects in the eight Arctic member states.
- Promotion of the Arctic Council’s new online information sharing portal devoted to Arctic oil spill R&D.
- Identifying current and emerging Arctic oil spill R&D gaps that can inform future projects and funding needs.

## 1.3. STRUCTURE OF THE MEETING

The workshop was chaired by Kent Lien from Canada Energy Regulator and Synnøve Lofthus from the Norwegian Coastal Administration.

The workshop participants were welcomed by Synnøve Lofthus, reviewed the agenda for the day, and workshop participants introduced themselves (list of participating organizations are showed in the appendix). The introduction was followed by an overview of the mandate and history of the R&D initiative, by Kent Lien.

Following the opening session, Natalia Andreassen and Rune Elvegård from Nord University gave a presentation and a guided tour of NORDLAB, providing participants with insights into the lab’s facilities and activities.

A key focus of the workshop was the development of an information-sharing portal under the oil spill R&D initiative. Participants were invited to share their expectations and suggestions for the portal’s content, for help in further development.

Member states of the Arctic Council had been invited to present updates on oil spill R&D efforts in their respective countries. Canada, Norway, and the United States provided country-specific presentations.

The national updates were followed by a presentation from Liv-Guri Faksness from SINTEF, who offered a historical perspective on Arctic oil spill R&D from an industry perspective.

The day concluded with a plenary group discussion where participants identified key research gaps and needs to guide future oil spill R&D efforts in the Arctic region.

## 2. PRESENTATIONS

### 2.1. COUNTRY PRESENTATION – CANADA

Presented by Kent Lien, Technical Leader, Emergency Management at Canada Energy Regulator.

Title: A Brief Overview of Canadian Oil Spill Research and Development Activities

Pre-recorded presentation – Vanessa Beaulac, Environment and Climate Change Canada

Title: Environment and Climate Change Canada (ECCC) Oil Spill Science to Support Arctic Emergency Response

### 2.2. COUNTRY PRESENTATION – UNITED STATES

Pre recorded presentation by Eric Miller, Deputy Assistant Director for Oil Spill Preparedness at Bureau of Safety and Environmental Enforcement.

Title: Arctic Oil Spill R&D Update

### 2.3. COUNTRY PRESENTATION – NORWAY

Presented by Synnøve Lofthus, Senior Advisor at the Norwegian Coastal Administration.

Title: Research updates from Norway – Oil spill preparedness R&D

### 2.4. OTHER PRESENTATIONS – SINTEF

Liv-Guri Faksness, Senior Researcher at SINTEF gave a presentation titled:

Title: Oil spill R&D in the Arctic - History



# 3. DISCUSSIONS AND GROUP WORK

## 3.1. INPUT ON THE OIL SPILL R&D INFORMATION SHARING PORTAL

During the discussion on the Arctic Oil Spill R&D Information Sharing Portal, participants shared the following suggestions and ideas:

- Include access to ‘grey literature’ such as internal reports and non-published studies.
- Provide an overview of past R&D efforts, including both successes and failed approaches, and information on how to access past research.
- Highlight innovations that may not be widely known within the broader community.
- Collect access to global guidelines and standards, such as IPIECA fact sheets.
- Include data on regional baselines to support evaluations of spill impact and recovery including regulatory requirements for clean-up endpoints.
- Feature lessons learned from past exercises, as well as notifications about upcoming ones.
- Offer a function where field personnel can suggest new research ideas.
- Maintain a list of institutions open to knowledge-sharing.
- Ensure the portal is user-friendly and easily accessible.
- Could the information sharing portal build on the Arctic Council Lessons Learned Arena platform?
- Implement a regular newsletter to keep the community engaged and aware of the portal’s resources.
- Include information on potential R&D funding opportunities such as through ITOPF and BSEE.

## 3.2. R&D KNOWLEDGE GAPS AND NEEDS

The workshop co-chairs facilitated a plenary discussion with the participants on the following questions and topics. The participants answers are summarized below, based on notes taken by the co-chairs.

- What are the most pressing research gaps regarding oil spill preparedness and response?

### **Fate of oil in the marine environment**

- What are the impacts of one single big versus medium to medium to small spills? Most research and knowledge are related to the bigger spills, and there is little research on the impact of small and medium diesel spills.
- What is the ultimate fate of the hydrocarbons spilled and their potential degradation? It is still unknown when the contamination is really gone, in terms of metabolites.
  - What are the metabolites of hydrocarbon degradation?
    - What is the bioavailability?
    - Is fingerprinting feasible?
  - What are their effects, and how long are the spilled hydrocarbons influencing the environment?
  - When is an impacted area back to normal, and when can a community treat it as such?
    - In the context of both the environment and food safety.
    - What are the baseline values, in different areas?

### **Operational limitations of equipment and people in challenging environments**

- There is a need for better ice forecast systems.
- There remain challenges related to ice spray on equipment
  - What can be done?
  - How to operate equipment?
  - Not only an “oil spill preparedness” problem, fish-farms also struggle

- How to train for bad weather and challenging conditions?
  - An identified challenge in incorporating bad weather in an exercise, is that is challenging to even conduct the exercise.
- Understanding climate change impact on the Arctic in an oil spill perspective

### **New fuel types and energy carriers**

- There are still many questions related to detection, response to and impact of low sulfur fuel oils
- How to respond to new energy carriers?
  - Alternative fuels
  - Ammonia
  - Batteries
  - Mixed spills

### **Field trials**

- Need for actual in-situ field trials. Regulatory agencies continue to be reluctant to allow actual release of hydrocarbons in an exercise and research context. If environmental impacts are likely to be minor, the knowledge gained would far outweigh any minor negative impacts.

## **4. CONCLUSIONS**

- Workshop participants unanimously indicated that the workshop was valuable and will provide excellent information for advancing the goals of the R&D Initiative and oil spill R&D activities overall.
- There was strong consensus on the importance of continued cooperation and collaboration among researchers, regulators, and industry to address R&D gaps and challenges.
- The workshop also provided timely and helpful input regarding the ongoing development of the Arctic Oil Spill R&D Information Sharing Portal. This feedback will be carefully considered by the R&D Initiative co-chairs as they advance development of the portal.
- Participants broadly agreed that the R&D Initiative is a valuable forum for advancing oil spill R&D activities in Arctic and cold-water environments and ongoing support was expressed.
- Finally, the workshop affirmed the conclusions of the 2019 Arctic Oil Pollution Research and Development Workshop held in Bodø and it also identified progress made since that workshop.

## **APPENDIX – PARTICIPATING ORGANISATIONS**



ORGANISATION	COUNTRY
ARKTOS Developments	Canada
Canada Energy Regulator (CER)	Canada
Environment and Climate Change Canada (ECCC)	Canada
Equinor	Norway
Finnish Ministry of the Interior	Finland
ITFOPF	United Kingdom
Kongsberg Maritime	Norway
Memorial University of Newfoundland (MUN)	Canada
Norwegian Coastal Administration (NAC)	Norway
SINTEF Ocean	Norway
United States Bureau of Safety and Environmental Enforcement	United States

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